Department of Information Systems



DEPARTMENT OF
INFORMATION SYSTEMS

Academic Program(s) Review
2025

APR Information Systems 2025

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1. Executive summary

We have prepared this academic program review document with input from the Chair, Associate Chair for Academic Affairs, Graduate Program Directors, Undergraduate Program Directors, and various faculty members within the department of Information Systems (IS). This document has been prepared in accordance with the guidelines provided by the Office of the Provost using data provided by the Office of Institutional Research Analysis and Decision Support, as well as data gathered by the College of Engineering and Information Technology and the IS Department.

The IS Department offers two Bachelor's, five Master's, and two Ph.D. programs with a total enrollment of over 2000 students. The department currently has 43 full time faculty including 29 tenured or in tenure track (T/TT). Aligned with the mission of UMBC, the goal of the IS Department is to be a global leader at the intersection of information, technology, and people, by promoting inclusive student-centered teaching, reimagining life-long learning, advancing innovative interdisciplinary research, and championing civic engagement. The department's educational goal is to develop the technical, problem solving, and communication abilities of our undergraduate and graduate students, through well thought out state-of-the art curricula. Through this process, we

prepare our graduates to enter the workforce as IT professionals in a competitive environment that also has one of the highest prospects for job growth in the future. In addition, we provide our Ph.D. students with the necessary training to perform rigorous research and make significant and novel contributions in their fields of specialization. In order to achieve these goals, we continuously monitor, update, and assess our curricula, reach out to our students, alumni and employers for feedback, and incorporate changes as necessary.

In this APR cycle, the department has seen significant growth in both undergraduate and graduate enrollment. Undergraduate enrollment has increased by over 17% in 2024 compared to 2018 and graduate enrollment has increased by over 48% in the same period. The IS department has graduated 863 students with a BA in Business Technology Administration (BTA) and 2777 students with a BS in Information Systems (IS) in Academic Years 2019-2024, which accounts for 13% of all UMBC bachelor degrees granted during this period. The department has graduated 2399 Master's students during the same period, accounting for over 25% of the UMBC total. The faculty also supervised a total of 69 Ph.D. dissertations and 23 Master's theses, which is a considerable increase from 46 dissertations at the time of the last APR in 2018. U.S. News ranked the online Master's degree in information systems at 34th place in the nation in 2023. The department launched a new Masters in Professional Studies (MPS) program in Software Engineering in 2021, which is the fifth Master's program in the department. Students in the IS Department constitute among the largest student body in the College of Engineering and IT in terms of participation in internship opportunities. The department has a strong track record of placing students to state and federal agencies as well as in industry and academia, and hence making significant contributions toward UMBC's mission of developing economic and policy leaders for the state and the community. Overall based on data from the last seven years, 85-92% of our BS graduates and 82-98% of our BA graduates are employed within 6 months of graduation. About 80% of our BS/BA graduates get employed in industry, about 10% in government, and about 5% continue their education for an advanced degree. In addition, 92% of our MS graduates get employed within six months from graduation (MS in IS: ~80% in industry, ~10% in government, MS in HCC: ~75% industry, 15% government). Students in our professional MPS in Health IT are placed in industry (~70%) and government (~20%) all in the healthcare sector. The MPS in Software Engineering is relatively new (launched in 2021) with very little data to report. Finally, 100% of our PhD graduates are employed in industry, government, or academia. Our alumni hold significant positions such as University President (at Clemson University) and various leadership positions in the IT industry. Three IS alumni have won UMBC Alumni awards during this period.

The IS faculty has engaged in many pedagogical innovations and integrated research and education. One such example is the number of educational grants the IS faculty have received. For example, in FY 2023 alone, there were 10 active educational grants including two NSF REUs. Another example is that the IS faculty have won five Hrabowski Innovation Awards during the evaluation period, which is dedicated to pedagogical research (only three such awards are given on average per year across the whole university).

The faculty of the IS Department is committed to the conduct of high quality research and dissemination of research results through peer-reviewed publications in various national and international conferences, journals, books, and book chapters. Most research within the IS Department fits within five core areas: Artificial Intelligence, Data Science, Health IT, Human-Centered Computing, and Software Engineering. Many faculty members also work on cross-cutting areas such as STEM learning and computing education, and cyber security.

In this APR cycle, the IS department has seen a significant growth of research awards received and research expenditure. IS faculty also received five prestigious NSF CAREER awards during this period. The total external research award amount increased from $3.3 million in 2018 to $11.5 million in 2023. IS faculty exhibit increasing successes with large interdisciplinary awards such as

the $20.5 million award from Army Research Laboratory, led by Dr. Aryya Gangopadhyay and Dr. Nirmalya Roy, and the $13 million award from NSF for creating the NSF HDR institute for Harnessing Data and Model Revolution in the Polar Regions, led by Dr. Vandana Janeja, who also won the prestigious Board of Regents Award in Scholarship or Research in 2024.

IS faculty research also often engages with local communities. For example, Dr. Hamidi has led multiple projects including one on maker-based technology and computing experiences which has expanded to 18 Baltimore and Pittsburgh recreation centers, serving hundreds of youths underrepresented in STEM.

The growth of the department creates both opportunities and challenges, and the department also plans on many future improvements such as creating new interdisciplinary programs, attracting more domestic students to our graduate programs, strengthening student mentoring and training of TAs and graders, and adjusting curricula to reflect technology advancements. Two further improvements will bring the greatest benefit to the department. First, *hiring more full-time faculty* to reduce the student-teacher ratio as our enrollment continues to grow. This will also allow our faculty and staff to achieve a better work-life balance and maintain sustainable growth of education and research output. Another pressing need is to find more space for faculty offices and research labs and to upgrade existing facilities. The university has no new buildings planned for the immediate future, but the IS department as well as the college have very limited space for new faculty, research labs, and space for students.

2. Program review

2.a Description of program(s)

The Department of Information Systems (IS) at UMBC addresses the application of information technologies, from both research and practice, to achieve the goals of individuals or organizations. It is affiliated with the College of Engineering and Information Technology (CoEIT). The IS Department provides a state of the art educational experience to students at the undergraduate and graduate levels, including two undergraduate programs, five Master's programs, two Ph.D. programs, two Minors and fourteen Certificate programs. Many of our students engage in research to produce significant and novel results that are of value to the discipline. In addition to teaching the key areas in IS, we seek to make our students problem solvers, well-positioned to be ideal employees for public and private sector organizations with significant IT requirements. In addition, in our two Ph.D. programs we seek to produce students who will make significant and novel research contributions in the fields of Information Systems (IS) and Human-Centered Computing (HCC). The faculty is committed to conducting state-of-the art research, publishing findings and outcomes in high quality outlets, and competing for external funding to help grow our graduate and undergraduate programs.

Relationship to UMBC mission/vision statements
IS Vision Statement: The vision of the Information Systems (IS) department is to expand its role as global leaders at the intersection of information, technology, and people, by promoting inclusive student-centered teaching, reimagining life-long learning, advancing innovative interdisciplinary research, and championing civic engagement. This is closely aligned with UMBC's vision on innovative teaching and learning, research across disciplines, and civic engagement.
IS Mission Statement: The mission of the Department of Information Systems is to:

- Broaden participation and empower student learning through teaching and mentorship for the development of real world skills in the design and implementation of information technologies.
- Advance fundamental, technical and applied research to support both developers and users of information systems.
- Encourage continuous learning and growth of our UMBC community by fostering innovation and collaboration to build a diverse and modern professional workforce which can adapt to a dynamic environment.
- Promote social justice through civically engaged research, teaching and service.
- Create a positive impact on our local community and the global society.
- Continuously evolve and communicate our unique identity by advancing innovation, inclusion, and interdisciplinary collaboration.

The IS vision and mission statements dovetail very nicely high those of the university. The vision and mission of the IS department focus on innovative teaching and high quality research in a multidisciplinary effort towards inclusive excellence at the intersection of information, technology and people. The IS department offers quality undergraduate and graduate education preparing students to contribute to economic development of the State and produces state of the art research as part of an R1 research-intensive university.

Degrees offered:	Initial offering
1. B.S. in Information Systems	1980
2. B.A. in Business Technology Administration (renamed)	1991/2004
3. M.S. in Information Systems	1985
4. M.S. in Information Systems Online	2000
5. M.S. in Human-Centered Computing	2006
6. M.P.S in Health Information Technology	2014
7. M.P.S. in Software Engineering	2021

8. Ph.D. in Information Systems 1985
9. Ph.D. in Human-Centered Computing 2006

Non-degree programs offered:

1. Minor in Information Systems 2012
2. Minor in Management 2023
3. Undergraduate certificate in Auditing for IS 2008
4. Undergraduate certificate in Business Analytics 2023
5. Undergraduate certificate in Cybersecurity Informatics 2023
6. Undergraduate certificate in Decision Making Support 2005
7. Undergraduate certificate in Health IT 2017
8. Undergraduate certificate in Management Science (renamed) 1983/2017
9. Undergraduate certificate in MBA Prep Studies (renamed) 1991/2017
10. Undergraduate certificate in Network Administration 2005
11. Undergraduate certificate in User Experience, Web & Mobile Dev't 2021
12. Graduate online certificate in Foundations of Information Systems 2023
13. Graduate online certificate in Artificial Intelligence 2023
14. Graduate online certificate in Cybersecurity Informatics 2023
15. Graduate online certificate in Data Science Informatics 2023
16. Graduate online certificate in User Experience Design 2023

The IS department also provides the capability to highly qualified undergraduate students to obtain an accelerated Master's degree. There are several such accelerated programs: BS-MS in IS (on-campus and online), BA-MS in HCC, BS-MS in HCC, BS in CS to MS in HCC, as well as BS-MPS programs in Health IT and finally from a BS in IS, BTA, Computer Science or Psychology to MPS in Software Engineering.

Department organization and leadership: The IS Department organization and leadership structure consists of the department chair, an associate chair for academic affairs, seven program directors for the undergraduate programs (IS, BTA) and the graduate programs (IS, HCC, HIT, SENG) along with two associate UG program directors for IS, and an assistant graduate program director for HIT. In addition, there are three liaisons for programmatic innovations, research innovations, and external partnerships.

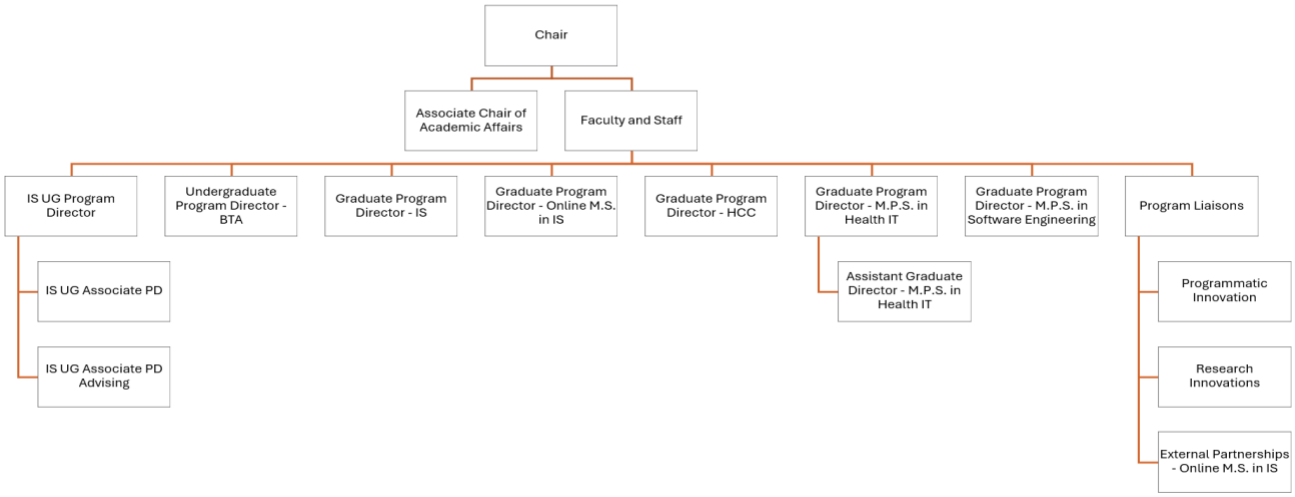


Figure 1. Organization and Leadership of the IS department

Faculty: Currently there are 43 full-time faculty and 34 part-time (adjunct) faculty. Among the full time faculty, the department has 8 full professors, 12 associate professors, 9 assistant professors, 4 teaching

associate professors, 6 teaching assistant professors, and 4 professors of practice. The department has 19 female full-time faculty members and 3 full-time faculty members belonging to underrepresented minorities.

Staff: The department's operations are supported by six full-time staff including an IT systems administrator, an academic affairs manager, a graduate program manager, an assistant director of marketing, a program coordinator, and an administrative assistant.

The department has eleven standing committees including an undergraduate programs committee, three graduate programs committees, a graduate professional programs committee, an assessment committee, a research committee, an adjunct faculty committee, a graduate admission committee, an awards committee, and a mentoring and retention roundtable. In addition, an ad hoc committee is formed each year for merit review. Other ad hoc committees are formed when necessary such as committees for faculty recruitment and faculty promotion and tenure. The organization chart is shown in Figure 1.

Specializations: The specializations in the academic programs are described in Section VI. There are five primary research areas of the faculty including Human-Centered Computing (HCC), Data Science (DS), Artificial Intelligence and Knowledge Management (AI/KM), Software Engineering (SE), and Health Information Technology (HIT). Some faculty members have secondary and overlapping areas of research interests. Additionally, many of the faculty work on cross-cutting areas including but not limited to STEM learning and computing education, and cyber security.

2.b Analysis of data provided by IRADS & the Provost's Office

2.b.1 Admissions trends

Undergraduate Program Admission Trends: In the past seven years, both the number of applications and enrollment have increased in both IS and BTA programs (see Figure A.1 and Figure A.2 in Appendix A). This shows an increase of demand for these two programs. The increase for freshmen is more significant than the increase for transfer students, possibly attributed to stronger advertising of our programs, as in the past most high school students and counselors were often unaware of our programs, and students often transferred from other computing majors into our programs later when they found our program to be a better fit.

Graduate Program Admission Trends: At Master's level, the number of graduate applications and enrollment for the IS on-campus MS program and the two professional master's programs (Health IT and Software Engineering) experienced a dramatic increase right after the Covid Pandemic, possibly due to pent-up demand, especially from international students (See Figure A.3 in Appendix A). Both numbers decreased from the peak recently, but are still higher than pre-Covid numbers. We have recognized the volatility in international applications and we are stepping up efforts to diversify application pools, as well as diversifying our offerings, including five new certificates for MS Online and micromasters, which is a series of online courses that students can take to earn credentials or use them as a pathway to our MS programs. The department has also hired a staff member to help recruitment efforts, including a number of initiatives such as advertising accelerated programs in undergraduate courses when students become eligible to apply. We have also started a number of accelerated BS/MS or BA/MS programs in recent years, sometimes involving undergraduate programs outside the IS department. We are also working with a local liberal arts college to create a pathway for their students to enroll in our online MS program. This model can be duplicated to other local liberal arts colleges or other programs. There was also a decrease of yield rate during the period when the number of applications increased dramatically, possibly because those programs became more selective during the period and admitted students had more options. Moving forward, the department will dynamically adjust the admission standard based on application trends to stabilize enrollment.

At Ph.D. level (See Figure A.4 in Appendix A), the number of applications and enrollment of both IS and HCC programs have increased. During the pandemic, the department decided to temporarily remove the GRE requirement and after the pandemic GRE remains optional. This may have caused a temporary increase of admissions during the pandemic but after pandemic the admission rate has been similar to the rate before pandemic. The yield rate also fluctuated, largely due to the number of Teaching Assistantships the department offered to new students varied each year. Moving forward, the department will try to increase the number of TA lines to increase the yield.

2.b.2 Enrollment trends and degrees awarded

Undergraduate programs: our department has seen an increase in undergraduate enrollment (see Figure A.5 in Appendix A): BTA enrollments increased from 344 to 407 and IS enrollments increased from 937 to 1134. There was a drop in 2021-2022 due to the pandemic but the enrollment soon recovered after that. The IS minor enrollment is flat but the newly created Management minor has a good start, with an enrollment of 60 students in Fall 2024. Some upper division certificate programs experienced an increase (e.g., User Experience certificate) while some experienced a decrease, reflecting changing interests from our students.

The number of degrees awarded in the IS program (see Figure A.7 in Appendix A) experienced an increase during the pandemic but fell back to 2018 levels in 2024. A similar trend exists for the BTA program. This is largely due to the lag between graduation and initial enrollment and we expect this number to increase in future years.

Our student population also becomes more diverse in this evaluation period. Figure A.9 in Appendix A shows that among undergraduates, the percentage of female students increased from 24.38% in Fall 2018 to 31.15% in Fall 2024. Both numbers from URM groups and minority students increased substantially (URM more than doubled and minority increased by around 50%).

Graduate Programs: In both of our Ph.D. programs we observe a net increase of enrollment. The total number of Ph.D. students has exceeded 100 since Fall 2023 (see Figure A.6 in Appendix A). This reflects the increase of our faculty's research productivity as well as increased funding available to support students. The IS on campus MS program as well as the two MPS programs have seen a net increase of enrollment, though all of them experienced a dramatic increase right after the Covid-19 pandemic followed by a decrease. We plan to stabilize enrollment growth in these programs by dynamically adjusting admission standards as well as diversifying the application pool with an emphasis on recruitment of domestic students. The online MS program experienced a drop in enrollment during the pandemic but recovered to some extent recently, due to increased marketing effort (please see sample marketing materials in Appendix J). We plan to continue marketing efforts for the online MS program, including creating partnerships with local liberal arts colleges, offering scholarships to admitted students, etc. We also plan to offer more micromasters as a pathway to our MS program. We started one micromaster on databases in 2023 and plan to offer four more on AI, User Experiences, Data Sciences and Cyber Security.

The graduate student population also becomes more diverse (see Figure A.10 in Appendix A), with female students accounting now for over 50% of the student body; in addition, the number of students from URM increased from 65 to 83.

Figure A.8 shows the number of degrees awarded in various graduate programs. All programs experienced an increase, some quite dramatically (e.g., for the Health IT MPS program and IS on-campus MS program) due to the fluctuation in enrollments. The HCC PhD program did not graduate any PhD students in 2024 but a couple of HCC PhD students are expected to graduate in 2025.

2.b.3 Ratio of transfer students to 1st time freshmen

For both undergraduate IS and BTA programs, we see an increase of first time freshmen vs. transfer students over the seven-year period (see Figure A.11 and Figure A.12 in Appendix A). Specifically, seven years ago the ratio in IS of freshmen to transfer students was 1:3 and now it is about 1:1, whereas the same ratio in the College is 10:3 and the University is 3:1 essentially now reversing the trend of having more transfer students than freshmen. The current ratio is more in line with the trends of the College and the University. In BTA seven years ago the ratio of freshmen to transfer students was 2:3, but now it is 5:3 getting closer to the ratios of the College (10:3) and the University (3:1) again showing a healthier trend with more first time freshmen compared to transfer students. A possible reason for this change is better advertising of our programs as in the past most high school students and counselors were often unaware of our programs and students often transferred from other computing majors into our programs later when they found a better fit in our programs.

2.b.4 Curricula

Information about undergraduate programs can be found here. Graduate programs can be found here. Course descriptions can be found at the undergraduate catalog and graduate catalog. Links to each individual program webpage can be found in Section 2.a. An undergraduate committee and four graduate committees (IS on campus, HCC, IS online, and professional programs) oversee these programs. The curricula are kept current at both the course level and the program level. At the course level, individual faculty members often propose new courses or significant changes to existing courses and the overseeing committee will review and approve such changes. At the program level, the program director works with the overseeing committee to periodically update mapping of the curriculum to learning objectives and suggest changes to courses or the program. Figure A.13 shows the number of course sections by level. Figures A.14 shows the class sizes.

Undergraduate curricula

We see an increase in terms of course enrollment almost at every course level except for the 100 level courses, mainly because we discontinued IS 101, which is an introductory course to computing concepts and has been replaced with a college wide COMP 101 course. IS 125, required for the BTA program, and IS 147, required for the IS program, are offered every semester. At the 200-level, IS 247, required for the IS program, and IS 202, IS 295, and MGMT 210, required for both IS and BTA majors, are offered every semester. IS 246, one of the optional additional required programming courses, was last offered in Fall 2018. IS 296, "Foundation of data science" was first offered in Spring 2021 and has been offered every semester ever since, as it has become a GED course.

At the 300-level, seven IS courses that are required across the IS and BTA programs (IS300/303/304/320/325/350) are offered every semester. Additionally, three 300-level MGMT courses are also offered every semester. Only one is required for the BTA program. At the 400-level, the two BTA required courses (IS438/440) and the six IS required courses (IS410/420/425/436/450/451) are offered every semester. We offer at least six upper level electives every semester (IS304/317/361/369/448/479) and additional electives are offered in Fall (IS403/428) and Spring (IS427) only. Additional electives, such as independent study (IS400) is offered every semester.

In the lower level courses, the BS IS gateway course, IS 147, and one of the BTA required courses, MGMT 210, have the highest number of sections across both Fall and Spring semesters. In IS 147, the number of sections has increased from three in Fall 2018 to eight in Spring 2024 while the number of students in each section has decreased since Fall 2020 with a pre-Fall 2020 average of 41 students per section, decreasing to an average of 29 students per section after Fall 2020. IS 147 is an introductory programming class and reducing its class size helps improve student learning outcome, as indicated by the improved DFW rate (fraction of students receiving D, F, or withdraw) as described in Section 2.b.5. In MGMT 210, the number of sections remained consistent at six sections from Spring 2018 through Fall 2022. While the number of sections increased to seven in Spring 2023 and to eight in Spring 2024, partially due to the introduction of the MGMT minor, the average number of students per section has remained consistent throughout the self-study period at 43.

Similarly, the upper level gateway courses in the BS IS program, IS 300 and IS 310, have consistently had the highest number of sections across all upper-level courses. The number of sections of IS 300 in Fall semesters has increased from five to seven sections while there have been seven sections of IS 300 every Spring semester, however, the number of students per section was similar: 40 in Fall semesters and 37 in Spring semesters. The post-gateway required courses, IS410/450/451/436, and the programming course, IS 448, have consistently had three to four sections each.

Graduate curricula

Again, we see a significant increase in the student enrollment at all levels of graduate courses. The increase is most significant at 700 level, which includes most graduate level electives. This reflects the increase in our graduate enrollment. Our faculty has also created more graduate electives to reflect the recent technology developments.

IS: All of the core courses (IS601/603/620/636) and two of the fundamental courses (IS610/650) are offered every semester with the number of sections ranging from one to three, except for IS610 which jumped from two to four sections in Fall 2022 and Fall 2023. IS600, a fundamental course in the IS program and a required course in the HCC program for students who entered without having taken a university-level programming course, is offered in Fall semesters only.

HCC: Two of the core courses, HCC629 and HCC636 are offered every semester. The remaining three core courses are offered in either Fall semesters (HCC710) or Spring semesters (HCC613/729). The HCC program offers several electives that are offered either every Fall or Spring semester (HCC706) or every other year (HCC746).

We offer several special topics courses (IS698/800) each semester to students in both programs. The number varies each semester with usually three or four IS698s and two or three IS800s offered, however, no special topics courses were offered in Fall 2019. Recent special topics courses include *Ethical & Responsible AI, Social Media Analytics, Digital Health Equity,* and *Temporal Data Mining & Apps*.

At the Ph.D. level of both programs (IS and HCC), we offer three methodology courses each year: IS804, IS809 in Fall semesters, IS805 in Spring semesters.

HIT: All core and elective courses are offered every semester with at least one section per course per semester up to Fall 2022 or Spring 2023 when additional sections of the courses were added. The following core courses saw the largest increases in number of sections: HIT 658 increased to five sections in Fall 2022; HIT663/664 increased to four sections in Spring 2023, and HIT 750 increased to three sections in AY2023 and AY2024. The elective course HIT674 had the largest increase in number of sections to four in Fall 2022. The capstone course, HIT 760 is also offered every semester.

SENG: The three 600-level core courses (SENG601/636/645) are offered every semester. Both SENG601 and SENG636 increased to two sections in AY2023 and maintained two sections in AY2024. Additional core courses have been offered every semester once they were added in Fall 2022 (SENG740) and Fall 2023 (SENG701). Two electives are also offered every semester: SENG638 and SENG645. SENG691 is designated for special topics courses and at least two have been offered every semester since Fall 2023. Recent topics include: *Data Intensive Applications, Reading to Write Code,* and *Time Series Databases.*

2.b.5 Student progression

Figure A.15 shows top 20 courses by DFW rates (fraction of students receiving D, F, or withdrawing from a class) in Fall 2018. IS 147 (Introduction to Computer Programming) and IS 247 (Computer Programming II) stand out as the two courses with highest DFW rates. As they are the first and second programming courses students in the undergraduate IS courses need to take, they have impeded student progression. The department has tried several approaches to resolve this issue, including: 1) reduced class sizes from up to sixty students per section to around 30 students per section; 2) using undergraduate teaching fellows to lead discussion sections or to grade; 3) involved the university Computing Success Center to provide tutoring services to a number of IS courses including IS 147 and IS 247.

Figure A.16 shows top 20 courses by DFW rates in Spring 2024. It can be seen that both IS 147 and 247's DFW rates are much lower now. The rate for IS 147 has been reduced from over 40% to around 15%. IS 247 no longer made the top 20 list and its DFW rate was below 5% in Spring 2024.
At this point in time, the courses with DFW rates around 20% or higher are IS 607 (Introduction to Information Systems), IS 202 (System Analysis Methods), IS 471 (Data Analytics for Cybersecurity), and IS 295 (Intermediate Business Applications). IS 607 is the prerequisite to a number of courses in the IS online MS program. It covers databases and Java programming and typically students without any computing background will take this course. IS 471 is an elective. IS 202 and IS 295 are both required courses for the undergraduate BTA program. So IS 607, IS 202, and IS 295 may have impeded student progression.

The department will work with the instructors of these courses to lower these DFW rates using the following approaches: 1) work with Faculty Development Center to collect student feedback and identify areas that need improvement (e.g., using their midterm CATALyst program which will have students working in small groups to answer questions about what is working well in the class and what suggestions they have and analyze the results); 2) provide undergraduate teaching fellows to help run discussions and grade; 3) work with the Computing Success Center to provide tutoring services.

Another factor that may impede student progression is course utilization. Many of our low level courses often reach capacity. Figure A.17 and Figure A.18 show two such courses: IS 147 and MGMT 210. Both courses often reach capacity and have a long wait list. IS 147 is the first programming course for IS majors and MGMT 210 is the prerequisite for many BTA courses. Currently the department relies on hiring part-time instructors to fill the gap. The department needs to hire more full-time teaching faculty to address this problem.

2.b.6 Time to degree

Undergraduate Programs: Figure A.19 shows the time to degree for new freshmen in undergraduate programs and Figure A.20 shows the time to degree for new transfer students. On an average, new freshmen students take on average 4.54 years to complete the BTA and on average 4.42 years to complete the BS program. Students entering as transfer students take a year or so less than new freshmen with BTA majors completing the degree on average in 3.26 years and BS IS majors finishing their degree in 3.15 years. For IS majors, the time to degree decreases slightly for freshmen and is unchanged for transfer students. For BTA majors, the time to degree increases slightly for both freshmen and transfer students, possibly due to the impact of Covid.

Figure A.21 shows the time to degree for the Master's students in our various programs. In the on-campus Master's programs, on average, students complete their degree in 1.5 to 2.5 years (average numbers for MS HCC: 2.57, MS IS: 2.04, MS HIT: 1.52). The IS MS online program students take on average 3.33 years to complete their degree, which is understandable, since students in this program are professionals who are pursuing the degree online and work at the same time. In the PhD programs (Figure A.22), students take on average 6.82 years to complete the IS Ph.D. degree and take on average 6.24 years to complete the HCC Ph.D. degree. The time to degree for MS programs has decreased for the HIT and HCC programs in the past seven years, most likely because more students are full-time and they finish in a shorter time than part-time students. The time to degree for other MS programs did not change much over the same period.

The time to degree for PhD students fluctuates due to the relatively small sample sizes. There is a small increase in recent years, possibly due to the impact of Covid. We also notice a large variation in terms of graduation time for PhD students as some part-time students may significantly skew the average time to degree. Another possible cause of the increase is a few PhD students have changed their mentors because their previous mentors have left UMBC. This often slows down their progression as they need to work with a new mentor. The department has implemented new funding mechanisms to encourage students to finish proposal defense early. For example, PhD students will receive up to three years of TA funding if they can finish proposal defense by the end of the third year. The department also provides additional support to PhD students who have exhausted their three year TA funding through the gap funding mechanism. The department will also adopt a new annual meeting form between faculty and PhD students which is better at keeping track of progress of students and encourages discussion about progression between mentor and students.

2.b.7 Faculty profile

Figure A.23 in Appendix A shows the number of faculty by rank since the last evaluation. The total number of full time faculty has increased from 29 to 42. The number of full professors has increased from two to ten due to promotion of associate professors already in the department. In the last APR the very low number of senior faculty was pointed out as a weakness. During this evaluation period, the department has provided better support to associate professors including mentoring efforts such as workshops between full professors and associate professors to discuss the promotion process, grader support and course releases for faculty taking on administrative positions such as Graduate Program Directors or Undergraduate Program Directors, who are often associate professors. The college also provided a larger salary increase after promotion as an incentive. The Chair and the Dean also worked

out retention packages for several highly productive associate professors who were about to be promoted.

The number of associate and assistant professors remains flat as we have hired more assistant professors and associate professors during the period, but some of them have got promoted to the next rank and some have left UMBC. The number of lecturers and Professor of Practice (PoP) has increased substantially from six to eleven. This increase is a response to the increase of enrollment over the period and allows the department to reduce the teaching load of tenured and tenure track faculty as the research activities of such faculty increases.

Figure A.24 in Appendix A shows the demographics of full time faculty. The department has over 40% of female faculty, which is about at the same level as the last APR. The department now has two Black and two Hispanic faculty members, which is an increase compared to the last APR when the department had no faculty from underrepresented minority groups. The department has stepped up efforts in recruitment of faculty from underrepresented minority groups (URM) in this evaluation period, including advertising at specific groups or conferences that attract URM faculty members and using faculty members' professional connections to encourage such candidates to apply. The search committee also paid close attention to the diversity of application pools at every stage of the recruitment process.

2.b.8 Faculty-student ratio

Although we have aggressively hired full time faculty in the last seven years, IS still has a higher student-to-teacher ratio than both the COEIT average and UMBC average due to increased enrollments in the department (see Figure A.25, Figure A.26, and Figure A.27 in Appendix A). The FTE (full time equivalent) student to full time faculty ratio in IS was 27.7 in fall 2023 vs. 26.3 in COEIT and 20.7 in UMBC. The unduplicated headcount of students to full time faculty ratio in IS was 58.3 compared with 53.2 in COEIT and 24.4 in UMBC. There was a slight drop around Fall 2021 due to both Covid-19 (fewer enrollments) and hiring of seven new faculty that year, but this gain has largely disappeared more recently due to high enrollments.

The department has tried not to increase class sizes and hired a significant number (over 30 per semester) of part-time instructors. As a result, the FTE to all instructional faculty (including both full-time and part-time) ratio was lower than COEIT average but still higher than UMBC average (IS 15.2, COEIT 17.0, UMBC 12.5). Although many of our part-time faculty were excellent teachers, some of them need to improve their teaching effectiveness. The department has started annual evaluations of adjunct faculty since Fall 2023 and each adjunct faculty submits a dossier including CV, syllabus, student course evaluations, and a self assessment. A committee of full-time faculty reviews each adjunct faculty and provides constructive feedback. The department also encourages adjunct faculty to attend professional development workshops organized by the Faculty Development Center at UMBC and provides incentives.

2.b.9 Faculty productivity

The Department of Information Systems (IS) aims to expand our role as global leaders at the intersection of information, technology, and people, by promoting inclusive student-centered teaching, reimagining life-long learning, advancing innovative interdisciplinary research, and championing civic engagement. The IS department offers two undergraduate, three MS, two MPS, and two Ph.D. degree programs. IS research is focused in AI and machine learning, data science, health informatics, human-computer interaction, software engineering, cybersecurity, STEM learning, and other areas such as cyber security, climate science, quantum computing. Our faculty are extremely productive in terms of research, teaching, service and outreach activities as evidenced by their CVs.

Research: The department has seen a rapid increase of research funding in this evaluation period, due to both efforts by all faculty. The total award amount increased from $3.3 million in 2018 to $11.5

million in 2023 (see Figure A.28). The total number of awards where IS faculty as PIs increased from 51 in 2018 to 77 in 2023, with 18 IS faculty as PIs. In addition, there were 98 awards in 2023 where IS faculty served as co-PIs (see Figure A.29). The department's research expenditure has also grown substantially in the evaluation period (see Figure A.30). IS faculty has increasing successes with large interdisciplinary awards such as the $20.5 million award from Army Research Laboratory, led by Dr. Aryya Gangopadhyay and Dr. Nirmalya Roy, and the $13 million award from NSF for creating the NSF HDR institute for Harnessing Data and Model Revolution in the Polar Regions, led by Dr. Vandana Janeja. IS faculty also received five prestigious NSF career awards during this period.

In terms of peer-reviewed publications, IS faculty on average publish around 60 to 99 papers per year since 2018 (see Figure A.31). The faculty also supervised a total of 68 Ph.D. dissertations and 23 Master's theses (please see Appendix O and Appendix M).

IS faculty have also received many awards in their professional community. For example, Dr. Reynolds (in 2024) and Dr. Mentis (in 2021) received the best paper award in CHI, which is a flagship conference in the field of human computer interaction. Dr. Roy received the best paper award from SmartComp in 2022 and 2023, and the Top Cited Article, WIREs DMKD in 2020. Dr. Song was named IEEE fellow and was named Highly Cited Researcher in the field of Computer Science, Clarivate™. Dr. Joshi was named IEEE Technical Committee on Services Computing (TCSVC) Rising Star Award in 2019. Dr. Wang was nominated for PECASE Award by NSF. Three IS faculty members (Dr. Mentis, Dr. Casas, Dr. Pan) have received Fulbright Scholar awards to engage in research with international institutions. IS faculty has also received many notable awards. Below are some examples:

- Dr. Janeja received the Board of Regents Award in Scholarship or Research in 2024.
- NSF career awards: Dr. Nirmalya Roy, Dr. Jianwu Wang, Dr. James Foulds, Dr. Sanjay Purushotham, and Dr. Karen (Lujie) Chen.
- Dr. Hamidi, Dr. Kleinsmith, Dr. Wang: COEIT Early Career Faculty Excellence Award
- Dr. Joshi, Dr. Mentis, Dr. Roy, Dr. Seaman, Dr. Koru, Dr. Zhiyuan Chen: COEIT Mid Career Faculty Excellence Award
- Dr. Van Dyke: COEIT Excellence in Teaching in 2024
- Aamir Nooruddin, Paul Coakley: COEIT Adjunct Faculty Excellence in 2024

One major change during the evaluation period is the creation of research centers. The IS faculty has led the following research centers:

- CARDS Center for Real-time Distributed Sensing and Autonomy (University level)
- iHARP Institute for Harnessing Data and Model Revolution in the Polar Regions (University level)
- CARTA Center for Advanced Real Time Analytics (University level)
- CYPRESS Center for Research in Use-Inspired Cyber-Physical Systems (College level)
- ScaleS Center for Scalable Data and Computational Science (College level)
- ISRC Interactive Systems Research Center (Department level)

Details of the research centers can be found in Appendix K.

Education: The total credit hours taught by the department increased in the current evaluation period from 21,460 in 2018 to 24,142 in 2024, with a small decrease in 2022 due to Covid (see Figure A.32 and Figure A.33 in Appendix). The number of graduate credit hours increases substantially (from 4504 to 8275) due to the increase in graduate enrollment. The number of undergraduate credit hours had decreased during the Covid years (2022-2023) but it started to increase in 2024. We expect it will continue to increase as the undergraduate enrollment has been growing in recent years. The T/TT faculty teaching load was four courses per year before Fall 2024, while for lecturers, it is six with additional duties of advising around 150 undergraduate students. Starting Fall 2024, the standard teaching load for T/TT faculty is three courses per year to reflect the increase of research activities. Figure A.34 in Appendix A shows the average number of course units taught by each category of faculty. This number is relatively stable over the years. The average number of course units by T/TT

faculty is higher than the standard teaching load because they also teach research courses such as independent studies and thesis research.
During this review period, faculty developed and implemented a several new courses from lower undergraduate to graduate levels (IS 296, IS 496, IS 664, IS 668, IS 677, IS 757, IS 789, IS 790, HCC 746, and HCC 747 (currently under review by the Graduate School)). A new MPS program on software engineering has also been created during this evaluation period. The program has a healthy enrollment of around 60 students by 2024.

Service: A substantial part of the faculty service load consists of student advising and serving on departmental, college, and university committees. Lecturers on average advise about 150 undergraduate students. T/TT faculty advise on average 10-15 master's students. New faculty is exempt from departmental committees from the first year, and one departmental committee in Year 2 and Year 3. Other faculty members are assigned to two to three departmental committees. Please see Appendix G for assignment of departmental committees in the 2024-2025 academic year. There are also a number of administrative positions in the department, including associate chair for academic affairs, program directors for various academic programs, associate director for undergraduate programs, liaison for programmatic innovation, research innovations, and external partnerships. These positions with heavy service loads receive extra compensation and/or teaching releases. IS faculty also serve on numerous college and university level committees. Figure A.35 shows on average IS faculty serve on 40-60 UMBC committees in total.

IS faculty are also very active in professional services. Almost all T/TT faculty serve on conference committees, organizing workshops or conferences, and serve on proposal review panels. Several IS faculty also served on prominent leadership roles in their professional community. For example, Dr. Mentis served as executive president of ACM SIGCHI (Association for Computing Machinery Special Interest Group on Computer-Human Interaction) from 2018-2021. As shown in Figure A.35 in Appendix A, IS faculty also serve as editor of 5 to 11 journals per year from 2019 to 2022. CVs of full time faculty can be found in Appendix P.

2.b.10 Budget

Figure A.36 shows program expenditures of 2023 and Figure A.37 shows the FY 2025 budget. The department's budget can be divided into these sources: State (S), DRIF, Revolving Account, which is primarily funded by self support programs (the two MPS programs), a Startup account for new faculty startup, IS online MS program, and department foundation account.
The major line items under state account are salaries, fringe, and graduate student support, and two items called "contractual faculty" and "student payments." The "contractual faculty" line corresponds to all our expenditures on part-time faculty. The "student payments" line corresponds to graduate and undergraduate TAs and graders hired hourly, mostly from other departments. The department typically has a deficit in the contractual faculty line due to the large number of class sections covered by part-time faculty. The state account has been balanced during this evaluation period by savings in faculty salaries who have retired or left and savings of GA tuition because many senior PhD students after passing the comprehensive exam register mostly for dissertation credits.
The Health IT (HIT) and Software Engineering (SENG) MPS programs have brought in substantial revenue in recent years (around $500,000 from HIT and $100,000 from SENG). The online MS program had a close to zero balance during the pandemic years due to decrease in enrollment, but has become profitable since FY 2024 due to recovery of enrollment.
The revolving account is used for meeting the department's obligation for the newly hired startup packages, including teaching reduction, supplementing faculty and student travel, expenses for the departmental seminars and colloquia, additional support for graduate students (such as the five year guaranteed funding program and matching for students receiving GAANN fellowships), student travel, renovation of department labs, hall ways, and offices not covered by the university or college, departmental software and hardware, and other activities not funded by our state budget. We started the five year guaranteed funding

for new PhD students in 2023, where the department matches faculty's grant funding to support strong new PhD students with a five year guaranteed GA funding. The department started two more initiatives in 2024, one supporting students to attend professional development conferences or workshops, and the other providing support for undergraduate research.

Budget needs: the department needs more budget for TA or grader support as well as compensation for part-time instructors to address the growing enrollment. We hire more part-time instructors than other departments in the college (we hire 30+ part-time instructors per semester) but the IS department's compensation level for part-time instructors is the lowest in the college. We have started to address this issue since 2022 and the current pay for adjunct level one (the lowest rank of adjuncts) is almost 60% higher than the pay in 2022. But the current level is still lower than other departments in the college. The department's overall student enrollment also increases and the number of course sections offered has increased by almost 30%, creating more need for TAs or graders. In the meantime, the PhD enrollment has grown significantly in the evaluation period (from 77 in Fall 2018 to 105 in Fall 2024), increasing the demand for funding to support more PhD students. Given the limited budget for TAs, the department has tried to increase the number of TAs or graders by keeping the number of full time TA flat but increasing the number of part-time TAs and graders. However, the stipend for TA is significantly lower than many peer institutions (the current full time TA stipend is $26869). This creates challenges for attracting talented students to our program. Several other institutions offer admission with a five year support to PhD students making them the obvious choice for applicants. The GA stipend level was also one of the top concerns raised by graduate students in the annual university wide meet-and-confer process.

Although the two MPS programs provided additional funding to the department, the enrollment of both programs has been decreasing most recently due to decrease of international applications so we expect a lower financial contribution by these two programs in the near future. We have taken actions to stabilize the enrollment of these two programs, including adjusting the admission standard and stepping up recruitment efforts for domestic students.

2.c. Analysis of data provided by the program

2.c.1 Educational goals, learning outcomes, and program assessment plans

Our goal is to provide quality education and support activities to the students of the IS department in any program they attend towards a successful career. The overall plan for the educational goals, learning outcomes and assessment is depicted in the following two figures. Its purpose is to identify the student learning assessment activities that are followed in the IS department for each program the department offers.

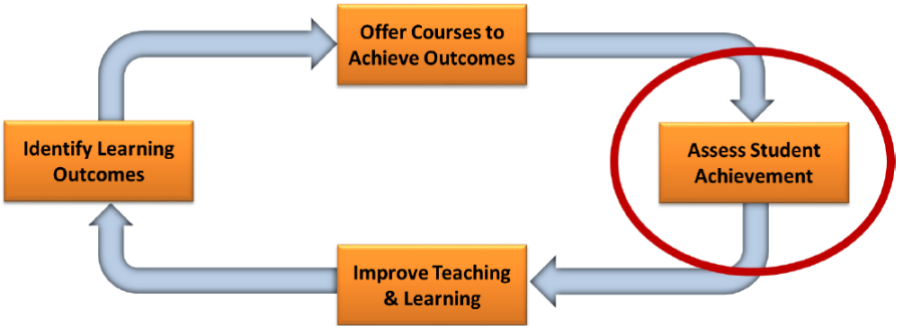


Figure 2. The cycle of student learning outcomes

The IS department considers the Assessment of Student Achievement (depicted within a red circle in Figure 2) as a crucial component in support of the UMBC's mission for the IS students. After receiving assistance from the UMBC Faculty Development Center (FDC) both in person, and in electronic means via the numerous resources that have been made available through the FDC, the IS department designed a process to assess student achievement (the circle in Figure 2).

If we are to expand that circle we can identify the assessment process that the IS department has planned to assess student learning in several courses for each program offered. Figure 3 illustrates this process for any course that has been selected for assessment.

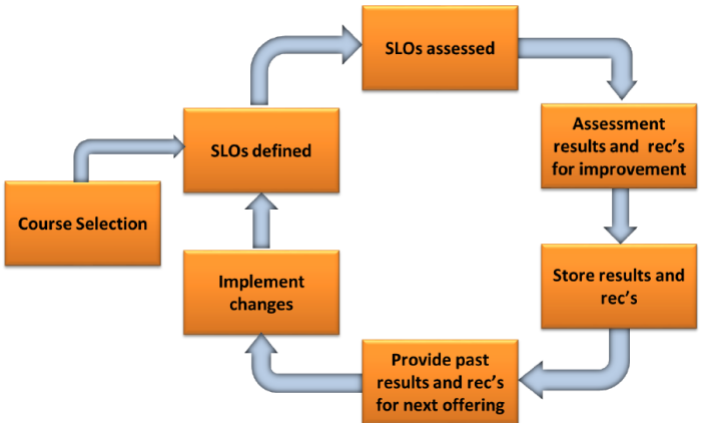


Figure 3. Process of course assessment in the IS department

This process is briefly explained below (start on the left part of Figure y and follow the arrows):

- A course is selected for assessment
- The course instructor identifies the student learning outcomes (SLO).
- The SLOs are assessed during and/or soon after the end of the semester
- The assessment results and recommendations for improvement are generated by the instructor and stored on Blackboard
- The next time the same course is offered, previous results and recommendations are provided to the course instructor
- The course instructor implements changes (if needed) and may update/edit the SLOs based on the past recommendations, thus closing the loop and getting ready for the new assessment cycle

The above process is repeated for representative courses that have been identified for student assessment in each program offered by the IS department. The progress is maintained at the IS department repositories. The SLOs may not necessarily change, however, the instructor is expected to implement the changes recommended during the last assessment of the course.

Curriculum mapping in undergraduate programs: We have developed a curriculum map for each one of our programs that map student learning outcomes from each course, to program level outcomes that are aligned with the UMBC functional competencies. Specifically, 1) Each course SLOs are articulated. 2) Course SLOs are mapped to program objectives. 3) Program level objectives are aligned with UMBC Functional Competencies.

Discussion on measuring outcomes and improving programs

Every program offered by the IS department undergoes an evaluation to determine possible improvements based on the constant changes in technology and job market, while at the same time maintaining the overall educational goals of the program and alignment with the UMBC Functional Competencies. Since we offer nine programs and some courses are common across programs, we analyze information at the course level to measure the learning achievement of the students and potentially implement interventions. We repeat the same process at the program level for potential updates to the program outcomes.

BS in Information Systems: The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-1). Every few years we assess the program effectiveness using data from IRADS related to courses (see Section 2b) and specific direct and indirect assessment of each course listed in each program. For the BS in IS we provide a discussion on the assessments, interventions and outcomes using two example courses: IS296 an elective and GEP course, and IS420, a required course. Detailed information on the assessment of these two courses can be found in Appendix D.

IS 296 "Foundations of Data Science": In 2020, IS296 was designed as an entry level data science course with minimum prerequisites (no programming experience is required and Algebra 1 for Math) that was introduced by Dr. Janeja, funded by NSF, in collaboration with the University of California, Berkeley (UCB). It aims to build students' competency in data programming and statistical inference. Dr. Karen Chen started to teach this course in Spring 2022. Since Fall 2023, it has been designated as a General Education Program (GEP) course with students from a variety of majors across the campus. IS 296 also satisfies the programming requirement for the BTA major and the new Business Analytics certificate.

Direct assessments help us gauge students' mastery of learning objectives. The labs are auto-graded so that students can improve with feedback given by the graders. Homework assignments and projects are graded according to rubrics. Instructors rely on a variety of in-class activities such as Poll Everywhere quizzes and group work (e.g. data exploration, storytelling) to identify weakness in understanding and dynamically adjust the teaching approach. Indirect/qualitative assessment from class observations and teaching fellow's feedback as well as data from students' written reflections are leveraged along with student interviews and focus group discussions, with support from the IUSE research team, under joint IRB between UCB and UMBC.

Assessment, interventions, and outcomes**:** A pre-course survey gathers information on students' prior programming experience to tailor the teaching approach and meet diverse needs. Teaching Fellows provide near-peer support in a buddy system, ensuring pairing students with weaker programming backgrounds with those more experienced. Informal conversations were particularly revealing for students with weaker programming backgrounds. For instance, a student expressed concerns about their limited programming experience and the instructor encouraged them to showcase their skills through data art, producing creative and innovative data visualizations. Another student who struggled with programming and data analysis was guided to analyze soccer data, drawing on his years of experience as a soccer player.
For advanced learners, the course offers open-ended project assignments and encourages participation in research opportunities through the Data Science Scholars Program (https://datasciencescholars.umbc.edu/). Assignments have been redesigned with optional bonus tasks, which provides additional opportunity for students seeking deeper exploration.

Feedback from the focus group (see Janeja 2024) and survey analysis (Bhalli 2024, Wang 2023) highlights the effectiveness of our strategies. Students valued the peer support provided by teaching fellows, the opportunity to collaborate with peers from diverse backgrounds, the adaptability of open-ended project assignments, and the instructors' efforts to present well-structured, beginner-friendly materials. With the course now offered as a General Education Program (GEP) course, the instructional team continues to explore ways to make it more accessible. We have introduced user-friendly cheat sheets with code examples and use-cases and offered additional practice sessions outside class. Additionally, we are considering a short introductory programming course to serve as a bridge to IS 296, ensuring all students are well-prepared.

Communication skills, a key functional competency in the GEP requirements, are also assessed. Through various interventions, students develop and refine their data-driven communication (or data storytelling) skills. They produce communication products in diverse formats, such as slideshows, videos, data art, or social media posts. During the initial four semesters of IS296, we collaborated with digital storytelling (DST) interns from Montgomery College, a local community college. While these interns typically lacked data science backgrounds, they were well-trained in communication. In semesters without DST interns (Spring 2024 and Fall 2024) we continued data storytelling with alternative activities such as crafting data

stories from insights presented as visualizations and tables. Currently, we are developing an AI-supported tool (developed as part of the NSF Cyberlearning project) to provide students with direct feedback on the depth and accuracy of their narratives.

Results: Toward the end of the course, students were asked to reflect on takeaways from the courses. Among the 18 submitted reflections, 14 (78%) explicitly mentioned the data storytelling project. Five students believed those skills learned through the projects could be readily applied to support. Four students saw the immediate value of those skills to their future job. One of the students gave a vivid example of how he could use data storytelling skills to communicate effectively with his co-workers to help to improve their performance. Six students expressed positive sentiment toward the project experience. It is worth mentioning that two of the students explicitly mentioned the value of this project in raising awareness of societal issues such as climate change and human well-being.

The course also builds statistical reasoning skills using modern methods such as simulation, bootstrapping, and randomization. In earlier versions of the course, students struggled with these abstract concepts. Intervention: in Spring 2023, we piloted a personal informatics assignment, initially as an optional extra-credit activity, where students analyzed their data, or, with permission, data from classmates, to practice statistical reasoning.
Outcome: Qualitative analysis of student surveys reveals growth of data science and statistical knowledge and the emerging ideas of self-awareness and self-regulation as the result of analyzing their own data. Dr. Chen's NSF CAREER Award was inspired by work related to educational approaches applied in this course.

IS 420 "Database Application Projects:" IS 420 is a required course for the BS program and the following observations were made in assessing the learning outcomes of this course over a period of two years. Course homework assignments, exams, and a group project are used to assess the learning outcomes. The entire detailed assessment report of IS420 is included in Appendix D.

For direct and indirect assessment a number of questions from assignments and exams were selected and grouped according to their learning objectives. For example, the last group project deliverable directly corresponds to learning outcome C4 (group formation, entrepreneurship, and team dynamics). It is a demonstration of the whole project, which requires students to work in groups to create a database application, test and debug their code, and run the demo. It evaluates multiple learning outcomes.

In Spring 2022 we observed that 90.9% of students successfully completed the project deliverable. In addition, while assessing the midterm and two quizzes that measure the design and development of realistic database applications in the PL/SQL language (a major learning outcome), we noticed that only 82.5% of the students could successfully complete it. Regarding indirect assessment the average overall grade for this class was 87.8 with 90.9% students passing this class (with a grade C or better).
Intervention: The instructor increased the number of lectures and discussion sections dedicated to covering PL/SQL language and provided more exercises for students to practice their PL/SQL skills.
Two years later, in Spring 2024, the assessment of the same course revealed an improvement of learning outcomes by the students due to this intervention. The group project deliverable percentage increased from 90.9% to 96.6% and the programming language percentage increased from 82.5% to 87.1%. In terms of indirect assessment, the average overall grade for this class was 88.1 with 96.4% students passing this class (with a grade C or better).

We conduct similar assessments in other courses for this program including DWF grades of courses, market trends, and changes in the IT field and make interventions accordingly at the program level.

BA in Business Technology Administration: The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-2). For the BA in Business Technology Administration we followed a similar approach to the BS in IS. However, when we looked at the exit surveys that were completed by the graduates of this program and the feedback we received from them about three to five years ago, we noticed that they were having difficulty getting a job after graduation. Since this was not a single occurrence but several students had similar experiences over the years, we decided to take action and intervene. We started making changes to the BA program in 2019 such as removing IS101, making IS/MGMT438 a required course, etc. In addition, a couple of years later we decided to examine the entire BA program. We contacted Jennifer Harrison from the Faculty Development Center and in 2023 she held a workshop to look at the program objectives and the course outcomes. In essence we created from scratch a new curriculum map for the BA program, and we emphasized the business and managerial aspects of this program. As a result we modified the program outcomes to align with the market needs and trends towards effective use of IT applications in support of better decision making in organizations, enhance student skills in business and operations management, and also delve into leadership skills for their professional career. We also updated the content of relevant and required courses such as IS300 and MGMT210 to align with these goals and also made IS296 an elective available to students in this program (also a GEP course).
The results were quite impressive: While in 2017, 2018, and 2019 the exit surveys of BA students showed job placement in the upper 80%, after implementing the above interventions and from 2021 we notice a jump in placement numbers to the mid and upper 90%.

In addition, since graduates of this program can easily find a job within 6 months of graduation, we decided to expand our program offerings and create a new Minor in Management with courses that are offered in the BA program. Although it is about one year old, looking at enrollment numbers, the Minor in Management seems to be quite a popular Minor with about 60 students enrolled in Fall 2024. At this point we need to clarify that UMBC cannot have a Business School and the only undergraduate program that leads to a degree is the BA in Business Technology Administration. There are also two Minors, one in Management (offered by the IS department) and another one in Entrepreneurship and Innovation (offered by the Alex. Brown Center for Entrepreneurship).

We use direct and indirect measures to assess the BA program. In terms of indirect measures (c.3), two focus groups have been conducted with current students and alumni to discuss the program and overall learning experience. We also wanted to determine whether the courses offered have provided the skills needed for a career in related areas. Findings were largely positive regarding the learning experience. However, participants suggested updating some of the tools and technologies used within courses to those that would be more useful in the workplace, as mentioned earlier, which we actually did.
A competitor analysis has also been conducted with similar programs at public universities around the US. The aim was to identify whether courses offered through our program differed widely from other offerings. Findings highlighted that the BA program is fairly unique within Maryland, as it offers an opportunity to learn about technologies to support business processes. Other programs offered tended to place an emphasis on either business or technology.

MS in Information Systems: The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-3). The MS in IS has been quite a popular program in our department for several years. We have been observing the course outcomes via direct and indirect assessments as they support the program outcomes in alignment with the UMBC functional competencies. Since the overwhelming majority of students in this program are international, we noticed a drop in enrollments during the pandemic as students could not secure visas to travel to the US. However, when the pandemic started easing out around we observed a big increase in both enrollments as students who had deferred their admission due to visa problems were now allowed to enter the US, and admission applications. Looking at enrollment data from IRADS that confirmed this fluctuation, we addressed this situation by offering more and larger sections of core courses. In addition, while observing the market trends we decided to offer specializations to students by creating and allowing them to select tracks (AI, HCC, Data Science) of tech areas. These

tracks are proven valuable in their job search as they could showcase their expertise in their transcript and resume.
Using student surveys about the program and aligning them with strategic decisions about research areas in the department, we decided to change the designation of IS651, a networking and distributed systems course, from core course to an elective. Another supporting reason for this change is that networking is not a research area of any current faculty in our department, and we noticed that the entire tech world is moving towards AI and data analytics. Intervention: We decided to introduce new courses that would open up more opportunities to the graduates of this program. Therefore, we created a Causal AI course (IS790), a Deep Learning course (IS757) and a Big Data course (IS789). The result was a better alignment of this program to the modern marketplace.

MS in HCC: The curriculum map of this program is found in Appendix C (Figure C-4). We use direct and indirect measures to assess this program and we provide interventions to improve it.
Direct assessment: HCC 629 is the introductory required course for the program. Each lecture has several learning outcomes which are aligned with the course learning outcomes. Each user interface redesign assignment is graded using a rubric and assesses one or more of the lecture-level learning outcomes.

Indirect assessment: Exam wrappers and students' reflections on their learning and understanding of course concepts. Additionally, to indirectly assess the entire HCC MS program, in Fall 2023, we distributed an anonymous survey to gauge HCC MS students' overall experience in the program, why they chose UMBC over competitors, and their perception of the program's strengths and areas for improvement. We also inquired about the program name - Human-Centered Computing - to assess whether students feel it accurately reflects what companies are looking for. We had a 52% response rate and findings were largely positive, identifying topic breadth/course variety, research opportunities, and faculty as primary strengths. Contradictorily, students felt that there is a lack of sufficient course offerings, identified as a weakness, along with a desire for more content related to emerging UX/UI software/hardware tools and technologies. Regarding the program name, the majority of respondents felt that "Human-Computer Interaction" is more common.

Online MS in Information Systems

The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-5).
The courses that assess this program are: **IS 698**
As one of the example courses that assesses the Online MS in IS. It has the following SLOs:

C1. Discuss the history of AI, the current trends and the impact of AI.

C2. Explain the most important AI concepts.

C3. Implement several basic AI algorithms including search and constraint satisfaction.

C4. Discuss ethical issues regarding AI.

C5. Use Bayesian networks as a modeling tool.

C6. Use AI methods to solve real problems.

The program-level SLOs (PSLOs) for the Online MS in IS are:

1) Develop, maintain, manage, and apply information technology systems.
2) Develop data science and artificial intelligence solutions for effective decision making.
3) Develop secure information technology systems with rigorous cybersecurity protections.
4) Develop user interfaces with high levels of user experience.
5) Demonstrate problem-solving skills.
6) Communicate effectively.

The course SLOs each support PSLO 2). Course SLO C6 is additionally aligned with PSLO 5). The learning outcomes for this course are assessed via a final exam, homework assignments, individual coding projects, quizzes, and discussions. Some course assessments measure PSLO 6) directly.
Direct assessment: Each lesson has several learning outcomes which are made known to the students, and which are aligned with the course learning outcomes. Each question in the assessments tests one or more of the lesson-level learning outcomes. Assessment of an online MS course (IS 698) can be found in Appendix D.
Indirect assessment: The average grade for the course was 95.0%, with 100% of the students passing the class.

Improvement based on the assessment: We plan to increase coverage of C1 in more assessment modalities, especially the homeworks and final exam. The individual coding project 2 was too difficult, with the lowest average grade by a significant margin. We will revise, remove, or replace this assignment.

MPS in Health IT

The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-6).

HIT 759 is a core course in the Health IT MPS program. It is the second class in a two-part series (with HIT 658), and is a required course for HIT students. The course SLOs for HIT 759 are:

C1. Develop a knowledge base of Health IT and its multidisciplinary skill set that lead to challenges, innovation and opportunities in today's healthcare environment.
C2. Develop critical thinking skills, presentation skills and a deeper understanding of a team created Health IT topic from the semester project.
C3. Develop familiarity with some of the Health IT literature, its terminology that will hopefully feed into lively class discussion and presentations.
Learning outcomes in this course are assessed through various activities, including weekly knowledge checks, regular in-class exercises, a semester-long group course project, midterm exam, a final presentation, and a Grand Rounds presentation on a current Health IT topic of their choice.
Direct assessment: Class exercises provide real-time feedback on student understanding and allow for immediate clarification. Peer review is utilized during the course project and Grand Round presentations to engage students in evaluating each other's work, providing valuable feedback, and reinforcing learning. Key deliverables with rubrics, especially during the semester-long course project, offer tangible evidence of student learning and skill development. As HIT 759 is a hybrid course,"flipped classroom" activities were implemented in Spring 2024 to prioritize skills application during in-person sessions, allowing for direct observation of student abilities and targeted guidance. Weekly knowledge checks were also introduced in 2024, to gauge understanding throughout the course.
Indirect assessment: Student reflections were implemented in Spring 2024 to provide insights into student learning experiences, challenges, and areas for improvement. A midterm CATALyst was deployed in 2023, with observation from an FDC consultant. Feedback was used to inform activity adjustments to support student engagement and learning. The course continues to deploy a midterm CATALyst each term.
Improvement based on the assessment: Findings from Fall 2024 indicate improvement in course SLOs, especially C2. We plan to further assess C3 and explore additional interventions to support students in their familiarity with Health IT literature.

MPS in Software Engineering: The curriculum map and the programs SLOs are found in Appendix C (Figure C-7). SENG 701 is a Capstone Course in Software Engineering that we use to assess the overall program. We use a project with multiple checkpoints and a final reflection to assess these learning outcomes directly and indirectly. A detailed assessment of SENG 701 can be found in Appendix D.
Direct Assessment: Grades from each checkpoint as well as the final project delivered in the course are used to evaluate the achievement of the course objectives. As each objective is not individually evaluated due to the project being a holistic endeavor, the overall trajectory and final grade reflects the direct achievement of the course outcomes. The table below shows the data from Fall 2023 and is based upon six students.

Indirect Assessment: Students were given a reflective assignment on lessons learned to evaluate their perceptions of the course. Data was aggregated in Spring 2024 and discussed in the next section due to the small sample size.
Intervention: There were not many students in this first cohort. No change was made based on the data as five out of six students did very well and all students met a passing grade (70%) for the final.

Ph.D. in Information Systems: The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-8). This program is being assessed via courses, surveys, and progression milestones (such as comprehensive exam, proposal defense, and dissertation defense) as well as via exit surveys, job placement data of graduate students, research publications, etc.
The methodology courses are crucial for this program as they introduce research methods to doctoral students. Since we offer several areas of research with diverse research methods, we constantly evaluate their effectiveness as newly hired faculty with different research areas may need different types of preparation for their students. The major student learning outcome is the dissertation and as proof of its quality is the placement after graduation. Please refer to Appendix for details.

PhD in Human-Centered Computing: The curriculum map of this program along with its SLOs are found in Appendix C (Figure C-9). HCC 760 is a required course for all HCC PhD students and an elective for MS students and has the following SLOs:
C1. Understand the key research, publications, and people that have shaped and influenced the field of HCI.
C2. Map the various conferences and journals that serve as key scholarly resources within the HCI community.
C3. Identify articles on a specific topic within HCI and carefully read these articles to identify key results (practical and theoretical), limitations (stated and unstated), and future research directions (stated and unstated).
C4. Identify and critique theories and assumptions that serve as the foundation for HCI research and relate these to the design of interactions between people and technology.
C5. Formulate a personal perspective on 'what is HCI'.
C6. Reflect on their own place within the field of HCI, both in terms of historical roots and future trajectories.

A synthetic literature review on an HCI-identified topic is the summative project in the course. The project is broken down into several formative steps and deliverables to assess students' learning in the course both directly and indirectly.
Direct assessment: Grades from the project deliverables are used to evaluate students' achievement of the course learning objectives. Each report deliverable is graded by the course instructor using a rubric and ample individual written feedback is also provided to support students' continuous improvement.
Indirect assessment: Students' evaluations of their peers' presentation performance and students' written reflections on the required research articles are leveraged. Additionally, after completing the course, several students have had their synthetic literature reviews accepted for conference publication.

2.c.2 Student advising
Undergraduate advising: Part of the duties of the IS department full-time teaching faculty is academic advising. All declared undergraduate majors (IS and BTA) are assigned to a faculty advisor who works each semester helping the student to plan the most appropriate schedule. The advisors are available year-round to help the students with any issues they may have. To coordinate the advising function the department has created the position of Associate Undergraduate Program Director, advising. The AUPD oversees all aspects of the department's advising and makes sure all students are assigned to an advisor.
It has been noted on previous APRs that the advising load on our teaching faculty is unusually large (approximately 170 per advisor currently). To address this issue the department has increased the number of teaching faculty lines in recent years. However, the advisee to advisor ratio remains high in the department. We continue to address this and will be hiring two new faculty advisors this coming year.

To determine the effectiveness of the model we use, a survey of our students was conducted shortly after the last APR. The goal of the survey was simply to find out how our undergraduates felt about advising in the department. Analysis of responses yielded the following major findings:

- Over 90% of the respondents rated the department's advising as "Excellent" or "Good."
- Students reported discussing a wide variety of topics with their advisors, from course selection to stress management.
- Students particularly value having 1-1 meetings with their advisors, and having advisors with knowledge of the IS discipline, courses, and graduation requirements.
- The most noted potential improvement to IS advising was increasing the availability of advisors.
- Two thirds of the respondents reacted unfavorably towards moving towards a professional advisor model.

To address the availability issue, in addition to more faculty we have improved the scheduling of appointments by going to online scheduling using the capabilities built into the Google calendar system. We also now use Webex to conduct most of our meetings, lessening the need for students to be in a particular place at a particular time to receive advising, while still offering in person on campus meetings for those who desire them. Adding online advising has greatly increased the efficiency of the process.

Graduate advising

MS Student Advising: All incoming MS students are assigned a faculty advisor who advises them for the duration of their degree. Each semester the student assesses their remaining degree requirements and selects courses applicable to their degree, typically a combination of required courses and electives. The student then emails their course selections to their academic advisor who reviews and approves their course selections. Approved course selections are sent to the Graduate Program Coordinator who then enters enrollment permissions into the system, allowing the student to register. If the advisee's course selections are not approved, the faculty communicates the reason to the student and provides an alternative course, if possible. All of our courses are specified as "permission required" to ensure students consult with and receive permission from their academic advisor.

PhD Student Advising: The majority of incoming PhD students have already identified a faculty advisor/mentor prior to joining the IS or HCC programs. Students who haven't identified a mentor upon the start of the program are advised by the GPD in their first year, and are required to find a mentor by the end of their first year. The Ph.D. mentor advises the students on course selection, and planning out their Ph.D. milestones, such as acquiring research methods, submitting and publishing papers, attempting the comprehensive exam, defending their proposal and finally defending their dissertation.

2.c.3 Student research

Undergraduate Research

The avenues in the department currently for undergraduate students to gain research experience is through NSF and ARL Research Experience for Undergraduate (REU), independent studies (IS 400) and senior projects (IS 469). The department currently has two active NSF REU Site programs and one summer undergraduate research program supported by the Army Research Lab (ARL): (i) NSF REU on Online Interdisciplinary Big Data Analytics in Science and Engineering (2021 - present), (ii) NSF REU on Smart Computing and Communications (2021 - present), and (iii) ARL REU on AI and Autonomy for Multi-Agent Systems (2021 - present). The Big Data REU (https://bigdatareu.umbc.edu) conducts an eight-week online program each summer for undergraduate students in computing and data science related majors. The program provides development of the national workforce in areas of critical need through (i) integrated intensive instruction in data science, big data and high-performance computing (HPC), (ii) research training in team-based interdisciplinary projects that address big data challenges in various science and engineering disciplines, and (iii) complementary professional development activities. Each summer, we train two teams of at least four students per team. Each student team is supported by a research mentor, at least one interdisciplinary collaborator, and a graduate assistant (GA). The REU Site produced 8 technical reports and 11 peer-reviewed papers. As of July 2024, 3 participants are in their PhD programs and 5 more participants are/were in their MS programs. In NSF Smart Computing and Communications REU, 34 undergraduate students worked in three interrelated thrust areas of smart computing and communications:

(i) security and privacy protection, (ii) novel applications, and (iii) sensing and adaptive networking. The students came from liberal arts colleges (Pomona College, California), community colleges, UMBC (transfer students), UMD, Duke, NJIT, UC Riverside, Texas A&M, Missouri University and other HBCU/MSI institutes. Faculty in the IS and CSEE department mentored the undergraduate students and met with them daily and weekly to discuss the research projects. The REU students also presented at Summer Undergraduate Research Fest (SURF) at UMBC, an event open to all the undergraduate students at the University. Some of the undergraduate students have presented at the Leadership Alliance conference, and many of them have submitted their work to peer-reviewed conferences and workshops. The students have also attended multiple professional development events with one or two scheduled on each week including invited talks from UMBC president, VPR, deans, chairs, and distinguished speakers from industry. In ARL REU, 12 undergraduate students participated in developing ground robots that are dropped to the ground by an aerial multicopter and subsequently moved towards a target autonomously. The innovations were in surviving the fall, getting activated on ground contact, and locating and navigating towards the goal. One of the undergraduate students developed and demonstrated gesture-based navigation of SPOT robots and presented a paper at the IROS 2024 conference. The ARL REU participants were undergraduate students from IS, ME, and CSEE departments in CoEIT.

In independent study and senior projects, students work individually with a faculty member on a project and topic of mutual interest. Many, but not all, independent studies and senior projects are research oriented. The activities associated with these classes include conducting a literature review in a particular area, assisting in the collection of data for a larger research project, analyzing data, and helping with experimental design and research planning. Some of these opportunities have led to published papers, with undergraduate students as co-authors. The list of graduate and undergraduate student research projects for the past three years is shown in Appendix L.

The department has also set aside funds to support undergraduate and Master-level research by providing funds for experimental materials, paying subjects, travel, and other research-related expenses. Some faculty also support undergraduate students through externally funded research projects such as National Science Foundation REU Supplement or internal funding such as Undergraduate Research Awards (URA) and start-up funds. Some of the undergraduates present their research at UMBC's Undergraduate Research and Creative Achievement Day.

Several undergraduate courses also teach research skills. Our two core systems analysis courses (IS 202 and 436) teach strategies for information gathering, an important activity in systems analysis. Data Science, data analytics and statistical analysis of data is included in IS 296. Techniques such as interviewing, surveying, and observation are taught and applied in the students' group projects. IS 403 also includes information-gathering skills, in addition to report writing and communication skills. At least one undergraduate course (IS 413) involves an in-depth review of selected academic and scholarly papers. Thus, all of our undergraduates are taught basic research skills as components of their core courses while more extensive exposure to research skills come through individual work with faculty members.

Graduate Theses and Dissertations

As a PhD granting department, we require doctoral students to complete a dissertation as part of fulfillment of their program requirements. There are **68** doctoral students who successfully completed their dissertation research in this evaluation period, which is a considerable increase from 46 which was the number at the time of the last APR in 2018. The topics of the dissertations cover all of the five research areas of the department. The list of doctoral students graduated in the past five years is shown in Appendix O. Since 2006, when a second PhD program, Human-Centered Computing, was introduced, the number of dissertations has increased. For the IS program our doctoral students' exposure to research begins quickly with all incoming doctoral students being required to attend 4 out of 5 open seminars hosted by the IS faculty groups (AI/ML, Data Science, HIT, Software Engineering and HCC), and take the core courses. In addition, all PhD students are encouraged to attend seminars by internal and external speakers, proposal and final dissertation defenses. While many of these assistantships involve teaching responsibilities, many

of the PhD students are funded by research grants of faculty members. Often, this results in immediate involvement with that faculty member's research activities. In addition to the introduction of faculty members' research, doctoral students are also required to work with a faculty member in the area of their interests as part of an independent study project. PhD students are also required to take a minimum of two out of three methodology courses, which range from field methods, computational methods, statistics to experimental design.
A doctoral student's exposure to research continues after their initial semesters. Often, this is accompanied by the student being hired as a research assistant by a faculty member becoming an integral part of a research project, including co-authoring publications. A number of our graduate-level courses, especially the Special Topics courses (IS 698/800), include a research component, ranging from review and study of the literature, to participation as a subject in an ongoing study, to experimental design and data analysis. Probably the most important preparation our doctoral students receive, prior to beginning their dissertation work, is through the two required semester-long independent studies they must complete with faculty members. These independent studies provide students with one-on-one opportunities to conduct significant research with a faculty member. Normally, several of these independent studies result in published papers, with the student as a co-author.

PhD students in the HCC program are required to take 9 credit hours of foundation courses, including a one-credit reading seminar required for three semesters which exposes students to research upon entering the program. Furthering their exposure to research, they are also required to take two methodology courses including IS 804 and IS 805 and any other course approved by the advisor. In addition, they have to take five required core courses and eight advanced required courses including one independent study and a minimum of 18 dissertation credits. Both doctoral programs (IS and HCC) incorporate research into the program long before the students are formally admitted into candidacy. PhD students in both programs are also encouraged to identify and start working with a faculty mentor within a year of their starting the program. Similarly both Ph.D. programs require submission of a dossier after the first year and regular annual reviews so as to ensure that students are on track with their programs.
In addition an increasing number of MS students have opted for the thesis option in the past few years. Therefore, our MS students also benefit from a significant exposure to research methods and issues. Most of the graduate level courses with research components (in particular IS 698) are also available to MS students. MS students also take independent studies and some of our MS students also have assistantships through which they assist faculty members with research. The list of MS thesis in the last 3 years can be found in Appendix M.

Student Publications and Professional Presentations
Given the opportunities the department has offered for students to work with faculty on research projects as well as receiving training on research methodology, many students' work has led to publishable results. Students from all levels have been involved in research publications. In the past five years, our students have co-authored 44 journal articles, 145 conference papers, hundreds of invited talks and presentations. Details are provided in Appendix N. Some of the journals are of top quality in specific areas such as IEEE Transactions on Knowledge and Data Engineering, ACM Transactions on Computer Human Interaction, WIREs Data Mining and Knowledge Discovery, Elsevier's Smart Health and Pervasive and Mobile Computing (PMC) Journal. Some of the conference papers were selected as Best Student Awards or Best Paper Awards.

2.c.4 Financial support for graduate students
Graduate Assistantships come mostly in the form of Research Assistantships that are funded by faculty's external grants or startup fund, Teaching Assistantships, and grader assignments. UMBC classifies graders with a fixed stipend and a contract as GAs, while graders paid hourly are classified as hourly students. One benefit of offering graders a contract is that they can pay in-state tuition. TA duties mainly consist of leading discussion sessions in lower-level courses or grading duties in upper-level courses. Occasionally, we let our TAs teach relatively small sections of lower level courses. This provides valuable teaching experience for those interested in pursuing an academic career. Teaching Assistantships are usually offered to PhD

students. Research Assistantships are offered to any graduate student depending on the faculty who provides the funding. Grader assignments are offered to both PhD students and Master's students and the IS department offers most graders with a contract. For PhD graders, the department also covers health insurance but no tuition.

In Appendix B, we summarize the number of graduate assistantships in the past two years and the current year and provide projections for the next three years. On average the department supported around 90 GAs in recent years, including around 50 research assistants, 27 teaching assistants, and 10+ graders. Some of these GAs are part-time.

During the evaluation period, the IS faculty has passed several policies and processes regarding departmental TA, including: 1) TA selection process where the graduate committee ranks new PhD students and the top ones are selected as TAs; 2) 2+1 policy for TAs: top ranked new PhD students will receive two years of TA funding and can receive a third year TA funding if they successfully defend their proposal and get admitted into candidacy by the end of their third year; 3) gap funding policy where faculty members can apply each semester when they have a funding gap and request departmental TA support for certain PhD students beyond the 2+1 year. A departmental committee discusses and makes a decision subject to the available budget. The goal of these policies and processes is to have a transparent process for allocation of departmental TA lines and ensure students who receive TA funding make satisfactory progress.

The department also provides two student travel funds, one is mainly for PhD students to present their work at conferences and the other is to support both graduate and undergraduate students to attend conferences or workshops for professional development.

The department also started to provide a Technuf fellowship for graduate students based on a donation from one of our alumni. This fellowship is for conducting graduate research and/or pursuing a career in Artificial Intelligence or Machine Learning (AI/ML) and /or Cybersecurity; possess an entrepreneurial mindset; and be a strong academic student who is not receiving third party financial support.

2.c.5. Facilities

Another pressing need is to find more space for faculty offices and research labs and upgrade existing facilities. As indicated in Appendix F, the department has almost run out of office space and lab space. As our faculty receive more grants, they need more space to put equipment and students. The department's hardware and software also needs to be upgraded. For example, many faculty members' research needs to use a lot of data, but the default disk space provided by UMBC High Performance Computing Facility (HPCF, https://hpcf.umbc.edu/) is only 100 GB. There is limited storage provided to faculty by default. Many faculty members are conducting research that requires GPUs but the department has limited GPU resources. It could take days from the UMBC HPCF cluster to allocate GPUs to run experiments. The department is working with the college and DoIT to allocate more storage and computing resources for our faculty. The university also provides a limited number of software licenses for faculty research and teaching. Premier level Licenses for Generative AI tools and teaching tools such as Kritick will be useful. In addition to physical resources, faculty also find the process of purchasing software and creating a data use agreement cumbersome.

2.d Contextual Program Analysis

2.d.1 What has been done since the last review?

New Programs: The IS department started a new MPS program in Software Engineering in 2021. The goal of the program is to provide an education based in software engineering knowledge, technologies, and skills that are widely sought after in today's economy. The program length is 10 3-credit courses of which 6 are core courses and the other 4 are electives. Students may choose to take electives with focus on three primary pathways: software architecture, data engineering, and software engineering management. There are two additional pathways that include software engineering education and software engineering consulting. The program is in its third year. We attracted students internationally and domestically with a diverse student population including an average of 30% female students for terms Spring 2022 through Fall 2024. As of December 2024, 22 students successfully graduated from the program.

Curriculum development and pedagogical innovations

IS BS: SLOs for all core courses were reviewed. We now have a standardized set of SLOs for each of these courses. This creates an environment where outcomes are constant across the multiple sections of the courses. Gateway classes (e.g., IS300, IS310) have been restructured by the course lead and Associate UPD to improve the learning experience, and update technologies used.

BTA: Similar to the IS BS program, course level SLOs were also reviewed by the Associate UPD. Leads have been appointed for each of the courses, with a view to helping to standardize SLOs and content across different sections of courses. A curriculum remapping exercise was undertaken to align instruction with learning outcomes and desired goals. Based upon the curriculum map developed, we are working together to identify modifications for courses which would help both scaffold learning and improve the subjective learning experience for students in the program. Examples of planned modifications include the tighter coupling of technology and business processes in classes to better demonstrate how tools are used within the context of business processes (IS295, IS320). We also aim to restructure introductory programming content (IS125) to provide exposure to technologies that are more commonly used in industry (e.g. Python). A faculty-led learning experience has been created, providing students from the IS, BTA and other majors with the opportunity to cover global perspectives of management (MGMT210). The first learning experience is being conducted in Panama, with future experiences planned in Europe.

After reviewing areas that are strengths within the program and department, a minor in Management has been developed. A minor in User Experience and Human-Centered Computing has been proposed and is currently being reviewed by the Undergraduate Committee, with the aim of starting in Fall 2025.

IS MS: Since the last APR, we instituted three new tracks (AI, HCC, Data Science) within the IS Master's program, which allow students to showcase their knowledge and skill set in one or two areas to potential employers that are seeking candidates with specific skills. We also removed a course, IS651, from being a core course and allows students to take more electives to specialize in an area. We have introduced several new courses since the last APR, such as IS789: Big Data Fundamentals, IS757: Deep Learning, and IS790: Causal AI. We also streamlined several of the processes for registering for external courses by creating a documented approved external courses spreadsheet, and for seeking CPT/OPT approvals for international students. All of these processes helped improve the student experience in the program.

HCC MS: Since the last APR, we have implemented several pedagogical innovations to foster student success. We developed an accelerated program - BS CS/MS HCC and are in the process of finalizing accelerated programs with Psychology - BS/BA PSYC/MS HCC. We have also developed new courses: HCC 746 "Affective Human-Computer Interaction" and HCC 747 "Participatory Design and Community Engagement" (pending graduate school approval). We also developed and taught a special topics course, "The User Experience of Virtual and Augmented Reality". We revamped and taught a prior elective, HCC 741 (Introduction to Assistive Technology and Accessibility Research). We engaged our HCC MS students

in a survey (Fall 2023) and a focus group (Fall 2024) to understand their experiences and assessment of the program and performed a curriculum remapping in Fall 2024.

IS Online MS: In 2023, the Department launched five new online certificates associated with the Online MS in IS program: Foundations of Information Systems, Artificial Intelligence (AI), Cybersecurity Informatics, Data Science Informatics, and User Experience (UX). These certificates enhance the Online MS program's mission of providing flexible educational opportunities, particularly valuable for those students who would like to advance their education while working full time. The Online MS further introduced program tracks offering students the chance to demonstrate specialization in each of the areas that certificates are offered (excluding Foundations of Information Systems, which roughly corresponds to the required courses for the Online MS). We have developed, or are in the process of developing, MicroMasters programs offered on the EdX online learning platform in these same fields, to act as "on-ramps" into the Online MS program. Students who complete one of these programs transfer acquired credits to the Online MS in IS, which has been bolstered by hiring two full-time instructional faculty members. Amid increasing competition in the space of online Master's degrees, in 2024 the program was ranked 34th in the U.S. News' Best Online Master's in IT.

HIT MPS: The MPS in Health IT program has grown over the past four years. In addition to the program director and assistant program director, there are 11 adjunct faculty actively teaching in the program. Since the last APR, we have developed a new special topics course (Social Determinants of Health Through Informatics), revamped several courses to better align with current industry needs (HIT 640, 658, 663, 759, 760), developed an FAQ resource to support student advising and registration, and have started the process of applying for accreditation through the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). In alignment with the CAHIIM accreditation process, the HIT program is currently evaluating its course offerings to identify opportunities to prepare students to be future leaders in the health informatics fields. This process will also include establishing a formal advisory group to maintain a regular connection with industry and practice.

SENG MPS: The MPS in Software Engineering is a new program. We continue to grow the courses offered and the program reach. Accomplishments to-date include the following: 1) Seven new courses were developed; 2) Three combined programs have been approved including BS PSYC/MPS SENG, BA PSYC/MPS SENG, and BA BTA/MPS SENG; 3) One new information hub website was launched in Summer 2023 to offer better advising and students experience; and 4) One new applied research lab, the Ethical Software Lab, was launched in Spring 2023 to offer applied research opportunities in software engineering.

IS PhD: Since the last APR, new electives were developed and offered as described in the IS MS program. We also supported the development of a graduate student group, Social Hub, for both IS and HCC MS and PhD students which provides a venue for students to get together and discuss school and life related issues. There are also plans to perform a curriculum mapping for the methodology courses (IS804, 805, 809) and assess whether the methodology courses serve the needs of adequately preparing students for research. We also adopted a PhD student review form that is to be completed annually by the PhD student and the mentor. The goal of this annual review is to ensure the student is mentored adequately and is on course for timely completion of their degree. Another change we made in the admission requirements for the PhD program, is to make the GRE optional, so as to promote equity in admissions.

HCC PhD: Since the last APR, new electives have been developed and offered (as described in the HCC MS program). In addition to the regular curriculum, we have implemented a weekly seminar/meeting aimed at HCC PhD students, however, any member of the UMBC community who is interested in HCC research and interactive systems is welcome to join. Each academic year, a new committee of second year HCC PhD students is in charge of organizing the meetings. The committee is overseen by the GPD. Recent sessions have included *a presentation by the IRB on the IRB protocol process* and *Managing Imposter Syndrome as Graduate Students.*

Faculty mentoring: the IS department has ramped up faculty mentoring efforts during the evaluation periods. It has created junior/senior workshops that are held annually between assistant professors and tenured faculty, between lecturers and senior lecturers, and between associate professors and full professors. One comment received in the last APR is the lack of full professors in the department. During this period, nine associate professors have been promoted to full professors, bringing the total number of full professors in the department to eight (three full professors left UMBC to other universities during this period). There were also five assistant professors promoted to associate professors with tenure and one lecturer promoted to senior lecturer. A number of faculty members are either serving as mentors, and/or members of launch committees providing key input for junior faculty

New policies: the IS department has passed a number of new policies to increase transparency and address existing issues. The new policies include 1) a new workload policy to reduce the standard teaching load of T/TT faculty and allow for flexibility in workload assignments so that the assignments may reflect possible changes in faculty members' interests, strengths, and commitments over time; 2) a new adjunct annual review policy to assess performance of adjuncts and provide useful feedback; 3) few funding policies for PhD students, including offering selected new PhD students up to 3 years of TA funding provided that they complete proposal defense by the end of the third year, offering strong new PhD students up to five years of guaranteed funding with a mix of department and faculty funding, providing a gap funding mechanism where faculty members can ask for additional support for their students.

2.d.2. In what ways is the program(s) contributing to the mission of UMBC?

The department has contributed to UMBC's education and research mission by 1) broadening participation and empowering student learning through teaching and mentorship for the development of real world skills in the design and implementation of information technologies (e.g., the department created a BPC plan); 2) advance fundamental, technical and applied research to support both developers and users of information system; 3) encourage continuous learning and growth of our UMBC community by fostering innovation and collaboration to build a diverse and modern professional workforce which can adapt to a dynamic environment; 4) promoting social justice through civically engaged research, teaching and service; 5) Creating a positive impact on our local community and the global society; 6) continuously evolving and communicating our unique identity by advancing innovation, inclusion, and interdisciplinary collaboration. The department has a strong track record of placing students to state and federal agencies as well as industries and academia, and hence making significant contributions toward UMBC's mission of developing economic and policy leaders for the state and the community.

2.d.3 In what ways is the program(s) advancing the state of the fields in research and curriculum?

The IS faculty has conducted both fundamental and applied research, and often takes an interdisciplinary approach, collaborating with researchers in other disciplines. For example, Dr. Janeja has led a team of researchers in computer and information systems, earth and environmental science, mathematics, electric and civic engineering to advance our understanding of the response of polar regions to climate change and its global impact. Our faculty has an exemplary record of training students and placing them in prominent positions in academia, government and industry. The placements of our alumni from the PhD program can be found in Appendix O. Moreover, as previously detailed in 2d (i) and (ii), our faculty are at the forefront of pedagogical innovations by creating new courses and conducting pedagogical research as illustrated by the number of both internal and external education research awards.

2.d.4. How effectively are students in the program achieving program (and institutional) student learning outcomes? How is the program assessing student learning outcomes? How is the program using student learning outcomes data to improve student learning?

It is the goal of the IS department that students enrolled in the various (nine) programs offered in the department, upon completion of their degree, have achieved the goals and the learning outcomes of the

program they attended. For the students this is a significant investment both in time and money and for the IS department it is a commitment to the students. One of the major metrics in achieving the learning outcomes in the various programs is to look at placement of students soon after graduation. With the help of the UMBC Career Center, which conducts surveys of graduating students we have access to placement data for each one of our programs. Overall based on data from the last seven years, 85-92% of our BS graduates and 82-98% of our BA graduates are employed within 6 months of graduation. Approximately 90% are placed in positions directly related to their career goals. About 80% of our BS/BA graduates get employed in industry, about 10% in government, and about 5% go for an advanced degree.

BS in Information Systems and BA in Business Technology Administration:

- Top employers: Accenture, Allegis, Amazon, Booz Allen Hamilton,Centers for Medicare and Medicaid, Carefirst BlueCross BlueShield, Deloitte Consulting, Exelon, EY, Freddie Mac, GEICO, General Dynamics, Johns Hopkins University, Leidos, Lockheed Martin, MITRE, Morgan Stanley, Northrop Grumman, Textron, T. Rowe Price, UPS, US Dept of Defense, US SSA, Whiting Turner Contracting.
- Top sample positions: Software engineer, Software developer, Data analyst, Operations analyst, Cyber security analyst, Systems engineer, Business analyst, IT specialist, Cloud support specialist, Web developer, Data engineer, Assistant Manager, IT Specialist, Account executive, System administrator, Application developer, IT consultant, Project manager, Business intelligence analyst, Business systems analyst.

BS/BA graduates who choose to continue their studies attend graduate school at the following institutions: Univ. of MD, Baltimore County, Univ. of MD, College Park, Univ. of MD, Global Campus, Johns Hopkins Univ., Penn State University, Towson University, American University, Clemson University, George Washington University, Georgia Institute of Technology, Loyola University, New York University, Univ. of Baltimore, Univ. of California Irvine, Univ. of South Carolina, Villanova University, Virginia Tech.

In addition, 92% of our MS graduates get employed within six months from graduation (MS in IS: ~80% in industry, ~10% in government, MS in HCC: ~75% industry, 15% government). Students in our professional MPS in Health IT are placed in industry (~70%) government (~20%) all in the healthcare sector. The MPS in Software Engineering is relatively new (launched in 2021) with very little data to report. Finally, 100% of our PhD graduates are employed in industry, government, or academia.

MS/Ph.D. in Information Systems and in Human Centered Computing:

- Top employers: Accenture, Amazon, Apple, Booz Allen Hamilton, Cisco, Facebook, Carefirst BlueCross BlueShield, Deloitte Consulting, Exelon, EY, Freddie Mac, GEICO, General Dynamics, Johns Hopkins University, Leidos, LinkedIn, Lockheed Martin, MasterCard, Microsoft, MyStudio, NASA, Northrop Grumman, Textron, Reality AI, T. Rowe Price, UPS, US Dept of Defense, US SSA, Walmart, Whiting Turner Contracting.
- Top sample positions: Software engineer, Software developer, UX/UI designer, Human Factors Engineer, Professor, Engineering psychologist,Data analyst, Cyber security analyst, Systems engineer, Business analyst, IT specialist, Cloud support specialist, Postdoctoral fellow, Principal software engineer, Web developer, Data engineer, System administrator, Application developer, IT consultant, Project manager, Professor, Business intelligence analyst, Business systems analyst, UX Researcher.

MPS in Health IT and in Software Engineering:

- Top sample employers: Aerospace Corp., Amazon, Baygrape Technology, Catalent Pharma Solutions, Carefirst BlueCross BlueShield, Constellation Energy, Children's Hospital of Philadelphia, General Dynamics, Johns Hopkins Univ., Lifebridge Health, NASA, Naval Air Systems Command, Castell, Chesapeake Eye Care, Columbia Medical Practice, CRISP, Deloitte, Johns Hopkins Hospital, Molina HealthCare, Pfizer, ScriptPro, Parsons, Raytheon, Uber, US Army, US Navy, US Dept of Justice, US FDA, Univ. of MD Medical System, US Dept of State, WebMD.

- Top sample positions: Agile Delivery Lead, Business analyst, Clinical Data specialist, Data analyst, Health IT technologist, IT specialized assurance analyst, Systems engineer, Laboratory operations manager, Program analyst, Embedded software engineer, Lead engineer, Project manager, Public health analyst.

It is worth mentioning sample of student testimonials about UMBC (supplied by the UMBC Career Center):
"*UMBC prepared me for my future by introducing me to potential career options and interests as well as giving me the opportunity to acquire leadership experience"*
"The Information Systems degree gave me a broad range of skills that will make me competitive and useful in the workplace"
"UMBC prepared me by providing with the necessary skills to succeed in a professional work setting, no matter the field. Also improved my work ethic and ability to handle more responsibility"

Program assessment outcomes and how we use that to improve student learning have been summarized in Section 2.c.1. In addition, the program effectively assesses student learning outcomes through the use of an exit survey, which gathers valuable feedback from students about their experiences and future plans. The survey includes questions about the reasons students chose UMBC, their post-graduation career goals, whether they have received job offers, and how well the program prepared them for their careers. Additionally, the survey asks students to rate the program on key aspects such as the quality of teaching, the diversity of faculty research interests, and the opportunities available for collaborative work with faculty. This data helps the program evaluate its success in meeting student learning outcomes and in aligning with industry trends and developments. By analyzing this feedback, the program can identify areas for improvement and make data-driven adjustments to better equip students for the evolving demands of the field.

2.d.5 What does the program(s) do well currently and how did this success come about?

Our programs do well for the following reasons: 1) our faculty adopt a student-centered learning approach that provides value to students, supports student success, and brings innovation; 2) our faculty make a lot of effort in professional development (e.g., almost all the assistant professors in recent years have participated in the two-year Active Learning Inquiry Teaching program) and use resources available at UMBC to improve teaching effectiveness; 3) the department has formed a culture of interdisciplinary and collaborative research with an emphasis on community engagement and inclusive excellence.

2.d.6 How is faculty oversight of the curriculum and its content achieved and maintained?

Full-time faculty are the main keepers of the curriculum for both undergraduate and graduate programs. Each course has a designated full-time faculty, the "course master" who mainly teaches this course and is in charge of its content. If adjunct faculty also teach sections of the course, they follow the lead of the course master. Periodically we evaluate the content of each course based on changes in IT and the job market. Updates and modernization efforts to the course content are initiated by the course master and discussed in the committee that oversees the program and voted by the entire faculty. Adjunct faculty who teach sections of these courses must also adopt these changes to the courses. Periodically there is a more concerted effort to do a curriculum mapping of all courses of the program, for example as it occurred in 2022 for the BTA program, resulting in revamping the program and addressing newly revealed issues, therefore creating a new Minor in Management.

2.d.7 How is input solicited from the program's internal and external stakeholders?

The IS department is in constant evaluation of its programs based on input (formal and informal) from various sources and stakeholders, both internal and external.
Internal: A major stakeholder and input contributor is our student body. We take into serious consideration the course evaluations that students submit anonymously for every course at the end of the semester, and sometimes during the semester, if asked by the instructor. Course evaluations provide to an instructor an overall picture of the student experience in two ways: 1) a Likert scale quantitative evaluation, and 2) a

qualitative evaluation in terms of comments (both positive and negative) about every aspect of the course. This is very important input by the most important stakeholder: our student body.
In addition, other faculty members provide input on existing courses by participating in the relevant committees. On many occasions, representatives of the Faculty Development Center (FDC) are invited for course observations of instructors and provide valuable feedback on teaching techniques and other relevant issues based on results of focus group discussions with the students. This feedback is essential to the instructors and to the department for maintaining a high quality of course content.
External: A recently created advisory board meets approximately on an annual basis to discuss topics relevant to the advancement of the department in conjunction with the job market. Input is solicited from members of the industrial advisory board that is taken into consideration and is incorporated into courses and/or research initiatives. Also employers who hire several of our graduates, such as T. Rowe Price provide feedback on the qualities they value in our graduates who are their employees. Another significant stakeholder is the external reviewers who provide significant feedback to the UMBC Administration and the IS department.

2.d.8 What additional data (quantitative or qualitative) about the program(s) complete the picture of the program?

Our department is actively engaging with alumni through the revitalization of our Alumni Advisory Board, which now includes two focused subcommittees: Enrollment and Fundraising. The board has played a pivotal role in strengthening our connection with alumni and supporting current students. Notably, the fundraising subcommittee led a successful campaign to raise funds for student travel, providing essential support for networking and professional development opportunities. One board member donated $100,000 to establish a fellowship aimed at supporting entrepreneurial-minded graduate students. This engagement not only deepens alumni ties but also enhances resources for student success and future innovation within the department.

3. Program Planning

3.a What areas need improvement?

The IS faculty has identified the following areas that need improvement:

- *High student teacher ratio*. As described in Section 2.b.8, our student to faculty ratio continues to be high due to the increase in enrollment. Higher levels of enrollment imply higher revenue to the university and necessitate more resources to the departments to educate an increasing number of students. The IS faculty research output has increased significantly during this evaluation period but the standard teaching load for T/TT faculty is higher than the load in many peer R1 institutions. Our non T/TT faculty also advise on average 150 undergraduate students and the load will continue to increase given the recent growth in undergraduate enrollment. Currently the department relies on adjunct faculty to cover around 50% of course sections. But there are challenges to improve teaching effectiveness of adjunct faculty, and there have been cases when the department has to scramble to find replacement instructors when some adjunct faculty cancel their commitment shortly before the semester starts.
- *Attracting more domestic applicants to our graduate programs.* Currently in the IS MS and the two MPS programs 91% of students are international and sometimes they are mostly from one or two countries. This creates challenges for enrollment management as the number of international applications fluctuates over time. We have seen a dramatic increase and decrease during this evaluation period. To stabilize enrollment, these programs need to attract more domestic students, especially our own undergraduate students and students from the region of DC, Maryland, and Virginia (DMV).
- *The need to revamp some courses to reflect the latest technology development.* The latest technology development such as AI has created a need for us to revamp course materials to prepare our students for the changing demand of knowledge and skills necessary for a future workforce.
- *Insufficient TA and grader lines and insufficient training for TAs and graders.* The department has had approximately 20 TA lines for many years. Now that both the PhD programs have grown (we have over 100 PhD students in the past two years) and the department is offering more courses (a 30% increase compared to 2018), there is a pressing need for more TA/grader lines. In addition, the graduate school provides limited TA training. As a result, the department often receives complaints from instructors that the TA or grader's performance does not meet their expectations. The department or college needs to provide better training of TA and graders.
- *Recruitment of high quality PhD students and mentoring of PhD students.* As the department's research activities increase, it is crucial to recruit high quality PhD students and improve mentoring of PhD students as some faculty members now need to supervise a large number of PhD students.
- *Retention and work-life balance of faculty and staff.* The department has very talented faculty and staff members and many of them are stretched given the increased research activities and enrollment growth. The department needs to better address work-life balance and provide better retention mechanisms for both faculty and staff.
- *Insufficient space and other facilities to meet the growing demand.* The department almost runs out of space. The department's computing hardware is also relatively old. As it is unclear whether the university will add more buildings in the near future, it is important to find more space and improve other facilities to meet the growing need from faculty, students, and staff.

3.b What are the vision and future goals of the program(s) and what is the strategy for achieving these?

The department's vision is to expand our role as global leaders at the intersection of information, technology, and people, by promoting inclusive student-centered teaching, reimagining life-long learning, advancing innovative interdisciplinary research, and championing civic engagement. The department has made substantial progress on education, research, and civic engagement in this evaluation period. Moving

forward, the department needs to grow more strategically, adapt to the technology development, and invest more resources both on *human capital* and physical resources to maintain a more *sustainable* growth path.

The IS department has the following future goals both at the department level and at individual programs. Next we describe these goals and strategies to achieve them.

Departmental level:
G1: Reduce student teacher ratio and improve retention and work-life balance of faculty and staff. The biggest challenge for IS faculty and staff is that many of them are very stretched given the rapid increase in research activities as well as in enrollments.

Faculty workload/retention: In the past few semesters the IS department has made concerted efforts to evaluate and examine the workload policy regarding teaching and service. A committee was established to tackle the current policy and provide a new policy that is fair and equitable across all faculty. The department voted on the new policy which is currently in effect. An overall summary of the new policy is to assist faculty reach their career goals by lessening the load of teaching if they were engaged in duties that exceeded the norm, e.g., multiple funded research projects, leading centers, or taking on leadership/administrative services for the department. The purpose of this new policy is to also provide an environment of support to both junior and senior faculty so that our bright and successful colleagues feel valued and respected, and consequently to happily continue their work in the IS department at UMBC.

The department will use the following strategies to achieve this goal: 1) Hire more full-time faculty, both at the tenure track level in areas that can complement and strengthen the department's research, and lecturers or Professors of Practice who can meet the needs of enrollment growth. 2) Move some of the undergraduate advising load to the college academic advisors. The department plans to move advising of new freshmen students to the college advisors until they pass the gateway. The non-T/TT faculty will focus on advising students who have passed gateway or transfer students as they often have unique needs and are more difficult to be handled uniformly. 3) Provide better mentoring for non-T/TT faculty as well as mid-career faculty as they traditionally receive less attention in terms of mentoring. In addition to the annual workshop, the chair will have one-on-one mentoring meetings annually with all mid career and non-T/TT faculty. 4) Task the committee on mentoring and retention to work with the chair and identify mentoring and retention issues. The department chair will react to such concerns and take actions proactively. For example, in 2024 the department chair worked with the dean to offer retention packages to four faculty members who made great contributions in terms of research, education, and services. 5) Offer more support to address work-life balance issues. In the past the department chair has handled such issues case by case. Moving forward the department will create a list of possible support available and when a faculty or staff comes to the chair for support, the chair can go through this list with the faculty or staff to create a solution.

G2: Increase TA and grader lines and offer better training for TAs and graders. The department will ask for an increase of budget in TA and grader support given growth of enrollment. Currently the graduate school has a training program for new TAs who are international students when they first arrive at UMBC. The department will work with the graduate school and the college to provide similar training programs to anyone who has become TA or grader. The department will also improve the TA and grader assignment process to better match TAs and graders to the courses based on their capabilities. The department also plans to add an evaluation process for TAs wherein feedback is sought from the instructor (and students of the class) which will be used in awarding future TA contracts.

Education:

G4: attract more domestic students for graduate programs. Very few of our graduate students are US citizens or permanent residents. We want to help our country not to lose the edge in technology. The department will coordinate with graduate school and college on recruitment of domestic students for graduate programs.

The college has started to send out emails to undergraduate students in each department who have met the GPA requirement of graduate programs to encourage them to apply and will waive application fees and simplify the application process.

In the last year, the department has focused on recruiting domestic students with targeted ad campaigns to individuals in the Maryland, DC, and Virginia area. Carefully determined audience segments are targeted through a mix of social media ads on Meta, LinkedIn, and Reddit. We have restructured our keyword search campaigns on Google for broader reach in the continental United States. To assist this effort, the department has hired a staff member to coordinate recruitment efforts of the department. She has started to go to undergraduate classes such as IS 410 (this is a course when students can start to apply for BS/MS accelerated programs) to advertise our graduate programs. We are also establishing relationships with local liberal art colleges to create pathways to our programs for their students. For the online MS program, several faculty members have developed a few online course series called MicroMasters that will serve as a pathway for students into our program.

G5: Continuous revamping of curriculum to reflect the latest technology development. The IS department has started revamping our BTA program's curriculum. We completed revising the overall program objectives and the curriculum mapping process in 2023-2024. The curriculum map has also been shown to the industrial advisory board and their input has been taken into account. IS faculty reviewed each course in the program and mapped the course objectives to the overall program objectives. This course mapping process was focused on the core courses of the BTA degree and helped us identify courses that need a major redesign. In the coming year we plan to redesign several BTA courses such as IS 125 to reflect technology development, and include more business processes and technology (IS295, IS320). We also plan to revamp the methodology courses in PhD programs. We will start with a curriculum mapping step and then create a new introductory methods course and revamp the existing methodology courses to reduce overlap and reflect the needs of our students.

G6: Seek new opportunities for enrollment growth, especially interdisciplinary programs. Discussion regarding a User Experience (UX) and Human-Centered Computing minor has come about due to an increase in employment opportunities in both UX design and UX research, and an interest from students from all around the campus to gain formal UX training. The proposed minor offers a pathway for students with and without backgrounds in computing or design. The department also plans to create a graduate MPS program in Financial Technology (Fintech). We are also contemplating a MA for AI.

G7: Improving student retention and student mentoring. Strategies: 1) the department will identify and address issues related to student retention. For example, one issue identified by a student survey is that many students are considering leaving the program because of isolation as students and faculty tend to work remotely more often after Covid. To address this issue, the department will organize more social events and provide support to student organizations, i.e., the IS Social Hub, to organize their own events. For example, the department has recently organized a welcome week event as well as a movie night event. 2) The department has created a new PhD annual review form where mentors will fill out and discuss with students. The department is also planning on a mentoring workshop which invites both faculty and students. The department is also planning on workshops on soft skills.

Research:

G8: Encourage large interdisciplinary projects and diversify funding sources. The department will continue to encourage and provide support to faculty members to seek funding for large interdisciplinary projects. The department will offer course releases for faculty members to develop such large proposals. Most of our faculty get funding from NSF. The department will encourage faculty members to diversify funding sources. The department will invite more program managers from different funding agencies to visit. The department will also provide support such as course releases to faculty who develop large proposals to other

funding sources such as DARPA or NIH. Several IS faculty members have just received an R01 grant from NIH as an initial success.

3.c ***How could the program deploy its resources differently to accomplish its goals? What is the program's highest priority need?***

Although we have dealt quite successfully in finding solutions to our problems in the past, there is a need to have a solid plan to accomplish our goals. The department has the following plan: 1) The department will work with the Dean and the Provost to seek additional support from the college and university, especially faculty lines to reduce the student-teacher ratio; 2) the department will maintain a healthy growth of self supported programs (IS MS online and the two MPS programs) to provide a stable stream of additional revenue that will allow the department to deploy additional resources to achieve our goals; 3) the department will work with the Office of Institutional Advancement to cultivating relationships with alumni and seeking funding raising opportunities; 4) the department will support initiatives that help achieving the listed goals, including travel support for students, funding for undergraduate research, support for student organized events, funding to support professional development of faculty and staff, including adjuncts, and support to upgrade facilities such as labs and student space.

The department's success is due to our human capital: the hard-working faculty and staff. So the highest priority need is to have more faculty lines to reduce student-teacher ratio as our enrollment continues to grow. This will also allow our faculty and staff to achieve a better work-life balance. In addition, the more faculty we have, the more funding they will bring. Another pressing need is to find more space for faculty offices and research labs and upgrade existing facilities. As indicated in Appendix F , the department has almost run out of office space and lab space. As our faculty receive more grants, they need more space to put equipment and students. The department's hardware and software also needs to be upgraded. For example, many faculty members' research needs to use a lot of data, but the default disk space provided by UMBC High Performance Computing Facility (HPCF, https://hpcf.umbc.edu/) is only 100 GB. Many faculty members are conducting research that requires GPUs but the department has limited GPU resources. It could take days from the UMBC HPCF cluster to allocate GPUs to run experiments. The department is working with the college and DoIT to allocate more storage and computing resources for our faculty.

The CVs of all faculty in the same standardized format are included in the Appendix P.

Appendices

Appendix A: Program Data

Note: The source for all of the data in this Appendix is UMBC REX, the university's data warehousing system, provided by the Office of Institutional Research, Analysis & Decision Support and the REX Data Warehouse team, and reference data from relevant student, employee, and finance data tables, as well as other information systems across campus.

Figure A.1. 7 Year Admission Trend, Freshmen

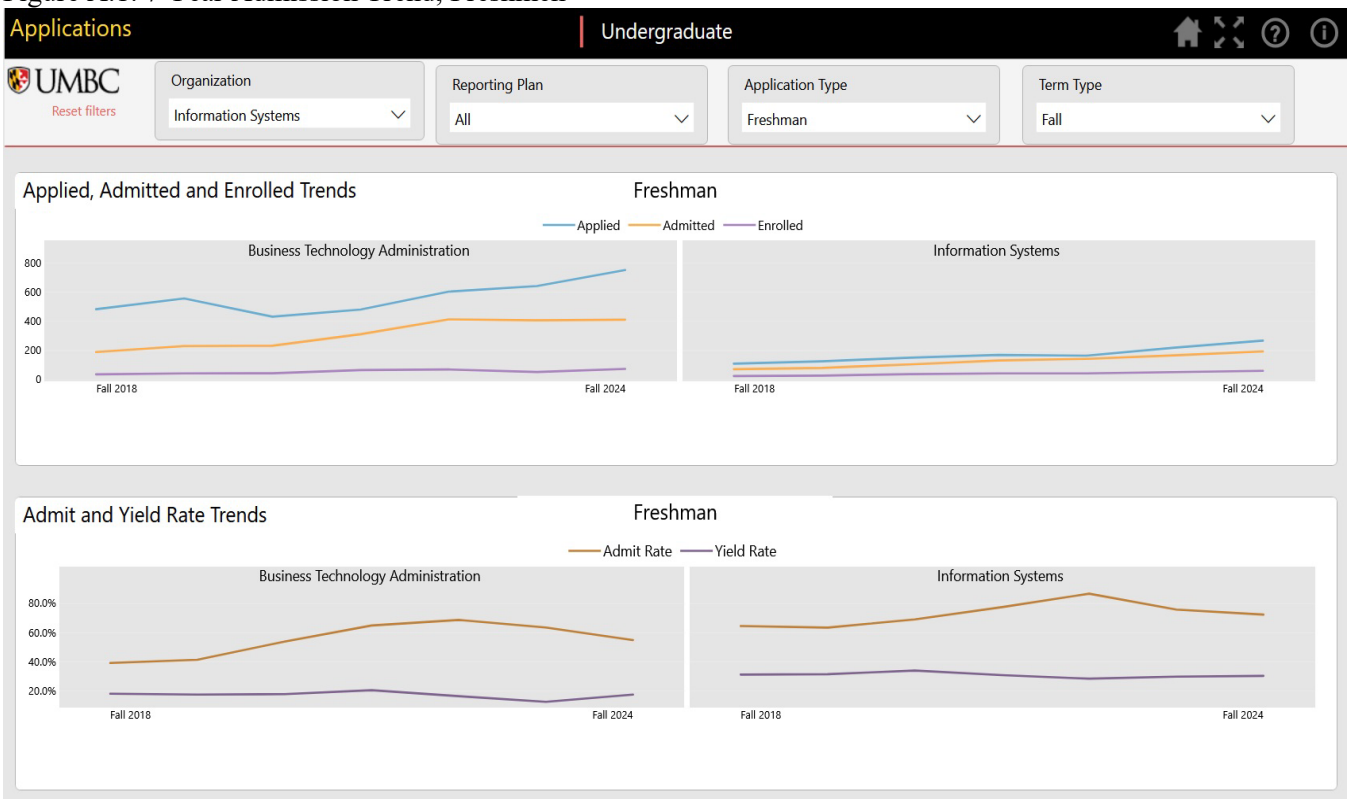


Figure A.2. 7 Year Admission Trend, Transfer Students

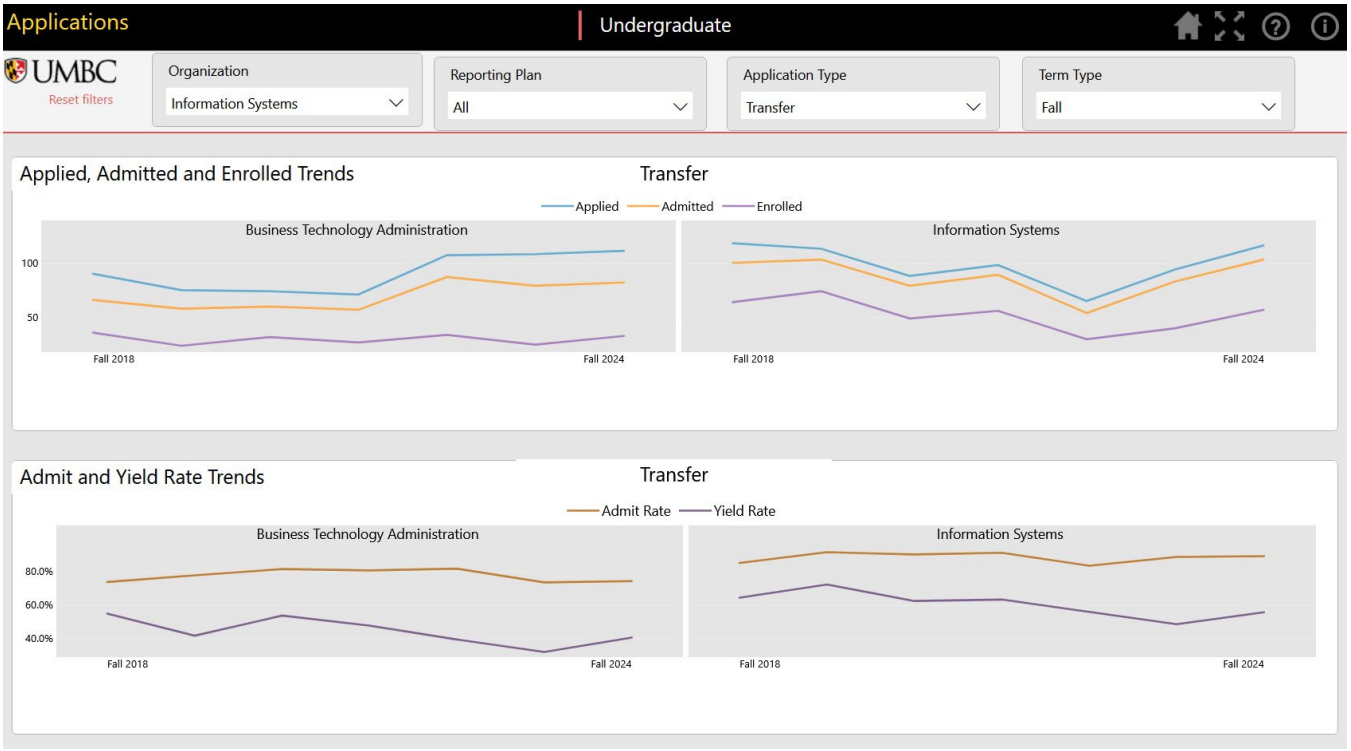


Figure A.3, 7 year admission trend, MS programs

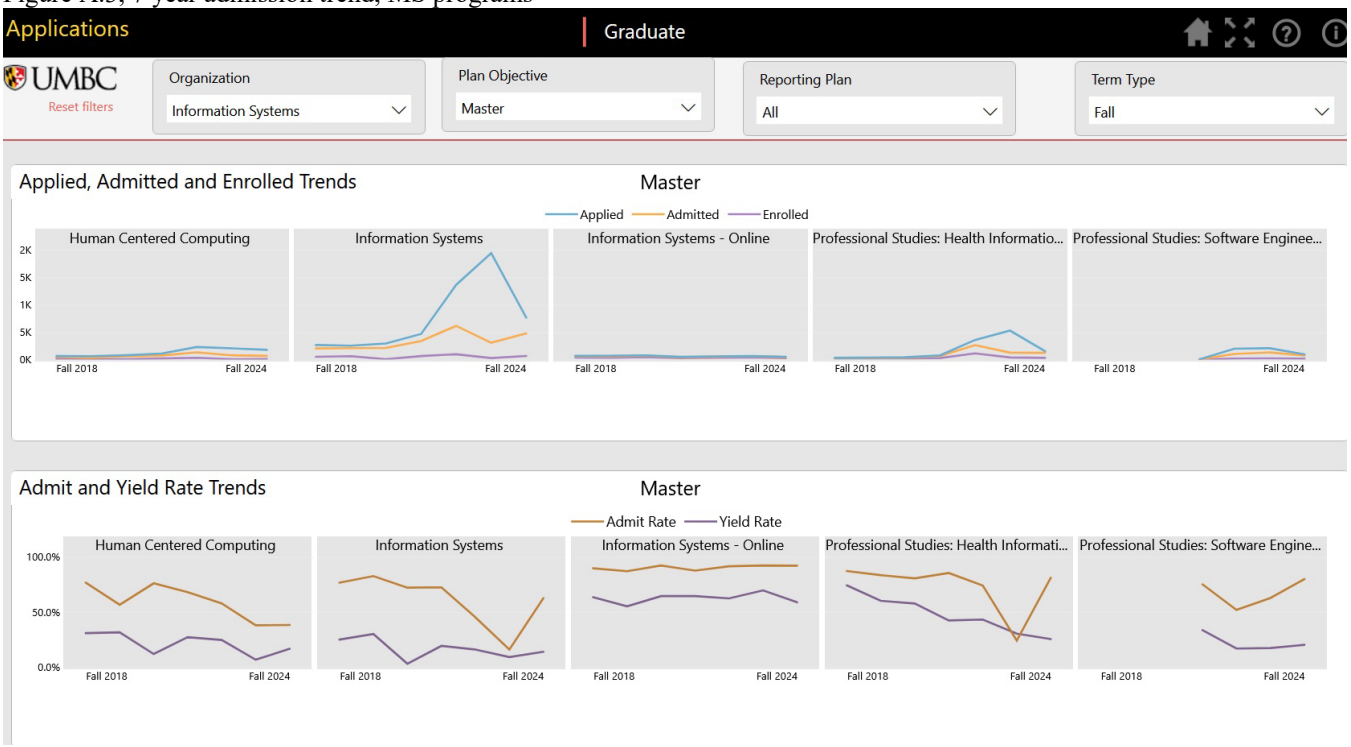


Figure A.4, 7 year admission trend, PhD's programs

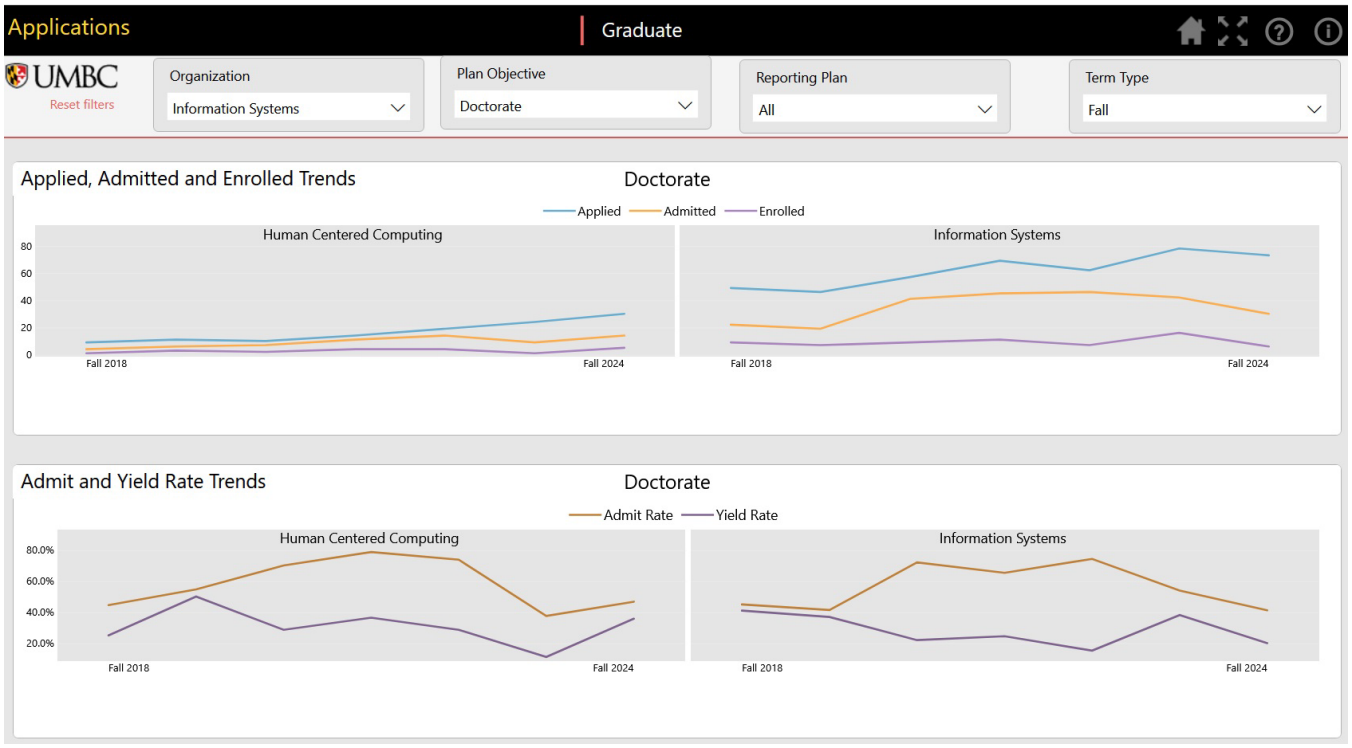


Figure A.5. Undergraduate enrollment table

	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
Bachelor							
Bus Tech Admin - BA	344	358	360	366	388	365	407
Primary Plan	290	306	289	288	299	285	316
Add'l Plan	54	52	71	78	89	80	91
Bus Tech Admin - Unknown					1		
Add'l Plan					1		
Info Sys - 2BS			1	1			
Primary Plan			1	1			
Info Sys - BA	3		2	1	1		
Primary Plan	3		2	1	1		
Info Sys - BS	937	937	959	914	880	1,007	1,134
Primary Plan	892	900	907	833	809	946	1,072
Add'l Plan	45	37	52	81	71	61	62
Minor							
Computing - Unknown				1	1	2	1
Add'l Plan				1	1	2	1
Info Sys - Unknown	52	49	46	48	46	62	56
Add'l Plan	52	49	46	48	46	62	56
Mgmt - Unknown						11	60
Add'l Plan						11	60
Upper-Level Certificate							
Audit for IS - UL MHEC		2	1				
Add'l Plan		2	1				
Business Analytics - UL MHEC							11
Add'l Plan							11
Cybr Informatics - UL MHEC	23	35	36	27	19	13	27
Add'l Plan	23	35	36	27	19	13	27
Decis Mak Sppt - UL MHEC	1	8	8	8	1	1	3
Add'l Plan	1	8	8	8	1	1	3
Health IT - UL MHEC	6	1	5	1	2	4	8
Add'l Plan	6	1	5	1	2	4	8
MBA Prep Std - UCRT	7	7	3	3	4	8	4
Add'l Plan	7	7	3	3	4	8	4
Mgmt Sci - UL MHEC		1	1	2		2	1
Add'l Plan		1	1	2		2	1
Network Admin - UL MHEC	19	19	24	18	7	3	6
Add'l Plan	19	19	24	18	7	3	6
Proj Mgmt IT - UL MHEC	3	1				1	1
Add'l Plan	3	1				1	1
User Exp,Web/Mbl Dev - UL MHEC	12	15	13	3	8	16	20
Add'l Plan	12	15	13	3	8	16	20

Figure A.6. Graduate enrollment table

	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
Doctorate							
Human Ctrd Comp - PHD	16	18	14	15	18	18	26
Primary Plan	16	18	14	15	18	18	26
Info Sys - PHD	61	59	70	73	68	88	79
Primary Plan	61	59	70	73	68	88	79
Master							
Human Ctrd Comp - MS	39	41	33	46	66	56	35
Primary Plan	37	37	30	44	65	56	35
Add'l Plan	2	4	3	2	1		
Info Sys - MS	135	152	119	144	257	254	206
Primary Plan	131	148	110	134	242	232	185
Add'l Plan	4	4	9	10	15	22	21
Info Sys OL - MS	148	144	150	115	106	132	126
Primary Plan	146	143	147	110	93	117	102
Add'l Plan	2	1	3	5	13	15	24
PS: Software Eng - MPR				1	23	62	64
Primary Plan				1	23	62	64
PS:Hlth Info Tech - MPR	48	55	62	67	194	261	160
Primary Plan	47	54	62	67	193	261	160
Add'l Plan	1	1			1		
Non-Degree Graduate							
Human Ctrd Comp - Unknown	5	2	4	2	1	1	2
Primary Plan	3	1	1		1		2
Add'l Plan	2	1	3	2		1	
Info Sys - Unknown	4	6	5	6	4	6	6
Primary Plan	3	3	1			1	
Add'l Plan	1	3	4	6	4	5	6
Info Sys OL - Unknown	3	1	3	2	1	1	
Primary Plan	1		3				
Add'l Plan	2	1		2	1	1	
PS:Hlth Info Tech - Unknown			1	2	2	3	3
Primary Plan				1			2
Add'l Plan			1	1	2	3	1
Post-Bacc Certificate							
AI - Pst-Bac Ct							1
Add'l Plan							1
Cybr Informatics - Pst-Bac Ct							1
Add'l Plan							1
Data Sci Info - Pst-Bac Ct							2
Add'l Plan							2
Fndtn of Info Sys - Pst-Bac Ct						1	
Primary Plan						1	
PS: Software Eng - Pst-Bac Ct						2	3
Primary Plan						2	2
Add'l Plan							1
User Exp Dsg - Pst-Bac Ct							1
Add'l Plan							1

Figure A.7. Undergraduate degrees awarded

	Plan Degree	2018	2019	2020	2021	2022	2023	2024	7 yr Avg
Bachelor									
Business Technology Administration- BA		87	93	94	80	81	64	66	80.7
Primary Plan	BTA BA	86	92	94	80	80	64	66	80.3
	XBTA BA	1	1			1			0.4
Information Systems- BS		218	265	248	290	278	226	214	248.4
Primary Plan	IFSM BS	217	265	246	290	277	225	214	247.7
	XIFSM BS	1		2		1	1		0.7
Minor		22	26	28	20	25	11	16	21.1
Information Systems - BA		22	26	28	20	25	11	14	20.9
Management - BS								2	0.3
Upper-Level Certificate		39	47	64	61	48	20	16	42.1
Auditing for Information Systems - ULC			1						0.1
Cybersecurity Informatics - ULC		1	9	14	10	11	7	4	8.0
Decision Making Support - ULC		6	3	11	9	7	2	1	5.6
Health Information Technology - ULC		1	2		1				0.6
MBA Preparatory Studies - UCRT		3	2	2	4			3	2.0
Network Administration - ULC		20	18	27	27	24	7	3	18.0
User Experience, Web and Mobile Development - ULC		8	12	10	10	6	4	5	7.9

Figure A.8. Graduate degrees awarded

		2018	2019	2020	2021	2022	2023	2024	7 yr Avg
Doctorate									
	Human Centered Computing - PHD	2	2	4	3	2	3		2.3
	Information Systems - PHD	7	7	6	5	9	10	10	7.7
Master									
	Human Centered Computing - MS	16	14	21	14	21	23	41	21.4
	Information Systems - MS	74	60	70	95	48	112	179	91.1
	Information Systems - Online - MS	47	50	51	58	54	50	64	53.4
	Professional Studies: Health Information Technology - MPR	22	21	16	22	30	52	149	44.6
	Professional Studies: Software Engineering - MPR							22	3.1
Post-Bacc Certificate									
	Cybersecurity Informatics - PBC							1	0.1
	Foundations of Information System - PBC							1	0.1

Figure A.9, Undergraduate Bachelor students demographics

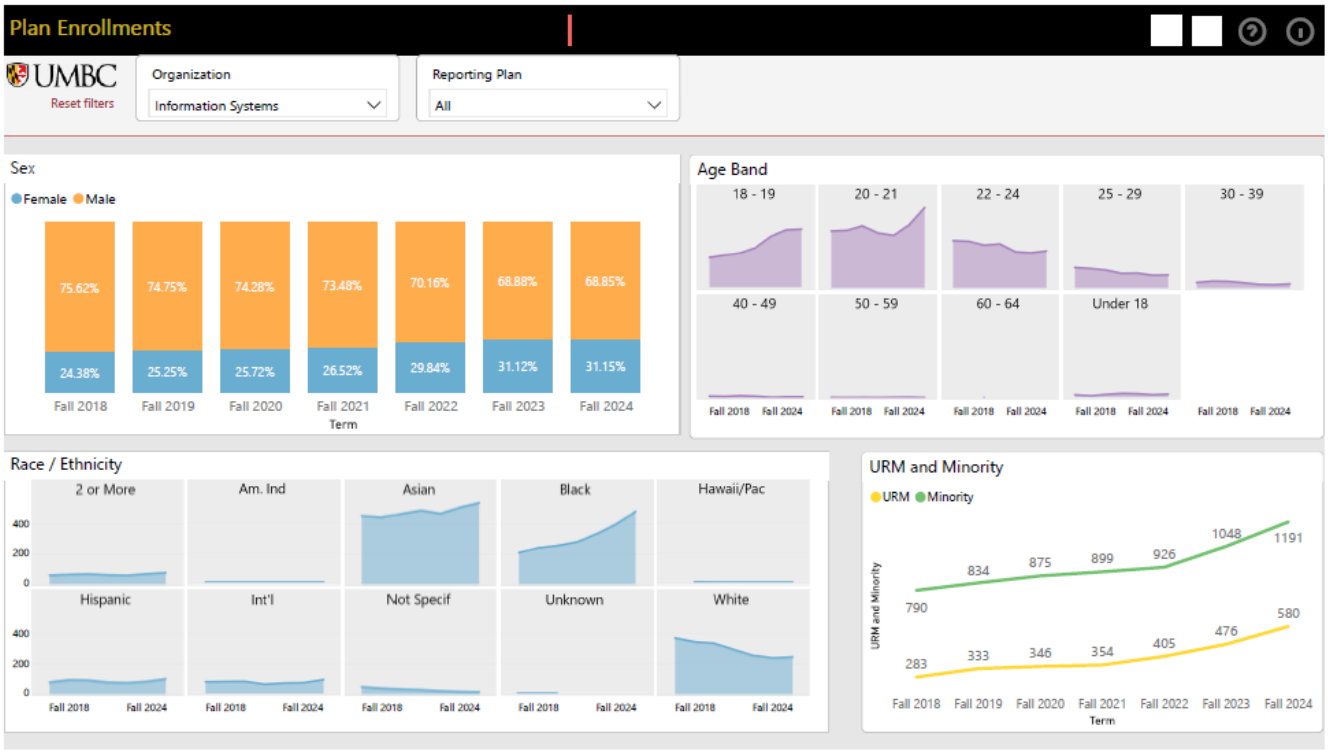


Figure A.10 Graduate student demographics

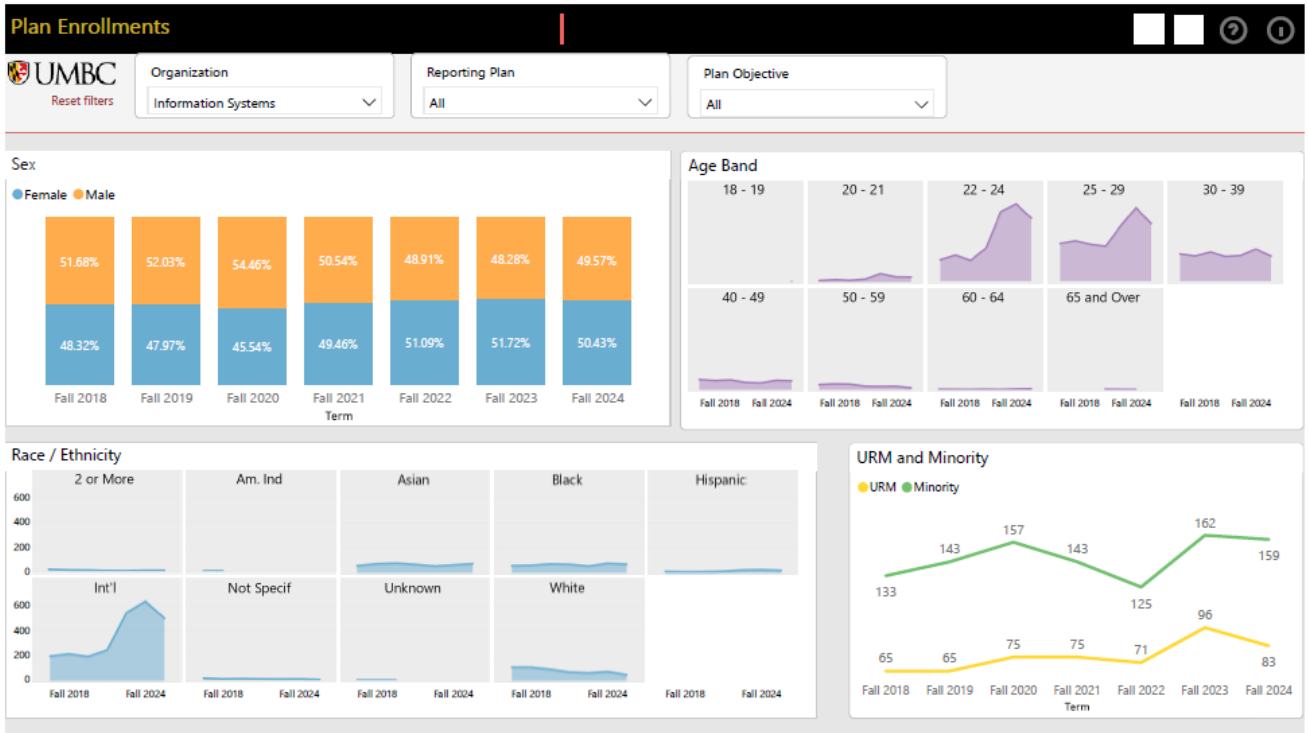


Figure A.11. IS BS Program enrollment trend by entry type

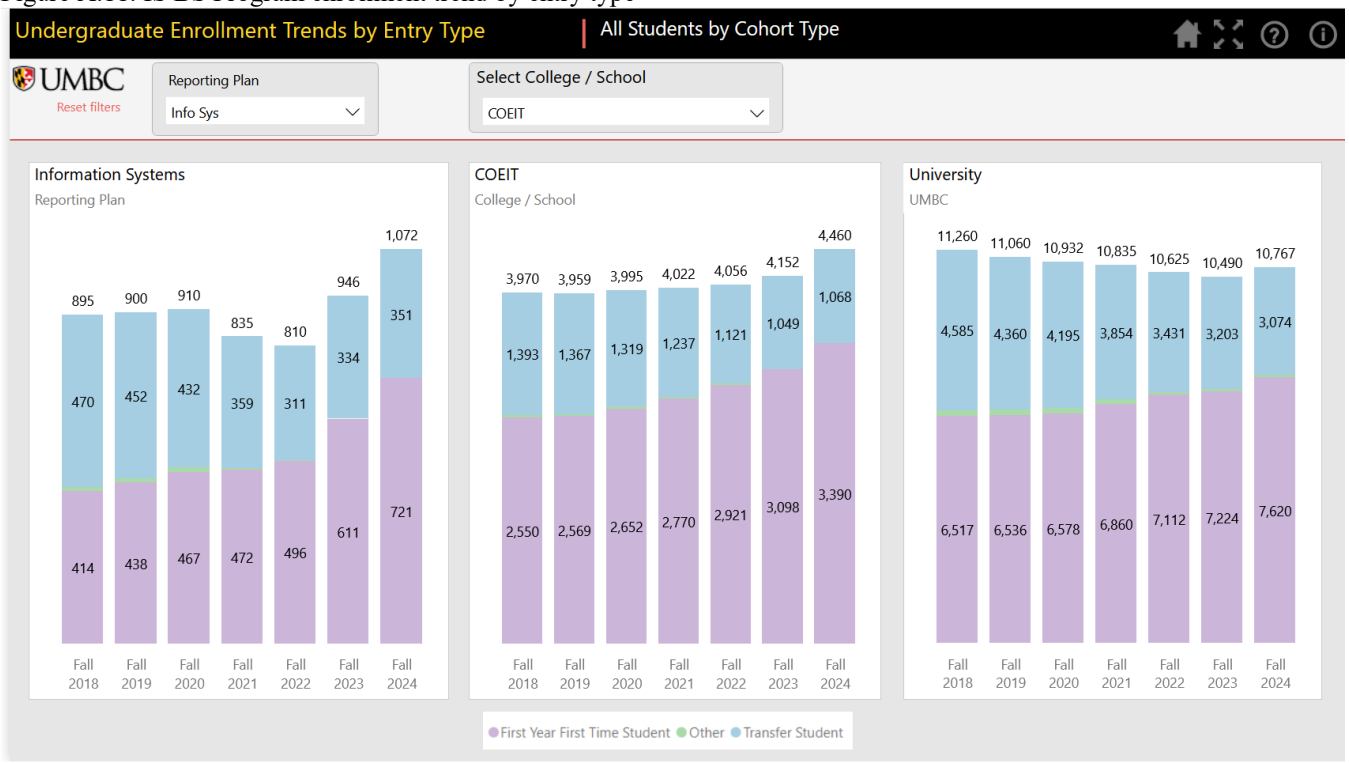


Figure A.12. BTA Program enrollment trend by entry type

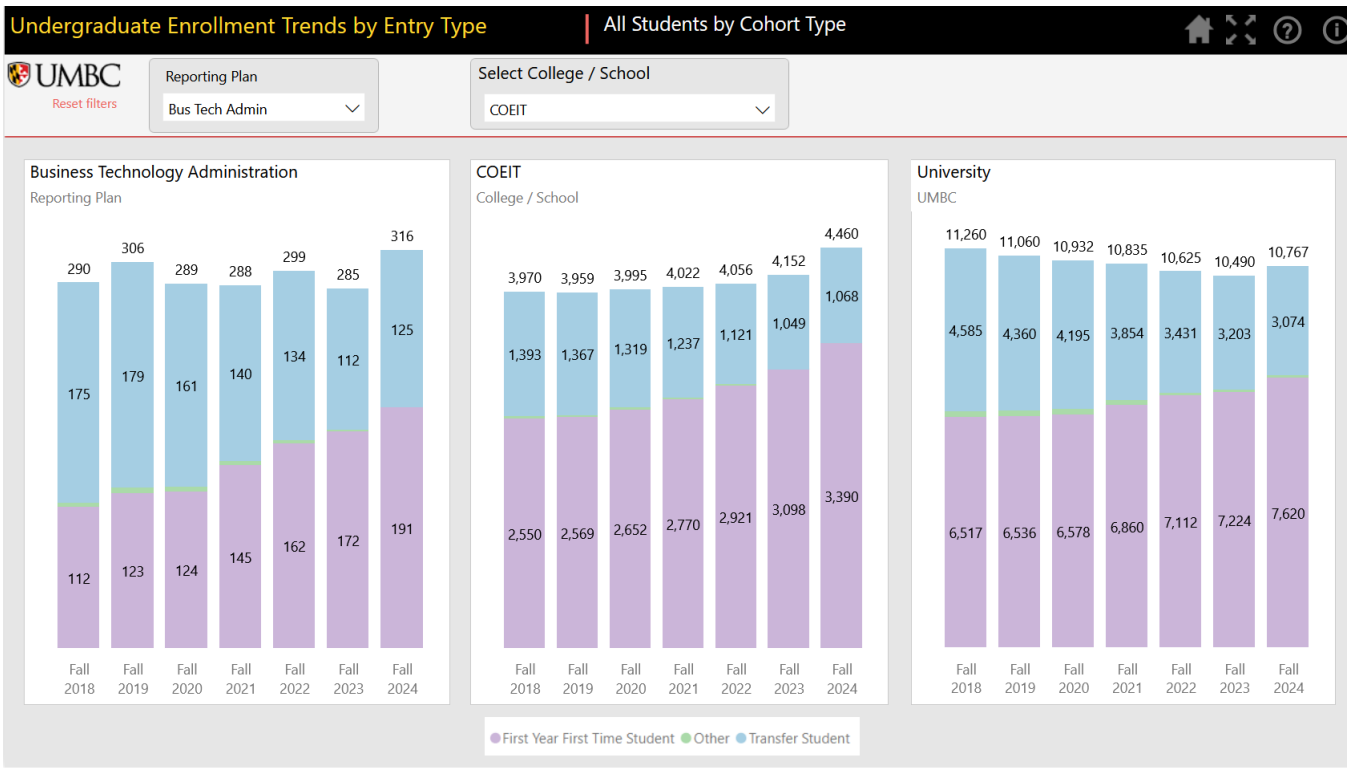
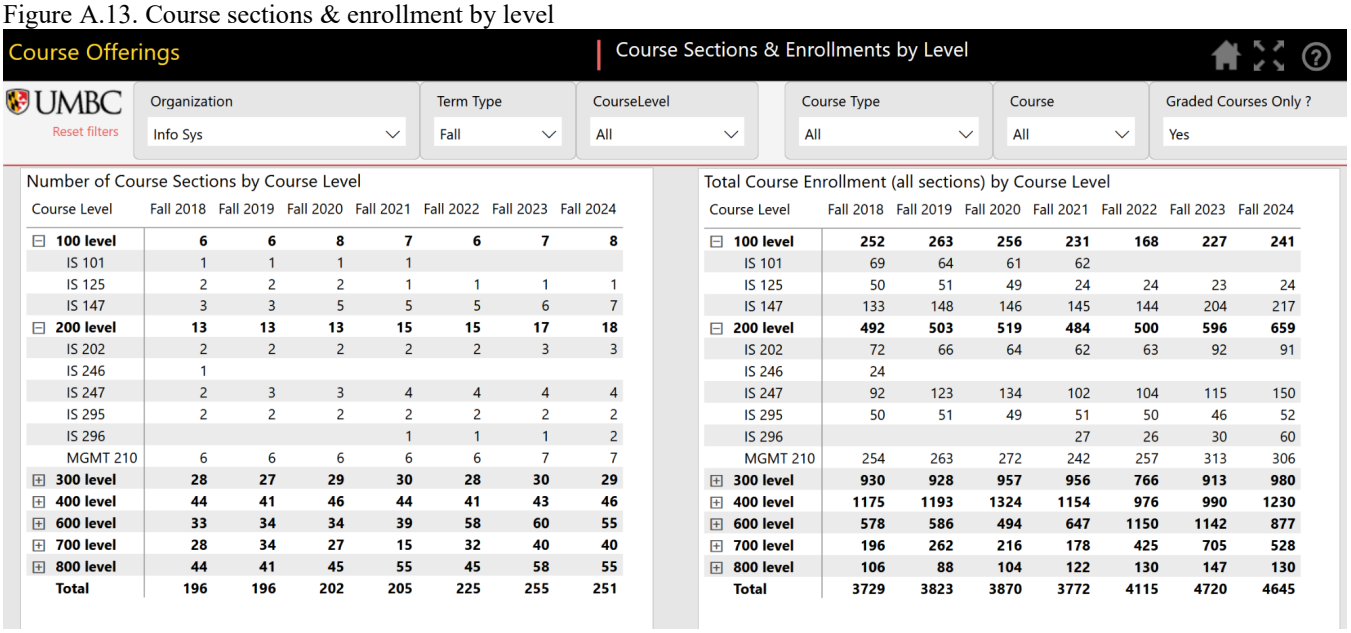


Figure A.13. Course sections & enrollment by level

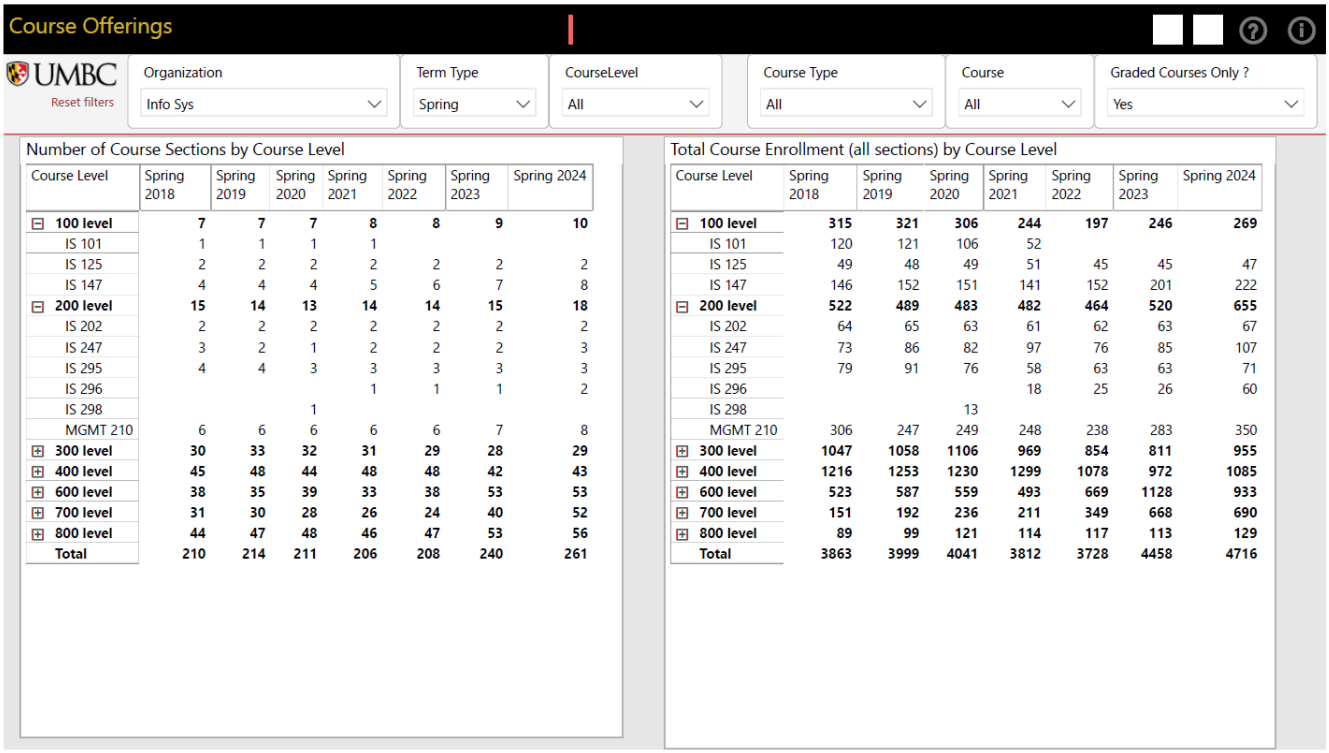


Number of Course Sections by Course Level

Course Level	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
100 level	**6**	**6**	**8**	**7**	**6**	**7**	**8**
IS 101	1	1	1	1			
IS 125	2	2	2	1	1	1	1
IS 147	3	3	5	5	5	6	7
200 level	**13**	**13**	**13**	**15**	**15**	**17**	**18**
IS 202	2	2	2	2	2	3	3
IS 246	1						
IS 247	2	3	3	4	4	4	4
IS 295	2	2	2	2	2	2	2
IS 296				1	1	1	2
MGMT 210	6	6	6	6	6	7	7
300 level	**28**	**27**	**29**	**30**	**28**	**30**	**29**
400 level	**44**	**41**	**46**	**44**	**41**	**43**	**46**
600 level	**33**	**34**	**34**	**39**	**58**	**60**	**55**
700 level	**28**	**34**	**27**	**15**	**32**	**40**	**40**
800 level	**44**	**41**	**45**	**55**	**45**	**58**	**55**
Total	**196**	**196**	**202**	**205**	**225**	**255**	**251**

Total Course Enrollment (all sections) by Course Level

Course Level	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
100 level	**252**	**263**	**256**	**231**	**168**	**227**	**241**
IS 101	69	64	61	62			
IS 125	50	51	49	24	24	23	24
IS 147	133	148	146	145	144	204	217
200 level	**492**	**503**	**519**	**484**	**500**	**596**	**659**
IS 202	72	66	64	62	63	92	91
IS 246	24						
IS 247	92	123	134	102	104	115	150
IS 295	50	51	49	51	50	46	52
IS 296				27	26	30	60
MGMT 210	254	263	272	242	257	313	306
300 level	**930**	**928**	**957**	**956**	**766**	**913**	**980**
400 level	**1175**	**1193**	**1324**	**1154**	**976**	**990**	**1230**
600 level	**578**	**586**	**494**	**647**	**1150**	**1142**	**877**
700 level	**196**	**262**	**216**	**178**	**425**	**705**	**528**
800 level	**106**	**88**	**104**	**122**	**130**	**147**	**130**
Total	**3729**	**3823**	**3870**	**3772**	**4115**	**4720**	**4645**



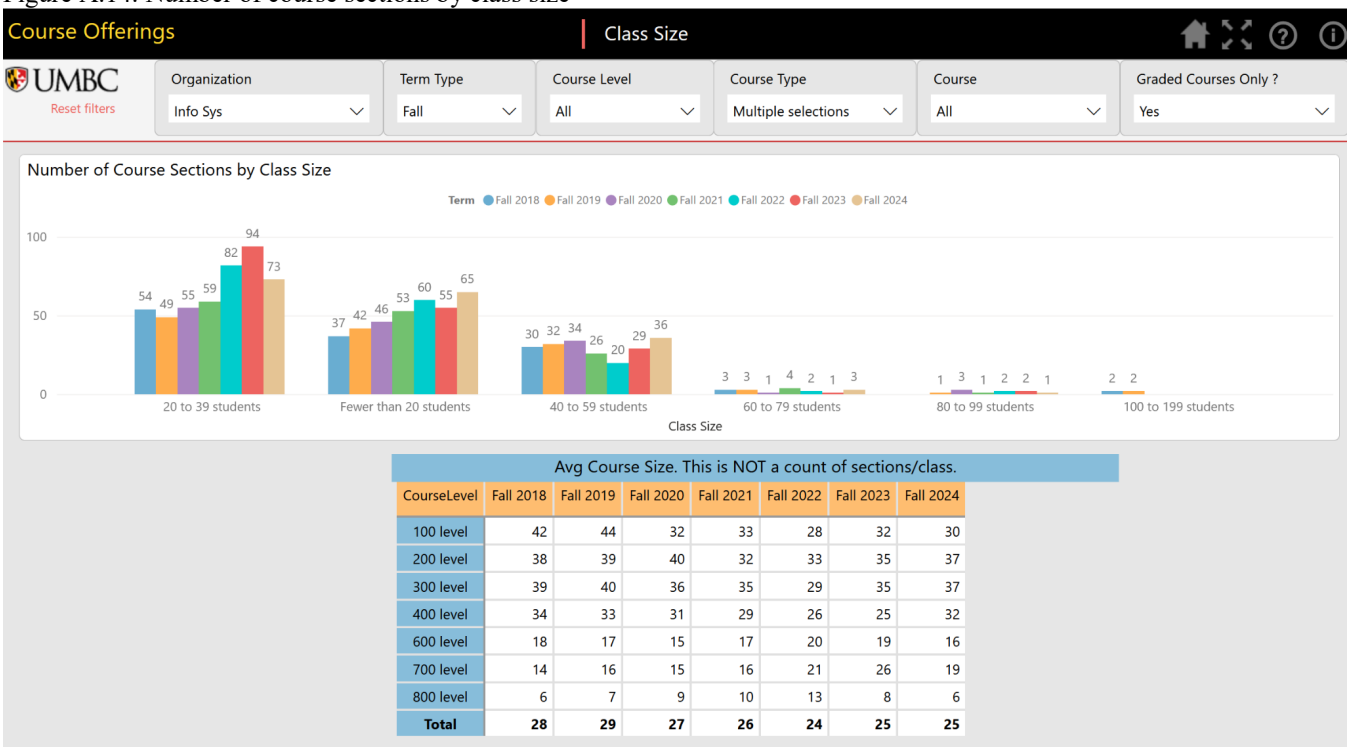
Number of Course Sections by Course Level

Course Level	Spring 2018	Spring 2019	Spring 2020	Spring 2021	Spring 2022	Spring 2023	Spring 2024
100 level	**7**	**7**	**7**	**8**	**8**	**9**	**10**
IS 101	1	1	1	1			
IS 125	2	2	2	2	2	2	2
IS 147	4	4	4	5	6	7	8
200 level	**15**	**14**	**13**	**14**	**14**	**15**	**18**
IS 202	2	2	2	2	2	2	2
IS 247	3	2	1	2	2	2	3
IS 295	4	4	3	3	3	3	3
IS 296				1	1	1	2
IS 298			1				
MGMT 210	6	6	6	6	6	7	8
300 level	**30**	**33**	**32**	**31**	**29**	**28**	**29**
400 level	**45**	**48**	**44**	**48**	**48**	**42**	**43**
600 level	**38**	**35**	**39**	**33**	**38**	**53**	**53**
700 level	**31**	**30**	**28**	**26**	**24**	**40**	**52**
800 level	**44**	**47**	**48**	**46**	**47**	**53**	**56**
Total	**210**	**214**	**211**	**206**	**208**	**240**	**261**

Total Course Enrollment (all sections) by Course Level

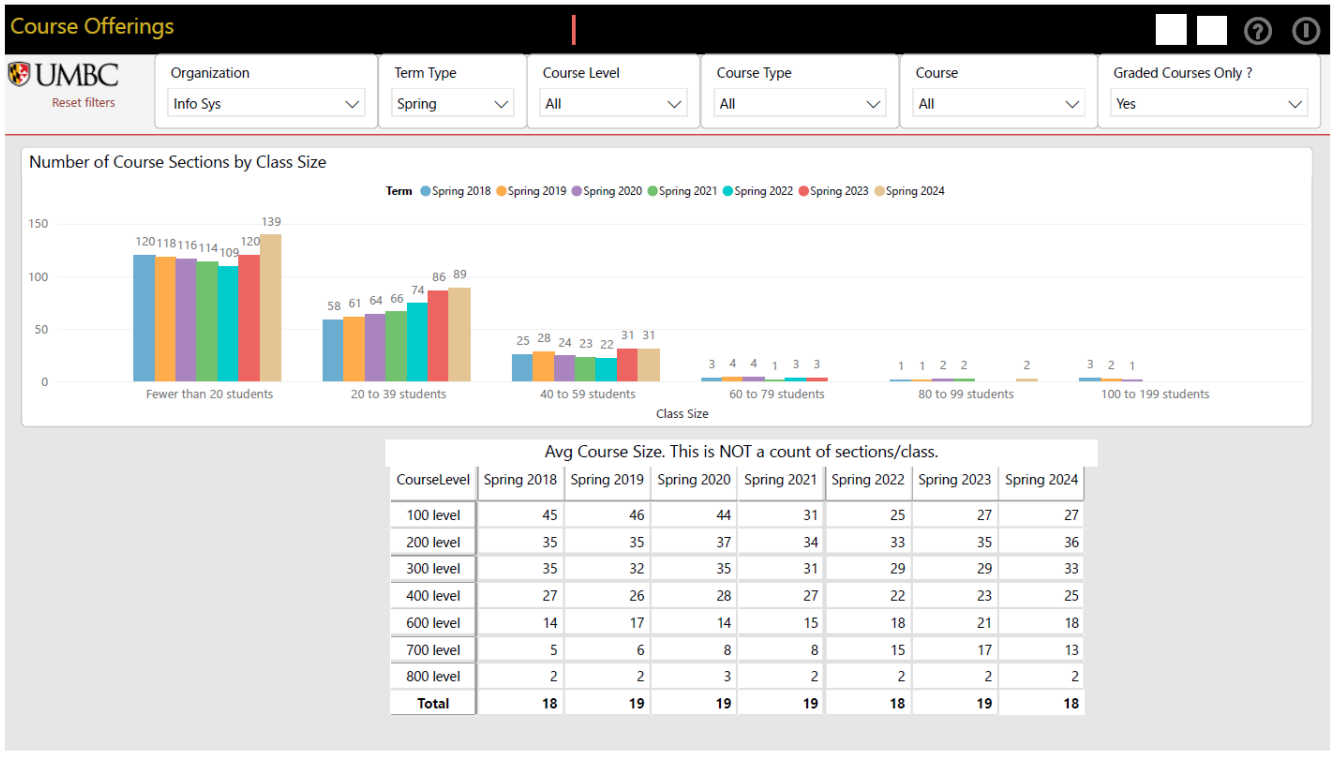
Course Level	Spring 2018	Spring 2019	Spring 2020	Spring 2021	Spring 2022	Spring 2023	Spring 2024
100 level	**315**	**321**	**306**	**244**	**197**	**246**	**269**
IS 101	120	121	106	52			
IS 125	49	48	49	51	45	45	47
IS 147	146	152	151	141	152	201	222
200 level	**522**	**489**	**483**	**482**	**464**	**520**	**655**
IS 202	64	65	63	61	62	63	67
IS 247	73	86	82	97	76	85	107
IS 295	79	91	76	58	63	63	71
IS 296				18	25	26	60
IS 298			13				
MGMT 210	306	247	249	248	238	283	350
300 level	**1047**	**1058**	**1106**	**969**	**854**	**811**	**955**
400 level	**1216**	**1253**	**1230**	**1299**	**1078**	**972**	**1085**
600 level	**523**	**587**	**559**	**493**	**669**	**1128**	**933**
700 level	**151**	**192**	**236**	**211**	**349**	**668**	**690**
800 level	**89**	**99**	**121**	**114**	**117**	**113**	**129**
Total	**3863**	**3999**	**4041**	**3812**	**3728**	**4458**	**4716**

Figure A.14. Number of course sections by class size



Avg Course Size. This is NOT a count of sections/class.

CourseLevel	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2024
100 level	42	44	32	33	28	32	30
200 level	38	39	40	32	33	35	37
300 level	39	40	36	35	29	35	37
400 level	34	33	31	29	26	25	32
600 level	18	17	15	17	20	19	16
700 level	14	16	15	16	21	26	19
800 level	6	7	9	10	13	8	6
Total	**28**	**29**	**27**	**26**	**24**	**25**	**25**



Avg Course Size. This is NOT a count of sections/class.

CourseLevel	Spring 2018	Spring 2019	Spring 2020	Spring 2021	Spring 2022	Spring 2023	Spring 2024
100 level	45	46	44	31	25	27	27
200 level	35	35	37	34	33	35	36
300 level	35	32	35	31	29	29	33
400 level	27	26	28	27	22	23	25
600 level	14	17	14	15	18	21	18
700 level	5	6	8	8	15	17	13
800 level	2	2	3	2	2	2	2
Total	**18**	**19**	**19**	**19**	**18**	**19**	**18**

Figure A.15. Course DFW rates in Fall 2018

Courses by DFW Rate and Average Grade

Top 20 Courses sorted by DFW Rate (High to Low) with at least 10 grade(s) given

Selected Parameters

DFW % vs Avg Key: = UMBC = Course = Section

Fall 2018	# Sect	DFW %	DFW % vs Avg	Grades	DFW	Avg Grade**	Avg Grade vs Avg
Full Selection		7.6%	10% 20% 30% 40% 50%	3263	247	3.16	1 2 3 4
Session: 1							
IS 147	3	40.6 %		133	54	2.54	
IS 247	2	28.3 %		92	26	2.53	
IS 451M	1	16.7 %		18	3	2.88	
IS 460	1	16.7 %		12	2	3.10	
IS 413	1	16.0 %		25	4	3.22	
IS 310	5	15.4 %		195	30	2.68	
IS 400	7	15.4 %		13	2	3.67	
IS 472	1	14.3 %		21	3	3.16	
IS 246	1	12.5 %		24	3	2.25	
IS 420	2	10.7 %		112	12	2.73	
IS 300	5	10.0 %		209	21	2.86	
IS 800	2	10.0 %		10	1	3.78	
IS 399	2	9.5 %		21	2	0.00	
IS 450	3	8.7 %		138	12	2.74	
IS 325	2	8.5 %		71	6	2.59	
HIT 664	1	8.3 %		12	1	4.00	
HIT 750	1	8.3 %		12	1	3.94	
IS 369	2	8.3 %		48	4	3.13	
IS 125	2	8.0 %		50	4	3.04	
HIT 663	1	7.7 %		13	1	3.94	
HIT 723	1	7.7 %		13	1	3.81	

Figure A.16 Course by DFW rate in Fall 2024

Courses by DFW Rate and Average Grade

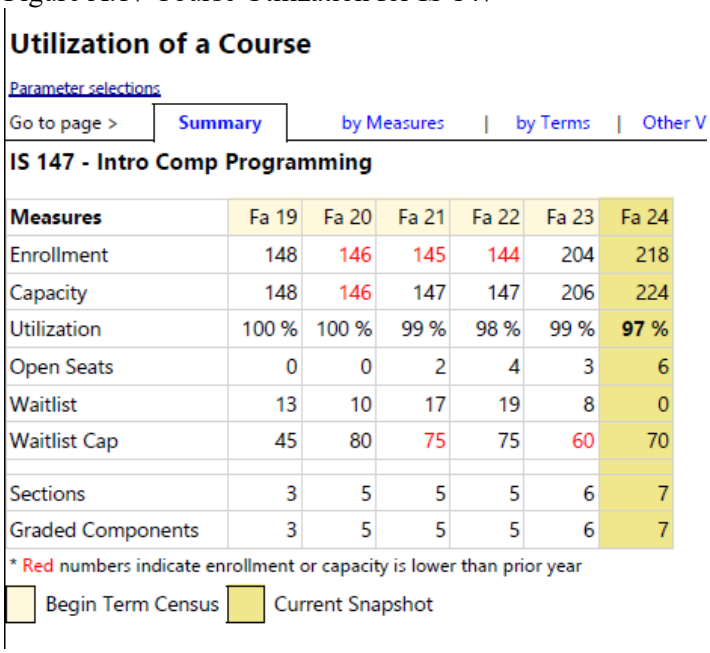
Top 20 Courses sorted by DFW Rate (High to Low) with at least 10 grade(s) given

Selected Parameters

DFW % vs Avg Key: = UMBC = Course = Section

Spring 2024	# Sect	DFW %	DFW % vs Avg	Grades	DFW	Avg Grade**	Avg Grade vs Avg
Full Selection		6.1%	10% 20% 30% 40% 50%	4179	254	3.36	1 2 3 4
Session: 1							
IS 607	1	30.0 %		10	3	3.51	
IS 202	2	22.4 %		67	15	2.66	
IS 471	1	21.1 %		19	4	2.79	
IS 295	3	19.7 %		71	14	2.85	
SENG 636	2	16.7 %		12	2	2.95	
IS 325	2	16.3 %		43	7	2.90	
IS 147	8	14.9 %		222	33	3.20	
IS 448	3	14.5 %		83	12	2.92	
IS 350	1	14.3 %		35	5	2.49	
IS 451	3	13.9 %		108	15	2.54	
IS 296	2	13.3 %		60	8	3.07	
IS 634	1	13.3 %		15	2	3.75	
IS 125	2	12.8 %		47	6	2.91	
IS 300	7	10.0 %		280	28	2.86	
IS 400	7	10.0 %		10	1	3.88	
IS 620	1	9.3 %		43	4	3.11	
IS 430	1	9.1 %		11	1	2.55	
IS 317	1	8.3 %		12	1	3.55	
IS 320	1	8.3 %		36	3	2.25	
IS 633	1	8.3 %		24	2	3.77	

Figure A.17 Course Utilization for IS 147



Utilization of a Course

Parameter selections

Go to page > **Summary** by Measures | by Terms | Other V

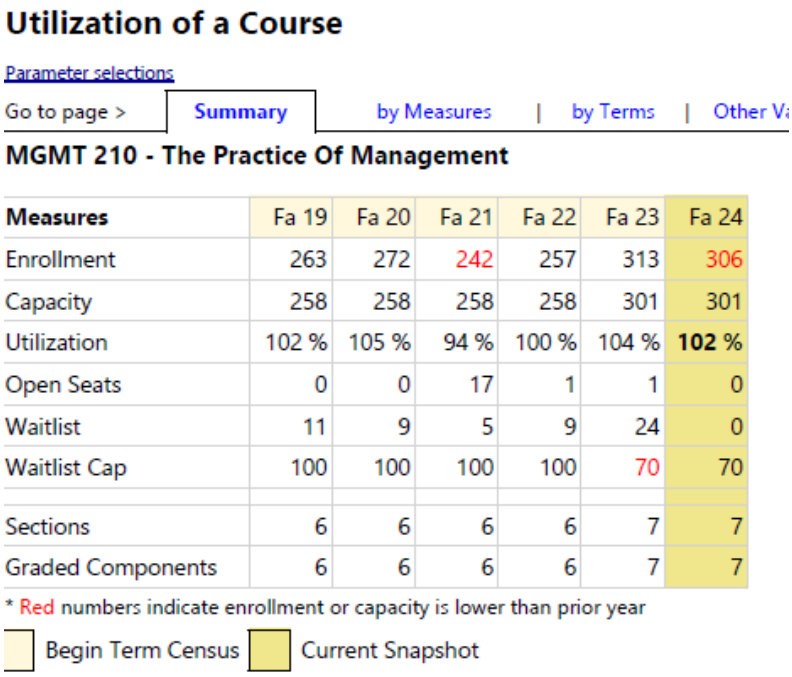
IS 147 - Intro Comp Programming

Measures	Fa 19	Fa 20	Fa 21	Fa 22	Fa 23	Fa 24
Enrollment	148	146	145	144	204	218
Capacity	148	146	147	147	206	224
Utilization	100 %	100 %	99 %	98 %	99 %	**97 %**
Open Seats	0	0	2	4	3	6
Waitlist	13	10	17	19	8	0
Waitlist Cap	45	80	75	75	60	70
Sections	3	5	5	5	6	7
Graded Components	3	5	5	5	6	7

* Red numbers indicate enrollment or capacity is lower than prior year

Begin Term Census Current Snapshot

Figure A.18 Course utilization for MGMT 210



Utilization of a Course

Parameter selections

Go to page > **Summary** by Measures | by Terms | Other V

MGMT 210 - The Practice Of Management

Measures	Fa 19	Fa 20	Fa 21	Fa 22	Fa 23	Fa 24
Enrollment	263	272	242	257	313	306
Capacity	258	258	258	258	301	301
Utilization	102 %	105 %	94 %	100 %	104 %	**102 %**
Open Seats	0	0	17	1	1	0
Waitlist	11	9	5	9	24	0
Waitlist Cap	100	100	100	100	70	70
Sections	6	6	6	6	7	7
Graded Components	6	6	6	6	7	7

* Red numbers indicate enrollment or capacity is lower than prior year

Begin Term Census Current Snapshot

Figure A.19 Time to degree for first year first time students



Figure A.20 Time to degree for new transfer students



Figure A.21. Time to degree for MS programs

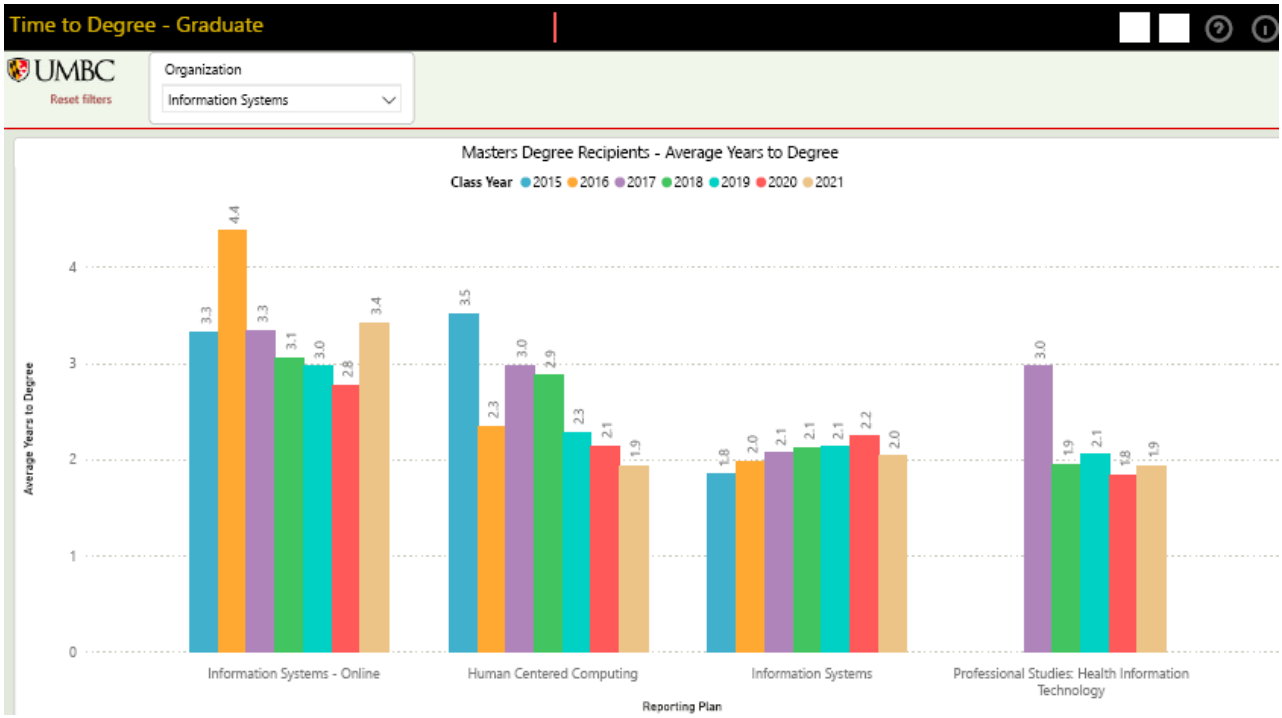


Figure A.22. Time to degree for PhD programs



Figure A.23 Number of faculty by rank

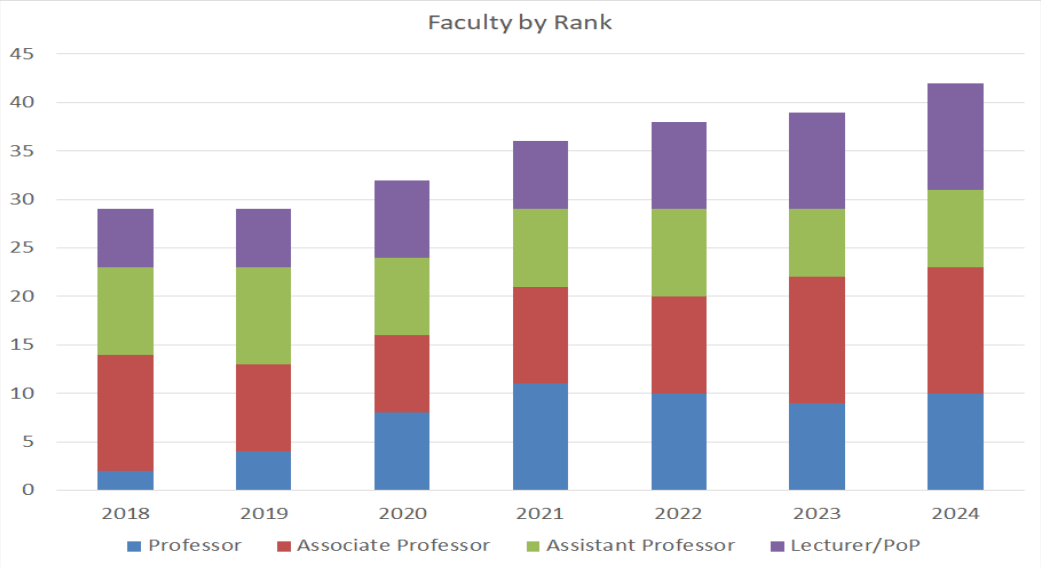


Figure A.24 the demographics of full time faculty

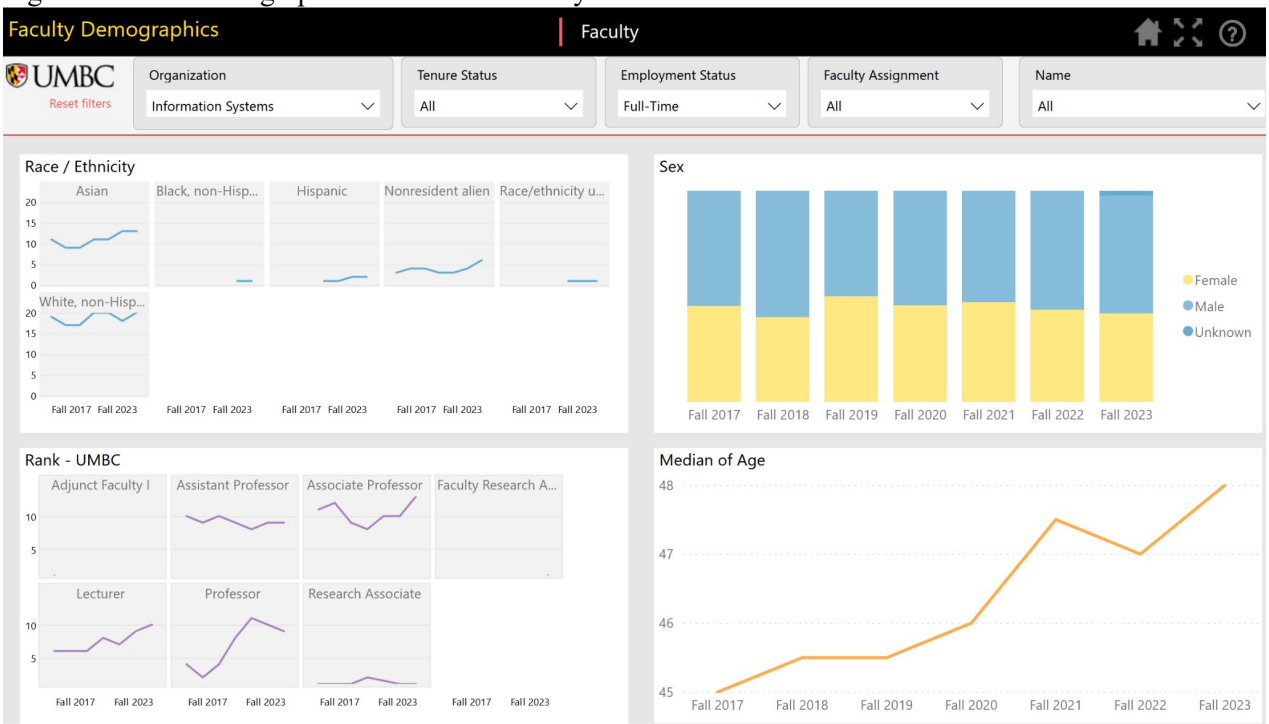


Figure A.25 IS student to teacher ratio



Figure A.26 COEIT student to teacher ratio



Figure A.27 UMBC student to teacher ratio

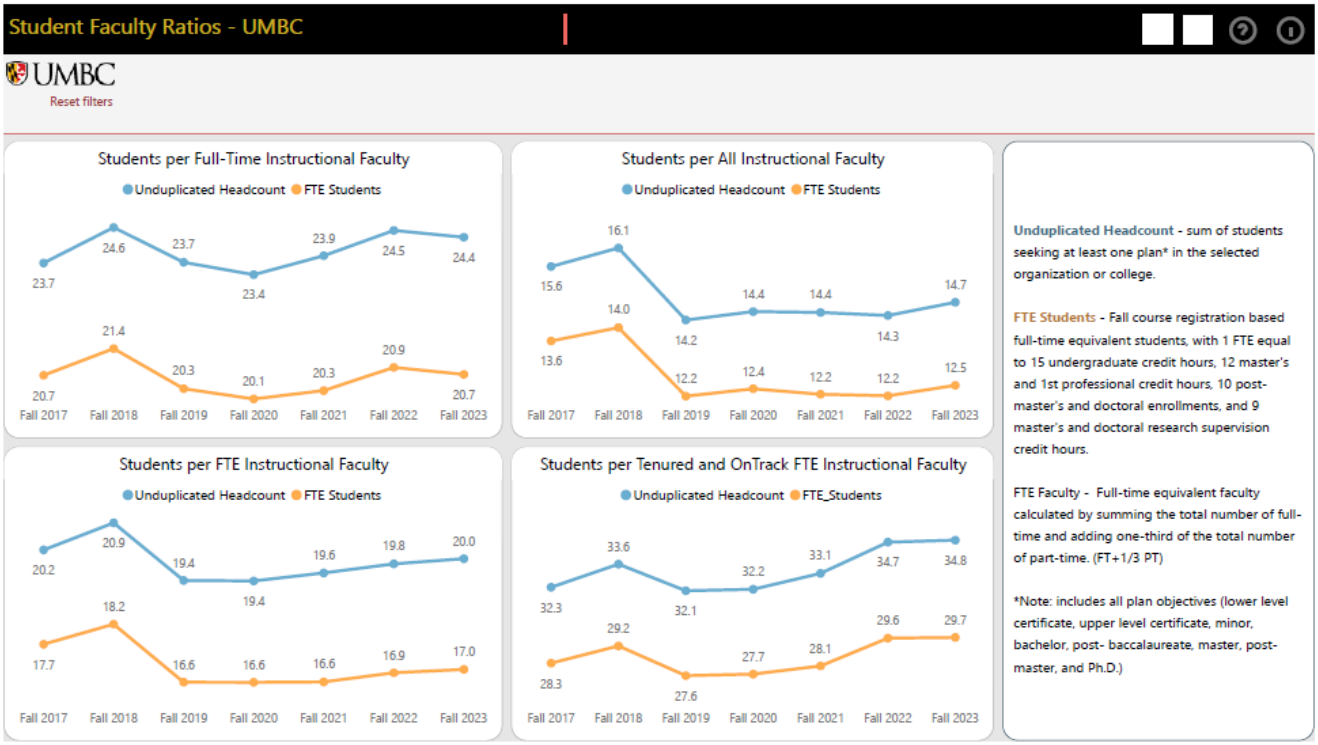


Figure A.28 Grants and Contracts Awarded as PI

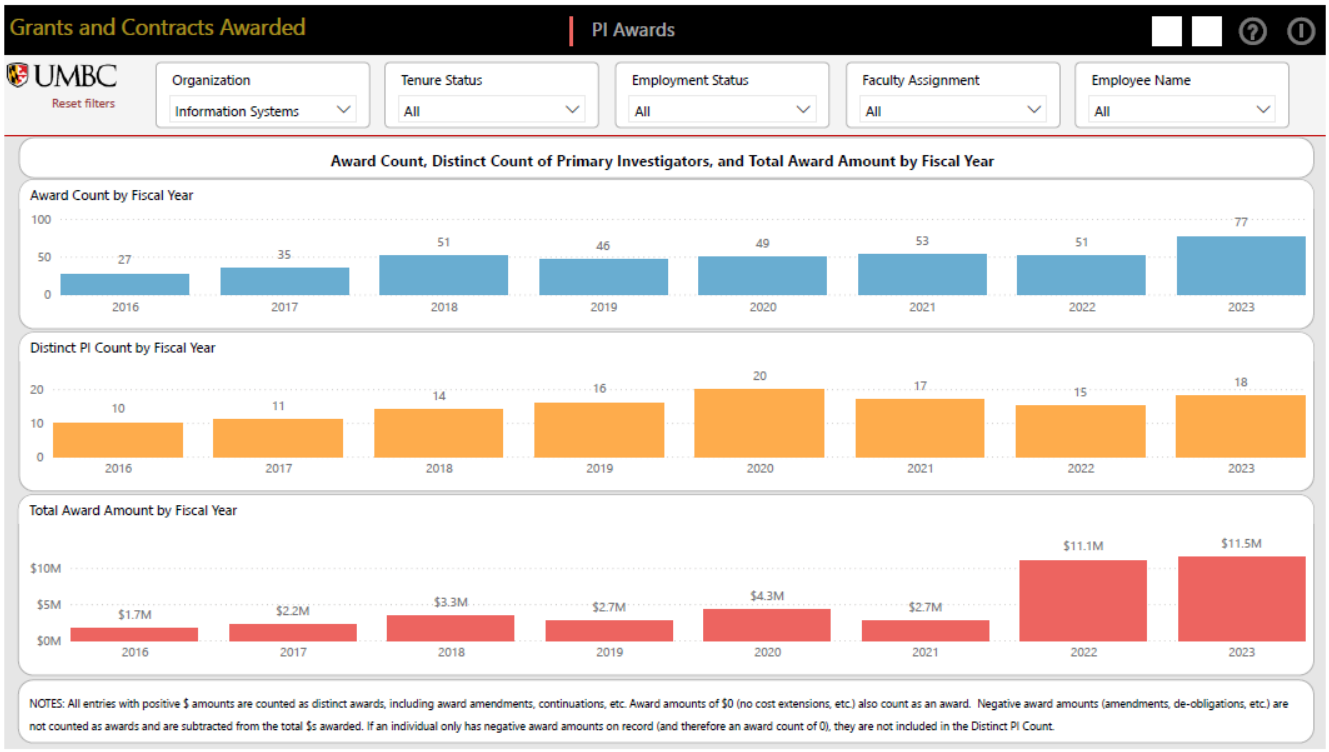


Figure A.29. Grants and Awarded Received as Co-PI

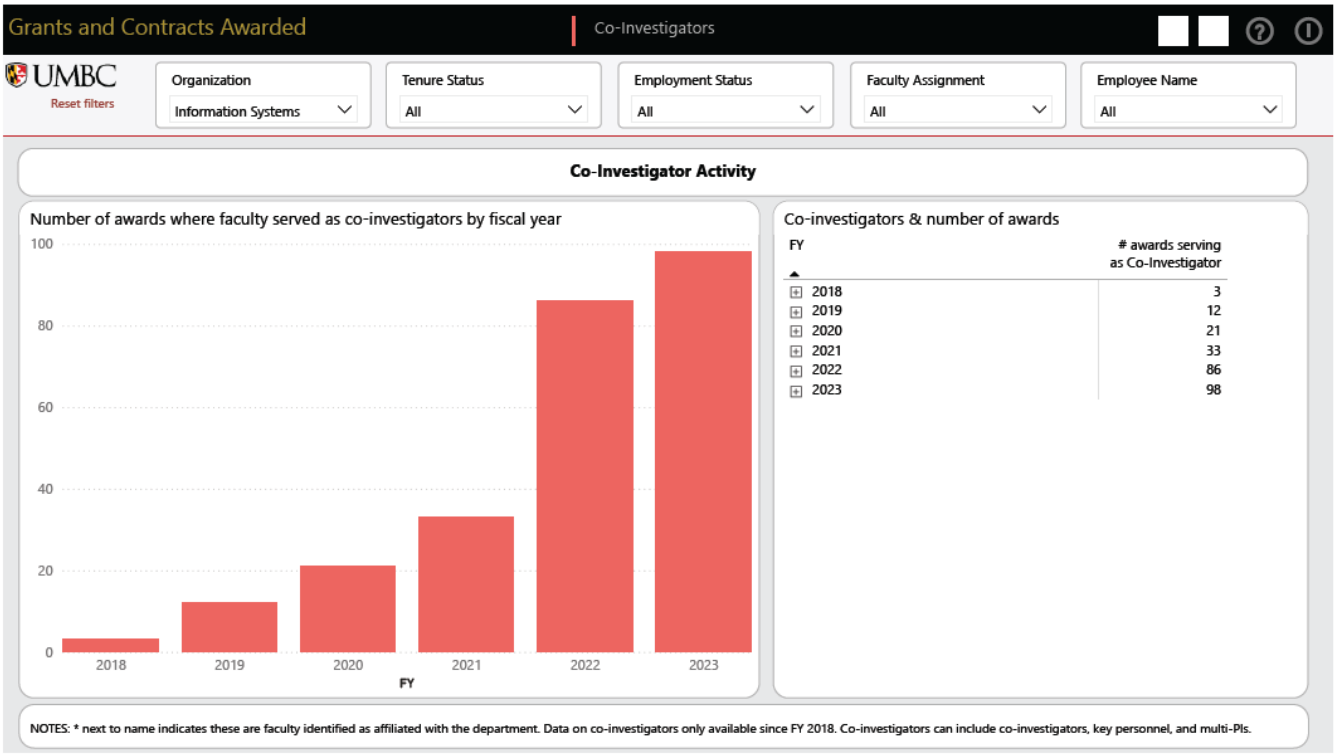


Figure A.30. Research expenditures of the IS department, iHARP and CARDS are two research centers led by IS faculty.

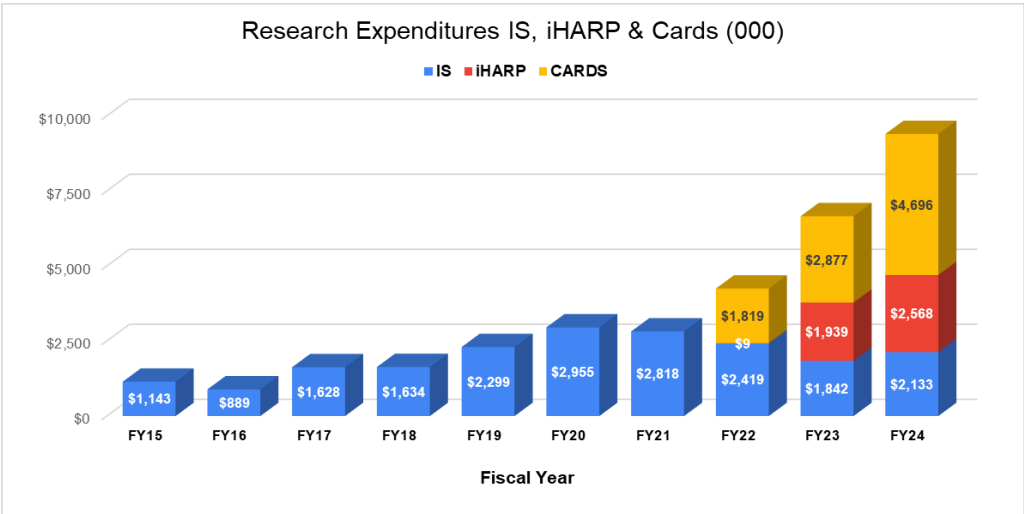


Figure A.31, Faculty scholarship activities

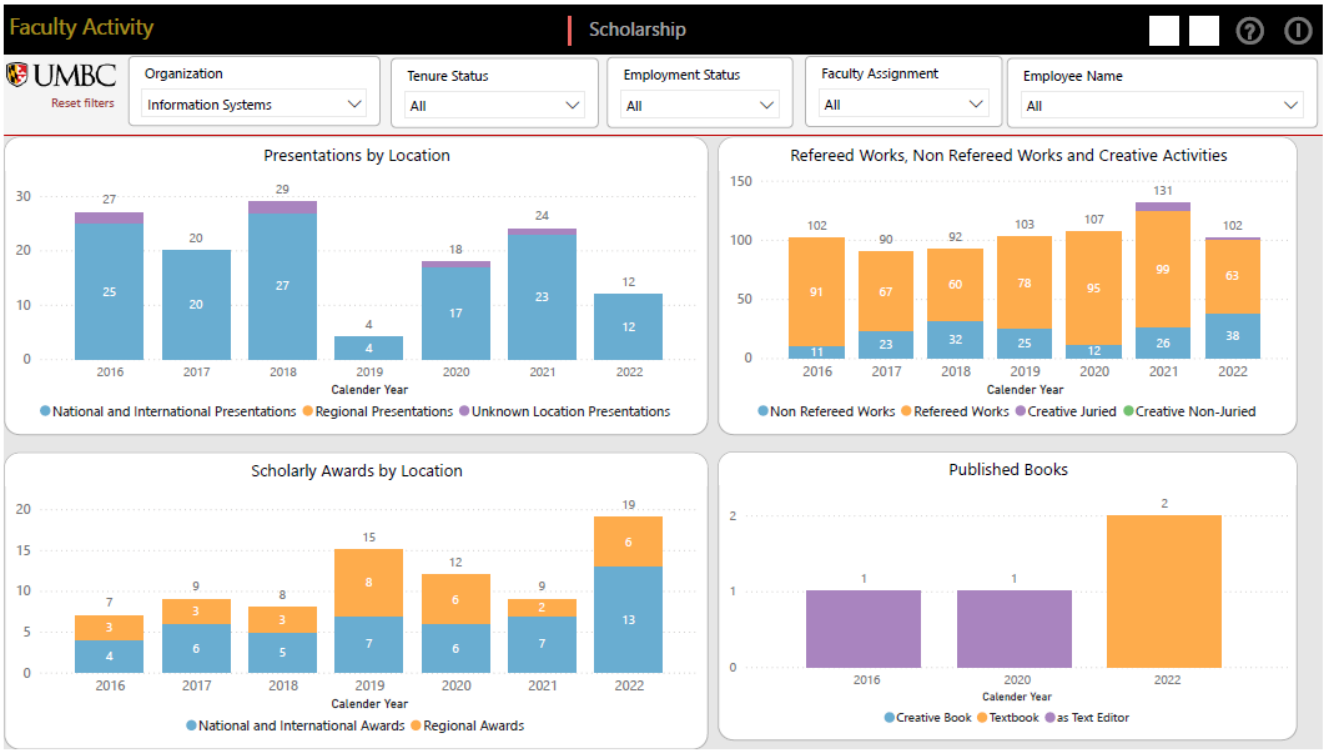


Figure A.32. Total credit hours by level

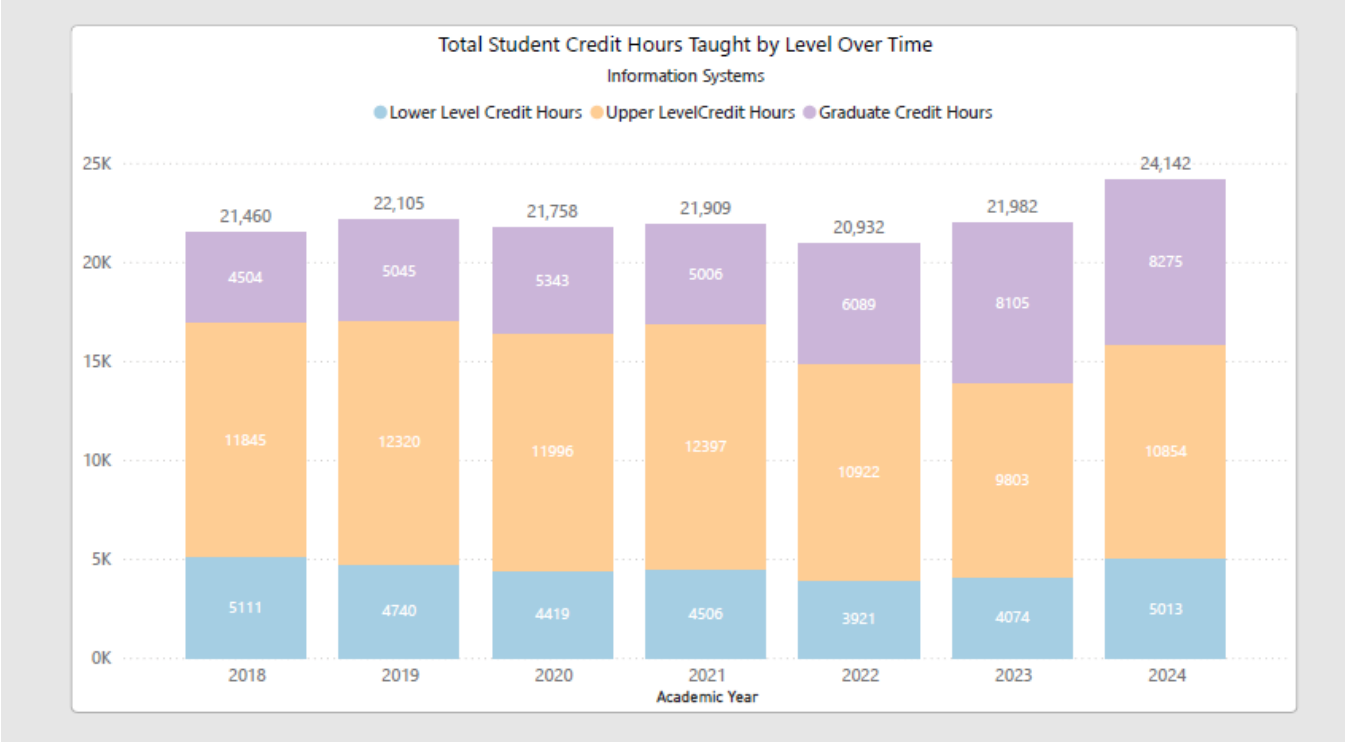


Figure A.33. Instructional activities by faculty category



Figure A.34. Average course units taught by faculty category

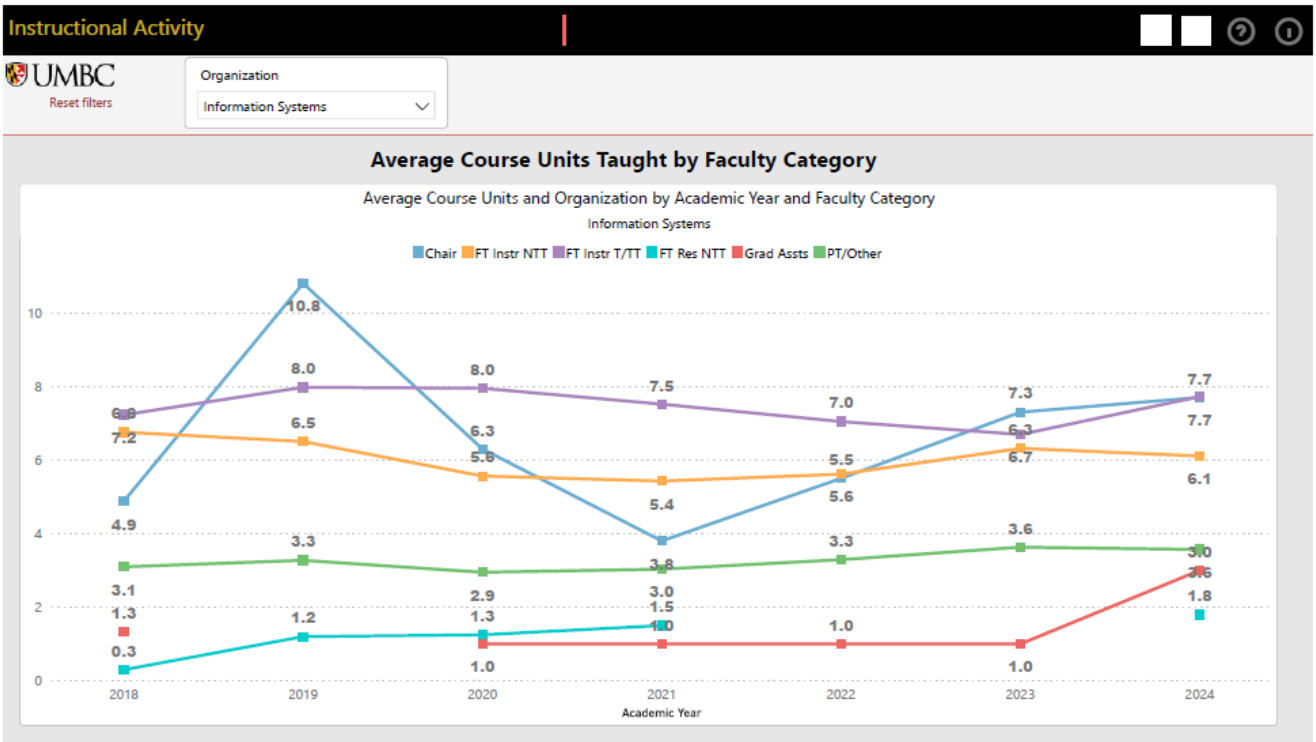


Figure A.35. Faculty service

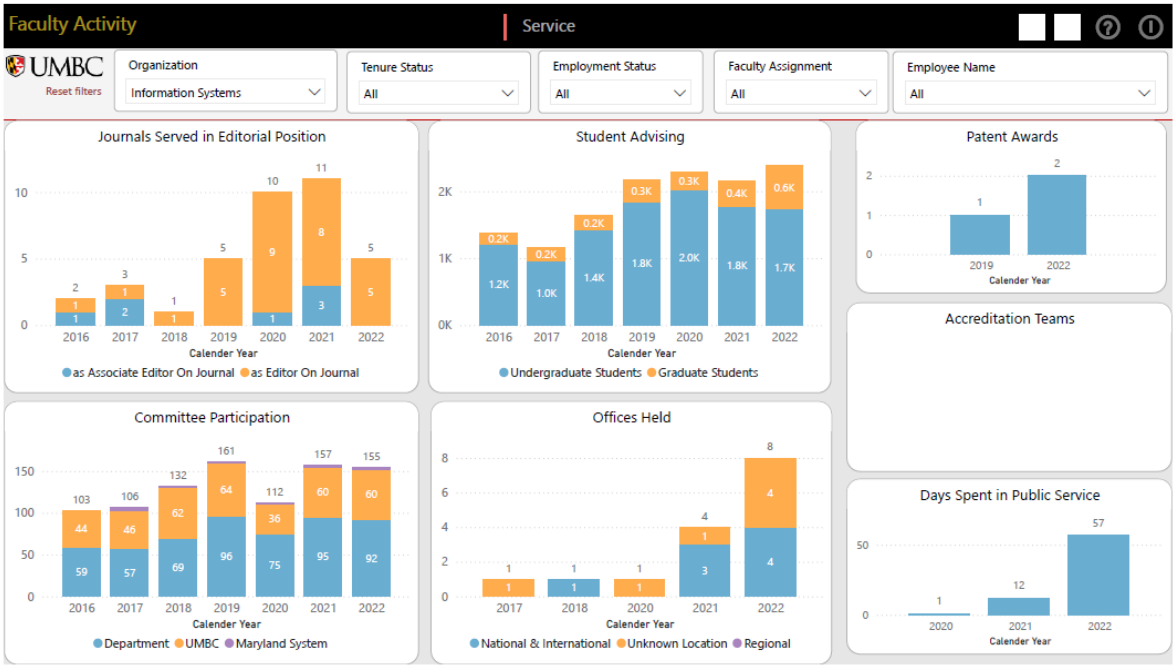


Figure A.36. Program Expenditures in 2023

Program Expenditures by Fund Type and Account

Organization - Information Systems

Fiscal Year / Expense Detail	1. General Instruction State Supported Expenditures	2. Non State Supported Instruction Expenditures	3. Research Expenditures - Restricted	4. Research Expenditures- Unrestricted	5. Other Expenditures	Total
2023	$7,062,183	$68,637	$1,758,152	$849,968	$148,117	$9,887,057
1. Salaries - Tenure or Tenured Track	$3,711,595		$37,177	$12,746		$3,761,518
Faculty Not Tenured On Track	$1,214,478			$12,746		$1,227,224
Faculty Tenured	$2,497,118		$37,177			$2,534,295
2. Salaries Other Faculty	$1,703,487	$1,500	$187,827	$164,125		$2,056,939
Faculty Not Tenured Not on Tr	$1,019,684		$30,570			$1,050,254
Faculty, Contractual	$683,803	$1,500	$157,257	$164,125		$1,006,684
3. Salaries - All Other	$1,303,491	$2,818	$680,421	$469,289	$139,422	$2,595,441
Exempt, Regular	$318,821		$46,189			$365,010
Fringe Benefits	$252,499	$118	$176,833	$144,572	$37,453	$611,476
Grad Assistant, Biweekly Sal	$546,430		$353,725	$250,993	$101,969	$1,253,117
Nonexempt Regular	$33,363					$33,363
NonExempt, Contingent I	$10,729		$1,950	$20,899		$33,579
Student, Hourly	$141,649	$2,700	$101,723	$52,824		$298,896
4. Other Expenditures	$343,609	$64,320	$852,727	$203,809	$8,695	$1,473,159
7020100				$1,000		$1,000
7020800	$1,595					$1,595
7021000			$675	$1,100		$1,775
7022100			$114,500	$900		$115,400
7030100	$69					$69
7040100	$276	$1,600		$820	$1,212	$3,909
7040200	$650	$2,944	$4,636	$13,712		$21,942
7040277		$2,435	$1,821	$1,465	$1,726	$7,446
7040300	$3,990	$8,164	$42,298	$18,155	$342	$72,950
7040330	$3,661	$3,988	$12,165	$20,247		$40,061
7080100	$195,159					$195,159
7080400	$51		$2,490	$1,101		$3,642
7080900	$1,139			$140		$1,279
7081100	$7,468	$169		$3,087		$10,724
7081120		$1,500				$1,500
7082100		$4,580	$16,430			$21,010
7082600	$58			$68		$126

Figure A.37. Department FY 2025 budget summary.

IS Funding Summary	10496	**Status**	
Account Balances as of	**10/31/2024**	**COMPLETED**	

Account	Account Type	Project #	Budget	Revenue	Expenses	Projection + Open Encumb	Balance Available
IS Operating	State		7,425,723	(4,265)	2,198,831	5,150,930	80,227
IFSM DRIF	Self Support	CV388850	198,764.13	(60,276.31)	31,893.16	40,537.00	186,610.28
IFSM Revolving	Self Support	CV390123	849,887.96	(481,519.00)	21,562.79	93,382.00	1,216,462.17
IFSM Startup	Self Support	STRTIFSM	82,182.64	(262,000.00)	0.00	0.00	344,182.64
IFS Online Masters	Self Support	CV390198	107,770.02	0.00	15,183.22	(15,183.22)	107,770.02
IFSM Department Fund	Foundation	05-20041	163,044.27	(340.00)	0.00	29,816.78	133,567.49
Final Balance FY 25			8,836,888	(808,401)	2,276,986	5,299,483	2,068,820
Planned intiatives (FY25)						1,271,421	(1,271,421)
Start Up Year 3 - Pending Funding						75,292	(75,292)
Final Balance After FY 25			8,836,888	(808,401)	2,276,986	4,028,062	722,107

Appendix B: Graduate Student Support

	Pre Review Data		Current Academic	Post Review Projections		
	Year2	Year1	Year (2024)	Year1	Year2	Year3
Research Assistants	**51**	**64**	**48**	**48**	**48**	**48**
Graduate Fellowships	**1**	**2**	**2**	**2**	**2**	**2**
and Dissertation Awards						
Teaching Assistants	**22**	**22**	**27**	**27**	**27**	**27**
Graders	**4**	**12**	**13**	**13**	**13**	**13**
TOTAL	**78**	**100**	**90**	**90**	**90**	**90**
* Information provided by the Graduate School						

Appendix B: Graduate Student Support

	Pre Review Data		Current Academic	Post Review Projections		
	Year2	Year1	Year (2024)	Year1	Year2	Year3
Research Assistants	**51**	**64**	**48**	**48**	**48**	**48**
Graduate Fellowships	**1**	**2**	**2**	**2**	**2**	**2**
and Dissertation Awards						
Teaching Assistants	**22**	**22**	**27**	**27**	**27**	**27**
Graders	**4**	**12**	**13**	**13**	**13**	**13**
TOTAL	**78**	**100**	**90**	**90**	**90**	**90**
* Information provided by the Graduate School						

Appendix C: Assessment of Student Learning Outcomes

A. Context: Assessment of Student Learning Outcomes

BS in Information Systems program (Richard)

Program SLOs for the BS in IS
A. Demonstrate knowledge for structured analysis and design in information systems B. Demonstrate decision making techniques using data science and AI C. Software development and engineering D. Demonstrate development of complex database applications E. Problem solving skills F. Effective communications skills

The courses that have been chosen to assess the BS in IS program are: **IS147**, **IS247, IS300, IS310, IS410, IS420, IS425, IS436, IS450, IS451, MGMT210.**

IS BS PSLOs

A. Demonstrate knowledge for structured analysis and design in information systems
B. Demonstrate decision making techniques using data science and AI
C. Software development and engineering
D. Demonstrate development of complex database applications
E. Problem solving skills
F. Effective communications skills

IS BS curricular Map

	Core Courses										
courses	IS 147	IS247	IS 300	IS310	IS410	IS420	IS425	IS436	IS450	IS451	MGMT210
UMBC FC											
FC1			2		2	3		4			2
FC2							2	2			2
FC3			2			3	2	4	2	3	2
FC4	1 / 2	3		3	3	4	4	4	4	4	2
FC5			1			2	2	3			3
IS BS PSLO											
A			1	1			1	4		3	1
B				1			4				1
C	1	2		2	1	3	3	2	2	3	
D					2	4					
E		1	1		2	4	4	4	2	3	2
F			2	2	2	2	2	4	2	2	2
Signature assignements			group project		project	project	project	group project		labs	

Figure C-1. Curriculum map of the BS program in Information Systems.

IS Core Course Objectives:

IS147: Introduction to Computer Programming

This course introduces the basic principles and techniques involved in computer programming and computing. Methods of algorithm development, program development, and program design are taught using the Java programming language. Upon completion of this course, the student will be able to:

- Write basic programs using concepts, such as variables, conditional logic, loops, functions, primitive data types, String object, single and multi-dimensional array operations.
- Understand objects, classes and their use in object-oriented programming
- Design and define classes to meet program objectives considering proper grouping of member variables, methods, and use of access specifiers.

- Apply standards for general code quality (e.g., minimal complexity, comments, indentation, modular structure, file naming, variable names, etc)
- Ability to plan out a program from a problem statement with basic tools such as algorithm description, flowcharts, and UML diagrams.
- Apply incremental approach for code development (e.g., verify initialization, data structures/types; write basic program functions and validate they are working before adding more functions; testing one capability at a time while commenting other capabilities out, etc.)
- Apply debugging techniques for troubleshooting code for programming assignments (e.g., read, understand and fix compiler errors for successful compilation; be able to walkthrough code/logic; write code to display values of interim points to track data structures, variables; build in validations, error checks in code)

IS247: Advanced Computer Programming
This second course in a sequence continues with advanced development of programming and problem-solving skills using Java. Topics include advanced Java programming concepts, data structures, searching, sorting, and an introduction to analyses of algorithms. Upon completion of this course, the student will be able to:

- Design and implement programs using advanced object-oriented programming concepts such as inheritance, interfaces, generics, exceptions, and abstract classes.
- Understand the basic concepts of data structures and related algorithms.
- Be familiar with specific advanced data structures such as stacks, lists, binary search trees, queues, sets, maps and graphs.
- Ability to design, implement, troubleshoot and test programs that apply advanced object-oriented techniques and abstract data structures.
- Gain an understanding of different ways of structuring, organizing, searching, sorting data and the context under which one approach might be preferable to another for a given problem or data set.
- Write clear, understandable, efficient, standardized, well-structured, and re-usable code.

IS300: Management of Information Systems
This course provides an overview of management information systems (MIS), including the development of transaction processing systems and their relationship to management reporting systems. Upon completion of this course, the student will be able to:

- Identify and explain fundamental information systems concepts, classes of systems, and terminology and describe organization structure, policy, culture, roles, management, and markets.
- Analyze how organizations are impacted by IS, including their effectiveness and competitive advantage.
- Analyze how organizations use technology effectively, including operating system and application software, information security, data and knowledge management (including relational databases), telecommunications and networking, E-business and E-commerce, Wireless, mobile computing, social computing, customer relationship management systems, supply chain management systems, business analytics, acquisition of information systems, SDLC, and artificial intelligence.
- Critique privacy and ethical considerations of managing data and technology.
- Analyze complex Information Systems problems through critical reasoning.
- Defend their ideas with evidence in front of peers and instructors.
- Present their ideas professionally, handling audience interaction appropriately. Students will recognize various sources for library research and learn how to use the resources at UMBC.
- Create clear, competent, correctly referenced text illustrated, at a minimum, through the assembly of an annotated bibliography on an IS topic.

IS310 Software and Hardware Concepts
This course covers topics related to computer systems with emphasis on the relationships between hardware architecture, system software and applications software. The architecture of processors and storage systems are explored, and the implications for systems software design are covered, along with the impact of hardware and

system software design on the development of application programs in a business environment. Upon completion of this course, the student will be able to:

- Understand the fundamental function of computers and their uses
- Identify computer hardware components and their functions
- Identify how data is managed in computers
- Describe various types of computer system and application software
- Demonstrate knowledge of computer connectivity and communications
- Describe how CPU processes data/instructions and controls operation of other devices
- Evaluate computer systems
- Analyze and discuss cybersecurity and the risks associated with the digital age
- Discuss evolution of artificial intelligence
- Describe advanced computer and architecture concepts

IS410 Introduction to Database Design

This is an introductory course to databases with topics covering fundamental concepts of database management systems, basic database design skills, Structured Query Language (SQL), and introduction to physical database design. Upon completion of this course, students will be able to:

- Appreciate the role of database management and the value of information within
- organizations.
- Understand the history of database models and current trends.
- Understand the concept of relational databases.
- Be able to develop Entity Relationship (ER) to represent database requirements.
- Be able to design a database to meet the business requirements for an
- organization.
- Know how to evaluate the design quality of a database using the rules of "database normalization".

IS420 Database Application Development

This is an advanced course on databases emphasizing hands-on coverage of database development in an entrepreneurship environment. Topics that will be covered in class include client/server databases, business logic in database applications, design and development of database applications using SQL, PL/SQL, and NoSQL. Upon completion of this course, students will be able to:

• Write non-trivial SQL queries.
• Design, and develop realistic database applications in the PL/SQL language.
• Learn about NoSQL databases, and Big Data environments.
• Experience entrepreneurship
    o Group formation, teamwork, and team dynamics
    o Entrepreneurship activities during all the phases of a group project

IS425 Decision Support Systems

Topics that will be covered in this class include an overview of the theoretical and organizational aspects of decision support systems (DSS), including descriptive and prescriptive decision-making concepts, individual and group decision support systems, and executive information systems. Upon completion of the course, students will be able to:

• Appreciate the role of decision support systems (DSS) within organizations.
• Understand the history of DSS and current trends.
• Understand the concept of Predictive and Prescriptive Analytics used in modern DSS.
• Understand the management of DCC within the end user environment.
• Understand the concept of AI/Machine Learning, Cloud/Big Data, Group Collaboration, and Social Networks as applied to modern DSS.
• Be able to design a DSS to meet an organization's business requirements.

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IS436 Structured System Analysis and Design
This is a capstone course involving advanced study and application of structured analysis and design methods throughout the system life cycle. Emphasis is given to the common approaches for gathering requirements, modeling, analyzing and designing information systems. Upon completion of this course, students will be able to:

- Define and analyze the concept of a system and what it means to develop and implement an information system in an organization.
- Identify and explain the major phases of the systems development life cycle.
- Evaluate techniques for identifying the information and processing needs of an organization.
- Produce structured systems specifications for a simple system.
- Use basic modeling tools for representing the analysis and the design of an information system.
- Design a system from the user's specifications including the user interface, hardware/software requirements, and system module structure.

IS450 Data Communication and Networks
This is an introductory course in data communications and networking. Topics covered include basic theory and technology of computer networking and networking protocols. Upon completion of this course, students will be able to;

- Define Computer Networks and the Internet
- Understand key network concepts-Packet Switching/Circuit Switching, Internet Service Provider (ISP), IP Stack and Protocol Layering, Hosts, Data Centers, Cables, Packet Lost, Traceroute, Throughput, Hops, OSI Layers, Encapsulation.
- Understand the different types of Cyber Attacks impacting the Network Traffic Flow.
- Be able to identify and analyze DNS Basics, and HTTP Delays, HTTP GETS, Electronic Mail and SMTP, P2P File Distribution Delays.
- Describe Network Layer Data Plane-Internet Checksum, Data Transfer, TCP Sequence and ACK, TCP, Round Trip Time (RTT), Transmission Control time (TCP) Congestion and Time Out, TCP Mux and Demux, Router Prefix Matching, Packet Scheduling, Subnet Addressing, Network Address Translation (NAT), IPV 6 Tunneling and Encapsulation
- Describe Network Layer Control Plane- Dijkstra Link State Algorithm, Bellman Ford Disaster Vector Algorithm.

IS451 Network Design and Management
The topics covered in this course include; implementation and administration of enterprise networking and distributed applications; case studies on middleware, network architecture for distributed applications; selected technologies to support enterprise systems. Upon completion of this course, students will be able to
• Understand distributed applications architecture and application layer protocols
• Understand large-scale LAN design issues
• Understand core network service (e.g., Network Management, Storage Networking, etc.)
• Understand virtual infrastructure and cloud computing architecture

BA in Business Technology Administration

Program SLOs for the BA in Business Technology Administration
Demonstrate leadership skills in business law and ethics
Develop management level problem-solving skills
Demonstrate ability to effectively use IT applications for better business decisions
Develop relevant business administration knowledge in state-of-the-art business models, tools and practices
Demonstrate evidence-based skills in business and operations management
Develop self-awareness and leadership skills throughout your professional career

The courses that have been chosen to assess the BA in Business Technology Administration program are: **IS300, MGMT210**.

	BTA Curriculum Map May 2024		Core Courses								Electives, Co-Curricular, Etc									Upper-Level Core		
	Program-Level SLOs	Alignment	IS 125 & Struct Des	IS 202 Analysis	IS 295 Business	IS 300 Sys	IS 303 Human-	IS 320 Business	IS 350 Comm	MGMT 210 of Mgmt	IS 296 Data	310 Resource	IS 325 Sci	360 Law	IS 369 Writing in	IS 403 Interface	MGMT 410 Supply Chain	MGMT 425 Marketing	MGMT 385 Ethics &	IS 438 Mgmt	IS 440 into Bus	MGMT 489 Mgmt in
1	skills, business law and	FC | AFC	1	1	2	2	2	2	3	1	1	3	1	3	3	1-2	3	3	3	4	3	4
2	solve problems in	FC | AFC		1-2		1-2	3	3		1			3			2				3	4	
3	applications for Business	FC | AFC	1	2	2	3	2	4	3			4	3			2					3	
4	Business Models and Tools	FC | AFC		2	1	2	4	4	3			4	2	2		3	4	4			4	
5	based Decision Making for	FC | AFC	1	1		1	1-2	3			1		4			1-2		4			1	4
6	learning ?						3	3								3						
	Signature Assignments		project	technical			of	project			analysis		Group			mobile/web						

Key: In this learning opportunity, students ...	
Do not focus on this outcome	
Gain fundamental knowledge and skills in this outcome	1
Practice and build their learning in this outcome	2
Complicate and refine their learning in this outcome	3
Demonstrate undergraduate-level proficiency in this learning outcome	4
Double lines indicate formal assessments	

Harrison, J. M. (2021). UMBC Curriculum Map Template (3rd ed.). Baltimore, MD: UMBC Faculty Development Center.

Figure C-2. Curriculum map of the BA program in Business Technology Administration.

Core BTA Course Objectives (from syllabus: December 8 version):

IS125: Information Systems Logic

This course introduces students to programming. Topics covered include logical program design, algorithm development and basic program implementation. Upon completion of this course students will be able to:

- Understand phases of program development
- Understand terminology and concepts of object oriented programming
- Ability to apply computational logic to the development of algorithm design
- Apply elements of interactive programming to design simple programs
- Understand basic data structures

IS202: Systems Analysis Methods

This course provides an overview of the system development life cycle, object oriented systems analysis and agile methodologies. Topics covered include system development tools, techniques and documentation. Upon completion of this course students will be able to:

- Understand and be able to apply the systems design process.
- Explore and conduct data gathering from a real-life company through interviews, questionnaires, and observations.
- Determine how feasibility studies can be conducted.
- Develop an understanding of system diagram skills, such as Data Flow Diagramming, Gantt Charts, PERT Diagrams, Entity Relationship Diagrams, Use Case Modeling, and Decision Tables.
- Apply the systems analysis process and project management.
- Apply skills in project analysis, problem solving, communication, and report writing.
- To critically assess and mitigate potential biases within the systems design process by integrating inclusive, equitable, and human centered design principles throughout all phases of systems analysis and development.

IS295: Intermediate Business Applications

This course covers business-oriented application programs, to include intermediate functions from typical productivity software found in many businesses and organizations. This course stresses the use of case studies to develop and implement solutions. Upon completion of this course students will be able to:

- Understand decision making concepts
- Demonstrate use of decision support applications to various business requirements
- Understand capabilities of various application programming software
- Appropriately incorporate the programs studied into work situations

IS300: Management of Information Systems
This course provides an overview of management information systems (MIS), including the development of transaction processing systems and their relationship to management reporting systems. Upon completion of this course, the student will be able to:

- Identify and explain fundamental information systems concepts, classes of systems, and terminology and describe organization structure, policy, culture, roles, management, and markets.
- Analyze how organizations are impacted by IS, including their effectiveness and competitive advantage.
- Analyze how organizations use technology effectively, including operating system and application software, information security, data and knowledge management (including relational databases), telecommunications and networking, E-business and E-commerce, Wireless, mobile computing, social computing, customer relationship management systems, supply chain management systems, business analytics, acquisition of information systems, SDLC, and artificial intelligence.
- Critique privacy and ethical considerations of managing data and technology.
- Analyze complex Information Systems problems through critical reasoning.
- Defend their ideas with evidence in front of peers and instructors.
- Present their ideas professionally, handling audience interaction appropriately. Students will recognize various sources for library research and learn how to use the resources.
- Create clear, competent, correctly referenced text illustrated, at a minimum, through the assembly of an annotated bibliography on an IS topic.

IS303: Fundamentals of Human Computer Interaction
This course provides an overview of human and design factors relevant to the design and use of information systems. Topics covered include contributions of psychology, sociology, computer science, and engineering to the design of human-centered computing. Emphasis is placed on human information processing concepts, interaction design approaches, and interactive computing technologies. Upon completion of this course, the student will be able to:

- Explain the role of Interaction Design, Technology, and Behavioral Science in the design of information systems.
- Apply human factors basic concepts to the critical design and assessment of physical objects and computer systems (e.g. affordances, mental models, mappings, feedback and visibility).
- Explain why constraints on perception, attention and memory are critical to a usable design.
- Understand and apply the human factors involved in computer-supported collaborative work, alternate input/output techniques, interaction design, and universal usability.

IS320: Advanced Business Applications
This course covers analysis, design and implementation of solutions to real-world business problems using advanced database and spreadsheet software commonly used in business today. Upon completion of this course, the student will be able to:

- Analyze real-world business problems.
- Use appropriate software applications to plan, design and implement business solutions
- Understand entrepreneurship concepts
- Design and develop decision models
- Appropriately incorporate models into various work situations.
- Understand and apply concepts for development of properly designed databases.
- Examine decision making in an entrepreneurial environment,

IS325 Introduction to Management Science
This course provides an overview of concepts and techniques of management science, including decision-making tools, mathematical programming, networks and operations management, and simulation. Upon completion of this course, the student will be able to:

- Explain decision sciences in managerial decision-making processes including making decisions under uncertainty

- Identify characteristics, terms, and concepts of various decision environments
- Explain the principles of model building
- Apply linear and integer models for common business applications such as portfolio selection, media selection, product mix, production planning, and transportation (distribution) problems
- Use graphical methods and computer software to solve linear programming problems
- Conduct "what if" analysis for changing business conditions to assess their managerial implications
- Analyze the performance of queuing (waiting lines) systems
- Explain the simulation process and its applications to different business areas
- Prepare reports for management to communicate findings and recommendations obtained applying the decision sciences approach

IS350: Business Communication Systems
This course provides an overview of business data communications for end users of computer networks. Topics covered include fundamentals of data and signals, telecommunications systems, wired and wireless media, error control, local-area networks, wide-area networks, the Internet and network security. Upon completion of this course, the student will be able to:

- Define computer networks and the internet
- Understand the features, operations, and limitations of different types of communications and network systems.
- Interact with system network professionals
- Identify and understand network layers and relevant communication protocols
- Analyze and assess network system security challenges

IS438: Project Management
This course covers the manner in which a system project is planned, schedules and controlled during the project life cycle. Topics covered include tools and techniques for management of cost, schedule, risk, quality, communications, resources, procurement and stakeholders. Upon completion of this course, the student will be able to:

- Collaborate with a real company on a project to explore how the company uses the project management techniques for their current projects.
- Understand project management's foundation, the triple constraint – working within the project's scope, budget, and timeline.
- Apply skills in managing a project within these knowledge areas:
    - Project integration management – project charter, net present value
    - Scope management – project requirements, scope statement, work breakdown structure, scope control
    - Schedule management – deliverables, timelines, resources, dependencies, Gantt charts, PERT charts, use of Microsoft Project
    - Cost management – planned costs, estimated costs, determined budget, controlled costs
    - Quality management – six sigma
    - Resource management – motivation theories, influence, effectiveness, emotional intelligence, leadership
    - Communications management – stakeholder communications analysis
    - Risk management – identify risk, rank, categorize, triggers, probability, status of each risk, cost of each risk, plan to address the risks
    - Procurement management – statement of work, RFP, RFQ, RFI
    - Stakeholder management – stakeholder register, expectations management matrix, issue log

IS440: Integrating technology into Business Processes
This course focuses on how information and decision support systems provide a critical enabler for business operations. Topics covered include analysis and management of support activities such as data and records management, electronic filing and retrieving systems, word processing, micro and reprographics and telecommunications. Upon completion of this course, the student will be able to:

- Understand the leadership issues involved in the digital economy, managing technologies, managing systems development, and systems used to support knowledge-based work
- Demonstrate their knowledge of the subject area in a problem-solving format test
- Apply their knowledge of the class in a semester-long project gathering information from a company, of their choosing, about everything thought in class
- Analyze management support activities
- Understand basic principles of human machine interfaces
- Appraise impact of current and future technological trends on data processing

MGMT210: The Practice of Management
This course focuses on the role of the manager in leading and controlling organizations ranging from small entrepreneurships to large corporate environments. Topics covered include management theories, corporate culture, goal setting and measuring performance. Upon completion of this course, the student will be able to:

- Explore current management challenges in both small and large businesses
- Understand entrepreneurship and its economic impact
- Understand and appreciate issues related to ethics, diversity, globalization, information technology and e-business and their impact on business today
- Apply kills in project analysis, problem solving, decision making, and communication.
- Demonstrate team problem solving and team dynamics.
- Demonstrate oral and written communication skills as required in the business community.

MGMT489: Seminar in Management in Business
This course explores the methods of revenue generation and supporting systems in technology focused businesses with a special emphasis on electronic commerce business development, maintenance and expansion. Both business to consumer and business to business aspects of management will be covered with an emphasis on products and services in electronic marketplaces. Upon completion of this course, the student will be able to:

- Understand revenue generation long-term strategies as well as short-term tactics of the top 16 global technology and e-commerce companies,
- Identify underlying technologies that run technology companies and e-commerce, both front end such as the company Web site and back end such as supply chain and inventory management
- Identify how the constantly-evolving Internet technologies and their corresponding capabilities can be implemented on business practices, specifically in today's popular large companies as well as mid-size companies
- Understand the challenges of establishing business-to-business (B2B) and business-to-customer (B2C) company presences
- Identify legal, social and behavioral issues that impact national and global company management and e-commerce
- Understand principles of customer service, selling services and goods, customer relationship management and consumer/business customer distinctions
- Understand non-profit business management and its online components

MS in Information Systems

Program SLOs for Oncampus MS in Information Systems

1. Demonstrate knowledge for structured analysis and design in information systems
2. Demonstrate decision making techniques using data science and AI
3. Software development and engineering
4. Demonstrate development of complex database applications
5. Problem solving skills
6. Effective communications skills

The courses that are used to assess this program at IS601, IS603, IS620, IS636, and IS733.

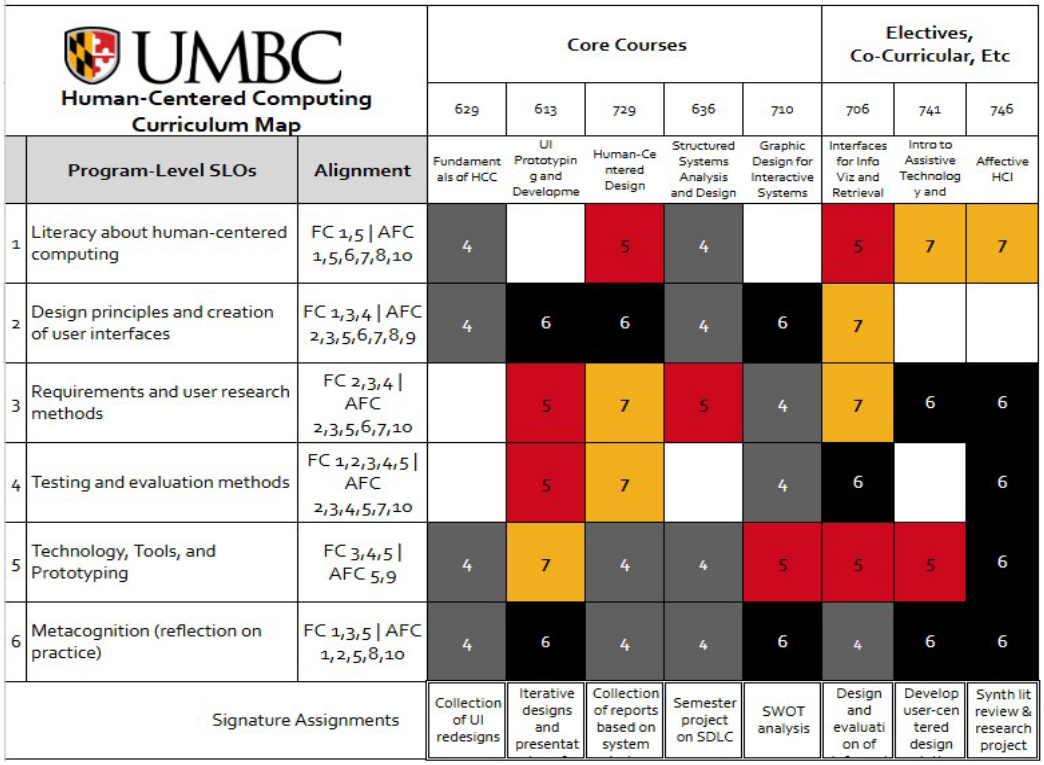
UMBC On campus MS IS Curriculum Map			Core Courses				Electives, Co-Curricular, Etc				Dissertation, Thesis, Comps, Portfolio			
			IS601	IS603	IS620	IS636	IS733							
	Program-Level SLOs	Alignment	Management Informati	Decision making support			Data mining				Add details here for summative work			
1	Demonstrate knowledge for structured analysis and design in information systems	FC1, 3, 4, 5 | AFC4, 5	5			7								
2	Demonstrate decision making techniques using data science and AI	FC1, 2, 3, 4, 5 | AFC 2, 6,	5	6	6		7							
3	Software development and engineering	FC4, 5 | AFC2, 3, 4		7		7								
4	Demonstrate development of complex database applications	FC1, 3, 4, 5 | AFC 4			7		7							
5	Problem solving skills	FC 3, 5 | AFC 2, 5, 9	6	7	7	7	7							
6	Effective communications skills	FC1 | AFC1, 2, 5	6	7	7	7	7							
	Signature Assignments		Term research paper	Group projects	Group projects	Group projects	Group projects							

Figure C-3. Curriculum map of MS in Information Systems (on campus)

MS in HCC

Program SLOs for the HCC MS program
1. Demonstrate literacy about human-centered computing. 2. Demonstrate understanding of and ability to apply design principles appropriately in the creation of user interfaces. 3. Demonstrate understanding of requirements and user research methods and the ability to apply the appropriate methods. 4. Demonstrate understanding of and ability to apply the appropriate testing and evaluation methods. 5. Demonstrate understanding of interactive technology, tools, and prototyping 6. Demonstrate metacognition through reflection on practice

The core courses that assess the HCC MS program are HCC629/613/636/710/729. The primary elective courses are HCC706/741/746.



UMBC
Human-Centered Computing Curriculum Map

	Program-Level SLOs	Alignment	Core Courses					Electives, Co-Curricular, Etc		
			629	613	729	636	710	706	741	746
			Fundamentals of HCC	UI Prototyping and Developme	Human-Centered Design	Structured Systems Analysis and Design	Graphic Design for Interactive Systems	Interfaces for Info Viz and Retrieval	Intro to Assistive Technology and	Affective HCI
1	Literacy about human-centered computing	FC 1,5 | AFC 1,5,6,7,8,10	4		5	4		5	7	7
2	Design principles and creation of user interfaces	FC 1,3,4 | AFC 2,3,5,6,7,8,9	4	6	6	4	6	7		
3	Requirements and user research methods	FC 2,3,4 | AFC 2,3,5,6,7,10		5	7	5	4	7	6	6
4	Testing and evaluation methods	FC 1,2,3,4,5 | AFC 2,3,4,5,7,10		5	7		4	6		6
5	Technology, Tools, and Prototyping	FC 3,4,5 | AFC 5,9	4	7	4	4	5	5	5	6
6	Metacognition (reflection on practice)	FC 1,3,5 | AFC 1,2,5,8,10	4	6	4	4	6	4	6	6
	Signature Assignments		Collection of UI redesigns	Iterative designs and presentat	Collection of reports based on system	Semester project on SDLC	SWOT analysis	Design and evaluation of	Develop user-centered design	Synth lit review & research project

Figure C-4. Curriculum map of MS in Human-Centered Computing

Online MS in Information Systems

Program SLOs for the Online MS in IS
1. Develop, maintain, manage, and apply information technology systems 2. Develop data science and artificial intelligence solutions for effective decision making 3. Develop secure information technology systems with rigorous cybersecurity protections 4. Develop user interfaces with high levels of user experience 5. Demonstrate problem-solving skills 6. Communicate effectively

		Fundamentals	Core Courses				Electives, Co-Curricular, Etc			
Online MS in IS Curriculum Map		607	631	632	633	634	659	665	675	677
Program-Level SLOs	**Alignment**	Information Systems Fundamentals: Programming and Databases	Management Information Systems	Networks	Database Management Systems	Structured Systems Analysis and Design	Principles of Cybersecurity	User Experience Research Methods	Data Science	Deep Learning
Develop, maintain, manage, and apply information technology systems	FC4, FC5 | AFC7			6	7	5		4		6
Develop data science and artificial intelligence solutions for effective decision making	FC4, FC5								7	7
Develop secure information technology systems with rigorous cybersecurity protections	FC4, FC5			4			7			
Develop user interfaces with high levels of user experience	FC4, FC5			7		5		6		
Demonstrate problem-solving skills	FC2, FC3 | AFC5	6	6	6	4	6	7	7	7	6
Communicate effectively	FC1 | AFC3, AFC4	7	7	7		7	7		7	
Signature Assignments			Group Project, Practical Connection assignment, and Graded Discussion Questions	Writing Technical paper, Graded Class discussions, Graded ProblemSets.	Create Simple DB, DML of DB, Create Complex DB, PL SQL	Group term project: Analysis and design of a solution to a business problem		Group term project: redesign of an existing web presence or application from an ID, usability, and UX perspective	Problem Solving: Logistic Regression. Ai and decision making: All. Communicate: All	weekly coding assignments using Pytorch. Exams

Key: In this course, students ...	
Do not focus on this outcome	
Gain fundamental knowledge and skills in this outcome not likely learned in undergraduate studies	4
Complicate and refine learning in this outcome	5
Cultivate proficiency in this outcome	6
Demonstrate graduate-level proficiency in this learning outcome and introduce original ideas	7
Double lines indicate formal assessments	

Figure C-5. Curriculum map of MS in Information Systems (online)

MPS in Health IT

Program SLOs for the MPS in Health IT
1. Demonstrate understanding of healthcare informatics, health information technology, and their intersection with broader healthcare, research, and business contexts. 2. Demonstrate understanding of legal, ethical, and administrative frameworks governing health IT, including key policies and regulations. 3. Demonstrate ability to apply data analytics techniques to support evidence-based decision making in healthcare. 4. Demonstrate ability to collaborate effectively with healthcare professionals, technologists, and business leaders to address health IT challenges. 5. Demonstrate understanding of intersection between technology, social, and behavioral science.

The core courses that have been chosen to assess the MPS in Health IT program are: HIT 658 and HIT 759 (a two part series), HIT 663, HIT 664, HIT 750, and HIT 760. Electives presented are HIT 640, 674, 698, 723, and 751.

UMBC Health IT MPS Curriculum Map			Core Courses (HIT)					Electives, Co-Curricular, Etc (HIT)					Dissertation, Thesis, Comps, Portfolio
			658	663	664	750	759	640	674	698	723	751	760
	Program-Level SLOs	Alignment	Health Informatics I	HIT Policy & Admin	HIT Law & Ethics	Health Data Analysis	Health Informatics II	HIT Text Processing	Process & QI with HIT	SDoH Through Informati	Public Health Informatics	Intro to Health Database	Capstone
1	Demonstrate understanding of healthcare informatics, health information technology, and their intersection with broader healthcare, research, and business contexts.	FC 4	4	5	5	6	6	5	5	5	5	5	7
2	Demonstrate understanding of legal, ethical, and administrative frameworks governing health IT, including key policies and regulations.	FC 3,5	4	6	6		5		5		5		7
3	Demonstrate ability to apply data analytics techniques to support evidence-based decision making in healthcare.	FC 2	4			6		6	5		5	6	7
4	Demonstrate ability to communicate and collaborate effectively with healthcare professionals, technologists, and business leaders to address health IT challenges.	FC 1 | AFC 3	4	5	5	5	5		5				7
5	Demonstrate understanding of intersection between technology, social, and behavioral science.	FC 2,4 | AFC 2	4				5			6	5		7
	Signature Assignments		Paper	Policy analysis	Topic paper, ethics project,	Paper, analysis	Paper, case study analyses	Analysis	QI project	Presentation	Paper, presentation	Lab, database project, presenta	Paper, slides, presentation

Key:	In this course, students …
	Do not focus on this outcome
4	Gain fundamental knowledge and skills in this outcome not likely learned in undergraduate studies
5	Complicate and refine learning in this outcome
6	Cultivate graduate-level proficiency in this outcome
7	Demonstrate graduate-level proficiency in this learning outcome and introduce original ideas
	Double lines indicate formal assessments

Figure C-6. Curriculum map of MPS in Health IT

MPS in Software Engineering

	Program SLOs for the MPS in Software Engineering (SENG)
SLO1	Implement strategy, policy, and standards regarding ethical decision making in software engineering.
SLO2	Design a software product solution using an iterative software process management to satisfy users' requirements and market needs while embodying the program vision that software systems first and foremost must be ethical, reliable, and beautiful.
SLO3	Design an appropriate and usable user interface paradigm for a software system.
SLO4	Apply fundamentals and emerging techniques from software testing to the design, implementation, and maintenance of a software application, device, or software system.
SLO5	Build as part of an engineering team a fully functional rapid prototype of a software application, device, or a minimally viable software intensive product (MVP).

SLO6	Lead in one or more of the following roles while working with a team of software engineers, domain experts, and business users: requirements analysis, design, architecture, implementation, testing, deployment, release management, software process management, product management, product maintenance, product retirement, or product migration of a software application, device, or software system leading to a software product that achieves the program vision that, "Software starting today must be conceived, designed, architected, built, and managed to be ethical, reliable, and beautiful".

The core course used to assess the MPS in Software Engineering Program is SENG 701, Capstone in Software Engineering, as core required capstone course taken in the last semester of the student's study. The curriculum map shows mappings for all core courses and selected electives including 5 core courses, capstone course, and 3 electives. The map includes core courses SENG 601 (Ethics in SWE), SENG 636 (Struct. Sys. Analysis & Design), SENG 645 (Advanced SWE), SENG 740 (Fund. Of SW Testing), ENMG 652 (Mgmt., Leadership, Comm.), and SENG 701 (Capstone in SWE). Elective courses include SENG 638 (SW Process Mngt.), HCC 629 (Human Centered Comp.), and SENG 691 (Special Topics in SWE).

UMBC

SENG MPS Curriculum Map

			Core Courses					Electives, Co-Curricular, Etc.			Dissertation, Thesis, Comps, Portfolio
			SENG 601	SENG 636	SENG 645	SENG 740	ENMG 652	SENG 638	HCC 629	SENG 691	SENG 701
	Program-Level SLOs	**Alignment**	Ethics in SWE	Struct. Sys. Anal. & Design	Advanced SWE	Fund. Of SW Testing	Mgmt., Leadership, Comm.	SW Process Mngt.	Human Centered Comp.	Special Topics in SWE	Capstone in SWE
1	Implement strategy, policy, and standards regarding ethical decision making in software engineering.	FC|AFC	4	5	6	5	6	6	5	5	7
2	Design a software product solution using an iterative software process management to satisfy users' requirements and market needs while embodying the program vision that software systems first and foremost must be ethical, reliable, and beautiful.	FC|AFC		5	6	5	4	6	5	6	7
3	Design an appropriate and usable user interface paradigm for a software system.	FC|AFC		5	6				6		7
4	Apply fundamentals and emerging techniques from software testing to the design, implementation, and maintenance of a software application, device, or software system.	FC|AFC			5	6				5	7
5	Build as part of an engineering team a fully functional rapid prototype of a software application, device, or a minimally viable software intensive product (MVP).	FC|AFC			7					6	7
6	Lead in one or more of the following roles while working with a team of software engineers, domain experts, and business users: requirements analysis, design, architecture, implementation, testing, deployment, release management, software process management, product management, product maintenance, product retirement, or product migration of a software application, device, or software system leading to a software product that achieves the program vision that, "Software starting today must be conceived, designed, architected, built, and managed to be ethical, reliable, and beautiful".	FC|AFC	4	5	6	5	5	6	5	6	7
	Signature Assignments		Paper Series: A series of 3 papers	Group term project: Analysis and design of a solution to a business problem	Group term project: semester long team project to build a SW product	Research paper: a semester-long research paper in groups of two	Case studies: 3 case studies	Term project: SW process improv. for a tri state company	Emerging developments in HCC	Term project: Analysis of a large OSS project	Individual capstone project: MVP SW intensive product

Key: In this course, students ...

Do not focus on this outcome	
Gain fundamental knowledge and skills in this outcome not likely learned in undergraduate studies	4
Complicate and refine learning in this outcome	5
Cultivate proficiency in this outcome	6
Demonstrate graduate-level proficiency in this learning outcome and introduce original ideas	7
Double lines indicate formal assessments	

Harrison, J. M. (2022). UMBC Graduate Curriculum Map Template (3rd ed.). Baltimore, MD: UMBC Faculty Development Center.

Figure C-7. Curriculum map of MPS in Software Engineering

Ph.D. in Information Systems

This program is assessed using IS804, IS805, IS809, IS801 (independent study), a Comprehensive exam, a dissertation proposal defense and a dissertation defense.

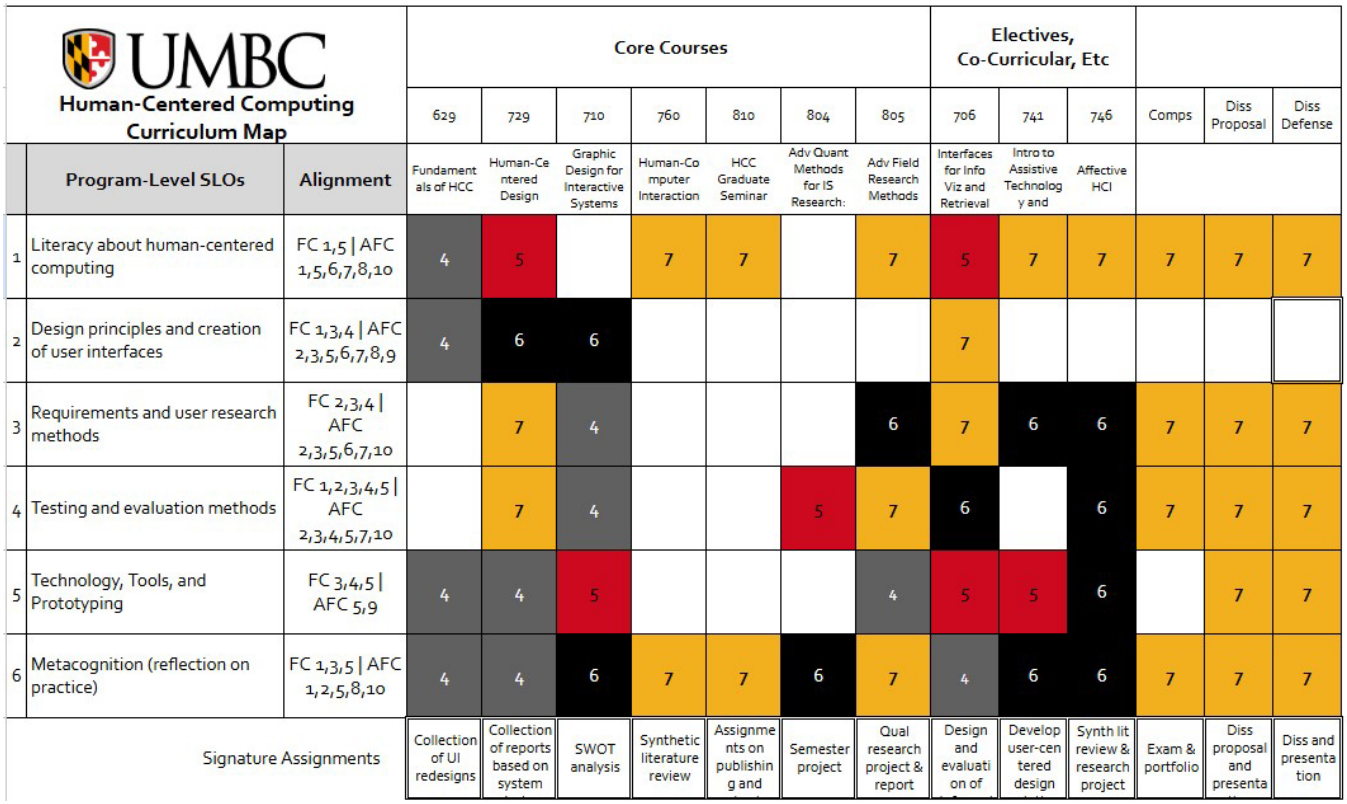
UMBC IS PHD Curriculum Map			Core Courses					Electives, Co-Curricular, Etc					Dissertation, Thesis, Comps, Portfolio			
			IS804	IS805	IS809	Ind study 1	Ind study 2	Area course 1	Area course 2	Area course 3	Area course 4	Area course 5	Comps	Diss proposal	Defense	
	Program-Level SLOs	Alignment	Quantitative research	Qualitative research	Computational research	Ind research	Ind research	Area-dependent electives (5 research areas)					Add details here fo		r summative work	
1	Demonstrate capability for research in a topic area	FC1, 2, 3, 4, 5 | AFC4, 5	6	6	6	7	7						7	7	7	
2	Demonstrate formulation of a research problem, its methodology, and preliminary results	FC1, 2, 3, 4, 5 | AFC 2, 6,	6	6	6	7	7						7	7	7	
3	Demonstrate how to conduct and publish research in outlets such as peer-reviewed journals or conferences	FC4, 5 | AFC2, 3, 4, 5, 6, 9				6	6							7	7	
4	Effective communications skills	FC1 | AFC1, 2, 5	7	7	7	7	7							7	7	
5																
	Signature Assignments		semester project	Article reviews,semester project	group research project, article presentations	research paper	research paper									

Figure C-8. Curriculum map of Ph.D. in Information Systems.

PhD in Human-Centered Computing

Program SLOs for the HCC PhD program
1. Demonstrate literacy about human-centered computing. 2. Demonstrate understanding of and ability to apply design principles appropriately in the creation of user interfaces. 3. Demonstrate understanding of requirements and user research methods and the ability to apply the appropriate methods. 4. Demonstrate understanding of and ability to apply the appropriate testing and evaluation methods. 5. Demonstrate understanding of interactive technology, tools, and prototyping 6. Demonstrate metacognition through reflection on practice.

The core courses that assess this program are HCC 629/710/729/760/810, IS804/805. The elective courses are the same as those for the HCC MS program: HCC706/741/746.



UMBC Human-Centered Computing Curriculum Map			Core Courses							Electives, Co-Curricular, Etc					
			629	729	710	760	810	804	805	706	741	746	Comps	Diss Proposal	Diss Defense
	Program-Level SLOs	Alignment	Fundamentals of HCC	Human-Centered Design	Graphic Design for Interactive Systems	Human-Computer Interaction	HCC Graduate Seminar	Adv Quant Methods for IS Research:	Adv Field Research Methods	Interfaces for Info Viz and Retrieval	Intro to Assistive Technology and	Affective HCI			
1	Literacy about human-centered computing	FC 1,5 | AFC 1,5,6,7,8,10	4	5		7	7		7	5	7	7	7	7	7
2	Design principles and creation of user interfaces	FC 1,3,4 | AFC 2,3,5,6,7,8,9	4	6	6					7					
3	Requirements and user research methods	FC 2,3,4 | AFC 2,3,5,6,7,10		7	4				6	7	6	6	7	7	7
4	Testing and evaluation methods	FC 1,2,3,4,5 | AFC 2,3,4,5,7,10		7	4			5	7	6		6	7	7	7
5	Technology, Tools, and Prototyping	FC 3,4,5 | AFC 5,9	4	4	5				4	5	5	6		7	7
6	Metacognition (reflection on practice)	FC 1,3,5 | AFC 1,2,5,8,10	4	4	6	7	7	6	7	4	6	6	7	7	7
	Signature Assignments		Collection of UI redesigns	Collection of reports based on system	SWOT analysis	Synthetic literature review	Assignments on publishing and	Semester project	Qual research project & report	Design and evaluation of	Develop user-centered design	Synth lit review & research project	Exam & portfolio	Diss proposal and presenta	Diss and presentation

Figure C-9. Curriculum map of Ph.D. in Human-Centered Computing

Appendix D: Sample Course Level Assessment Results

Assessment and Pedagogical Innovations in IS 296 Foundations of Data Science (GEP science non-lab)

This document provides an overview of the historical context of the IS 296, course structure, its alignment with learning objectives (specifically the GEP Functional Competency), the assessment strategies and examples of pedagogical innovations and system-level efforts. These initiatives are informed by both assessment data (mostly qualitative data) and literature on data science education.

Course Context

IS 296 was first introduced in Fall 2020 as part of an NSF IUSE-funded five-year project (NSF Award #1915714), in collaboration with the University of California, Berkeley, under the leadership of UMBC's Dr. Vandana Jeneja. Dr. Karen Chen started to teach this course in Spring 2022. The course has been offered every semester with an enrollment of around 20 students. Since Fall 2023, it has been designated as a General Education Program (GEP) course (Science Non-Lab) with two sections offered each semester, consistently reaching their full capacity of 30 students per section with students from a variety of majors across the campus. IS 296 also satisfies the programming requirement for the BTA major and the new Business Analytics certificate.

The curriculum for IS 296 is adapted from UC Berkeley's introductory data science course *Data 8*. It is designed as an entry level data science course with minimum prerequisites (no programming experience is required and algebra 1 for math). IS 296 aims to build students' competency in data programming and statistical inference at the same time. The concept of programming (e.g. for-loop, basic data structure) was introduced in the context of data science concepts and heavily rely on computing simulation to illustrate challenging concepts in statistical inferences, such as hypothesis testing and p-values.

Over the past four years (spanning nine semesters), the course has undergone multiple iterations of adaptation, revision, and realignment to better serve UMBC's student population and local contexts. We use Data 8 as a blueprint, and gradually develop it into a course with UMBC identities. Please refer to Janeja 2024, Bhalli 2024 and Wang 2023 for details of the project and adaptation process.

Beyond course-level modifications, coordinated efforts have been made to build a sustainable ecosystem for data science education and career development. This includes the creation of the *Data Science Scholar Program*, which combines near-peer mentoring with cross-disciplinary undergraduate research experiences. Please refer to the website (https://datasciencescholars.umbc.edu/) for details on the data science scholar program. Many Data Science Scholars are former IS 296 students who have advanced to roles as teaching or research fellows. Each semester, a subset of these scholars participates in panel discussions to share their experiences with current IS 296 students, inspiring them to apply to the Data Science Scholars Program in future semesters

IS 296 SLOs

List of the learning objectives for IS 296

LO1	Introduce concepts of data analytics, inferential and computational thinking
LO2	Learn manipulation of real data in a way that anchors students' understanding of both principles and practice of data science

LO3	Understand critical concepts and hands-on skills in computer programming and statistical inference
LO4	Perform hands-on analysis of real-world datasets, including economic data, document collections, geographical data, and social networks
LO5	Introduce social issues surrounding data analysis such as privacy and design
LO6	Learn programming in Python using Jupyter notebooks from a web browser

GEP Functional Competency (FC)

FC1: Oral and Written Communication
FC2: Scientific and Quantitative Reasoning
FC3: Critical Analysis and Reasoning
FC4: Technological Competency
FC5: Information Literacy

Assessment strategy

We use direct assessment (scores from labs, homework assignments and projects) to help us gauge students' mastery of learning objectives. The labs are auto-graded so that students can improve with feedback given by the graders. The homework assignments and projects are graded according to the rubrics. In addition, the instructors rely on a variety of in-class activities such as Poll Everywhere quiz and group works (e.g. data exploration, storytelling) to identify misconceptions and weakness in understanding; those information are used to dynamically adjust the teaching approaches and materials. This is critical due to the diverse backgrounds of students with respect to preparation of programming and quantitative reasoning.

We also use indirect/qualitative assessment from class observations, and teaching fellow's feedback as well as data from students' written reflections. We also leverage the data collected via student interview and focus group discussions, with support from the IUSE research team, under joint IRB between UCB and UMBC.

Alignment of Assessment with GEP FC

In this table, we list a few examples of assessment and their alignment with course learning objective and GEP functional competencies

Item	Course SLO	GEP FC	Average score (out of 100) Spring 24	Notes
Assignment 2: Programming problem solving	LO1, LO2, LO3, LO6	FC4	81	Apply table and array functions to write python codes to answer questions
Open Lab: assessing	LO1, LO2,LO3,	FC2 and FC3	86	Apply statistical reasoning and simulation techniques to

association using simulations	LO4, LO6			test hypothesis using data chosen by students and answer questions posed by students
Lab: AI detector	LO1, LO5	FC2, FC3 and FC4	84	Experiment, analyze and compare the results from various AI detector for generated text, and reflect on the ethical implications
Lab: Data Storyboarding	LO1, LO4	FC1, FC2, FC3	90	Students practice storyboarding techniques to assemble individual data insights into a compelling and coherent data story
Weekly Data story reading	LO1, LO4, LO5	FC1, FC2, FC3	92	Students are asked to craft a narrative of a given data visualization, asked to demonstrate understanding of quantitative information at both surface level ("show") and deep level ("tell").
Final exam - problem formulation	LO1, LO3, LO5	FC2 and FC3	78	Students asked to formulate a machine learning problem as lated to drop off prediction
Project - final deliverable	LO1, LO2, LO3, LO4, LO5, LO6	FC1, FC2, FC3, FC4 and FC5	80	Students asked to analyze a data source of their choices and present an analysis project in the format of presentation or video data stories.

Example Pedagogical Interventions

In this section, we give a few examples of pedagogical interventions we implemented in this course, as informed by the assessment data (mostly qualitative) and literature.

Addressing heterogeneous background in programming

Rationale/Background

With minimal programming prerequisites, one significant challenge is the diverse programming experience among students. While some students enter the class with strong foundations in Java and Python, the majority are encountering programming for the first time. This disparity presents substantial hurdles, particularly for novice learners. These challenges became evident through direct observations during early lab sessions, where struggles

were apparent, and were further corroborated by qualitative data from a focus group of 16 students, conducted as part of the IUSE project and detailed in the publication Janeja 2024. For example, one emerging theme from the study highlighted a dichotomy in students' perceptions of the difficulty level of programming assignments and the pace of the class. This divergence underscores the need for adaptive strategies to accommodate varied backgrounds. In addition, from the pre/post survey conducted with 14 students, we noted students with no prior programming experience and no statistics experience showed decrease in four factors of Social Cognitive Career Theory (SCCT) (i.e self-efficacy, identity, motivation and belonging uncertainty of students as a data scientist). as compared to students with some prior experience.

Intervention

1. Know thy students and leverage peer or near-peer support: To effectively support students, we implemented a pre-course survey to gather information on their prior programming experience. This allowed instructors to tailor their approach to meet diverse needs. Teaching Fellows, students who previously took the course, were introduced early on to provide near-peer support, which are known to be effective from literature. We also explored a buddy system, deliberately pairing students with weaker programming backgrounds with those more experienced. These pairs were encouraged to collaborate during class activities, sit together in lectures, assist each other in lab sessions, and form study groups. Outside of class, we facilitated connections through platforms like a class Discord server to promote ongoing collaboration and peer support. Students with strong programming backgrounds may also deepen their learning while providing support to peers.

2. Recognizing and Leveraging Students' Strengths Instructors actively identified students' strengths through pre-course surveys and informal conversations, encouraging them to leverage these talents in the course. This approach was particularly beneficial for students with weaker programming backgrounds, as it allowed them to build confidence and contribute meaningfully to learning. For instance, in one cohort, a student expressed concerns about their limited programming experience. Recognizing their talent for creative expression, I encouraged them to showcase their skills through data art, producing creative and innovative data visualizations. Similarly, another student who struggled with programming and data analysis was guided to analyze soccer data, drawing on his years of experience as a soccer player. Those personalized approaches not only enhanced their engagement but also demonstrated how their unique strengths can complement.

3. Low floor high ceiling To engage advanced learners, we offer open-ended project assignments and encourage participation in research opportunities through the Data Science Scholars Program. Assignments have been redesigned with optional bonus tasks, which provides additional opportunity for students seeking deeper exploration.

Outcomes

Feedback from the focus group (see Janeja 2024) and survey analysis (Bhalli 2024, Wang 2023) highlights the effectiveness of our multi-pronged strategies in fostering a positive learning environment. Students valued the peer support provided by teaching fellows, the opportunity to collaborate with peers from diverse backgrounds, the adaptability of open-ended project assignments, and the instructors' efforts to present well-structured, beginner-friendly materials. Although with those positive feedback, the challenge with students with limited programming experience is real. With the course now offered as a General Education Program (GEP) course, the instructional team continues to explore ways to make it more accessible. We have introduced user-friendly cheat sheets with code examples and use cases and offered additional practice sessions outside class. Additionally, we

are considering a short introductory programming course to serve as a bridge to IS 296, ensuring all students are well-prepared.

Developing Data-driven Communication Competency

Rationale/Background: ***Communication skills are a key functional competency in the General Education Program (GEP) requirements.*** In the context of data science, as a multidisciplinary domain aimed at solving real-world problems, effective communication is essential. Data scientists frequently interact with individuals from diverse backgrounds, including domain experts, the general public, professionals not trained in data science, and the research community. Employers consistently rank communication as one of the most critical skills for data scientists and analysts. Yet, these skills are often categorized as "soft skills" and taught separately from technical disciplines. This course challenges that divide by integrating communication into the core of data science practice.

Through various interventions, students will have the opportunity to develop and refine their data-driven communication (or data storytelling) skills. Students are asked to produce communication products in diverse formats, such as slideshows, videos, data art, or social media posts. These hands-on projects are designed to prepare them to present data insights effectively and tailor their messages to different audiences and contexts, while motivating them to hone-in the technical skills and quantitative reasoning.

Intervention

1. Data storytelling project: Crafting effective narratives with data

We began exploring the feasibility and effectiveness of embedding communication skills training into data science education through a data storytelling project in Spring 2022. During the initial semesters, we collaborated with digital storytelling (DST) interns from Montgomery College, a community college in Maryland. While these interns typically lacked data science backgrounds, they were well-trained in communication.

In the Spring 2022 implementation, we organized cross-training workshops where data science students taught DST interns technical skills learned in class, while the interns guided students on transforming ideas into effective communication products, such as videos. In subsequent semesters, DST students visited our class to deliver guest lectures. Additionally, we invited DST interns to act as data storytelling consultants, providing feedback on the communication effectiveness of data science students' intermediate products, particularly in making their messages accessible to a general audience.

In semesters without DST interns, we continued the data storytelling project while exploring alternative activities to support students in developing these essential skills. In Spring 2024 and Fall 2024, we introduced exercises focused on crafting data stories from insights presented as visualizations and tables. Observing students' struggles with data storytelling, we pilot small, regular sense-making activities called "data story reading exercises". These assignments tasked students with interpreting given visualizations and writing accompanying narratives. These were supplemented with in-class discussions led by instructors to help students identify key data visualization features, deepen their understanding of quantitative information, and enhance their ability to convey messages effectively.

Currently, we are developing an AI-supported tool (developed as part of the NSF Cyberlearning project) to provide students with direct feedback on the depth and accuracy of their narratives. This tool is being beta-tested during Fall 2024 as part of our ongoing efforts to improve data storytelling pedagogy.

2. The CDE Assignment: Enhancing Critical Thinking and Communication Skills

In Fall 2024, we piloted a new assignment format designed to enhance students' abilities to critically evaluate claims from public discourse and craft effective communication products based on research. The assignment, called **CDE (Communicate with Data and Evidence)**, tasked students with evaluating the validity of claims made in Joe Rogan's interview with Donald Trump regarding windmills and whale casualties, as well as California's drought issues. Students were required to submit detailed notes documenting their fact-finding and research process. Based on their findings, they created communication products tailored for dissemination on social media platforms. These could take the form of posts, memes, or short videos—formats that resonate with young audiences. To ensure their message's effectiveness, students were encouraged to test their products with friends and gather informal feedback. The assignment culminated in a peer-review session where students evaluated each other's work and voted on the most impactful communication products.

Outcome

For ***data storytelling projects***, we continuously gather students' feedback through end-of-semester reflections. A detailed analysis of students' reflection in Spring 2022 can be found in the publication **Chen 2023**. A summary of the findings are as follows

Toward the end of the course, students were asked to reflect on takeaways from the courses. Among the 18 submitted reflections, 14 (78%) explicitly mentioned the data storytelling project. Five students believed those skills learned through the projects could be readily applied to support, for example, the sense-making of the data they will encounter in real life. As mentioned by one student, "before (the project), I would just skim over graphs, but now I would stop and try to understand what is being said in the data." Yet another student speaks to the authenticity of the task by explaining that "the project had us break down datasets and get to apply code and do it the way data scientists do." Four students saw the immediate value of those skills to their future job. One of the students gave a vivid example of how he could use data storytelling skills to communicate effectively with his co-workers to help to improve their performance. Six students expressed positive sentiment toward the project experience using words such as "enjoy" and "like," and some are especially proud of the digital data stories they were able to make, as this required them to "break out of the comfort zone" of their discipline. It is worth mentioning that two of the students explicitly mentioned the value of this project in raising awareness of societal issues such as climate change and human well-being.

A preliminary analysis of the **CDE assignment** revealed that most students successfully identified flaws in argumentation through research using credible sources and explored diverse communication formats such as memes, comics, Twitter/X posts, and infographics. However, many struggled to craft concise and effective messages for social media, often being too verbose or failing to expose flawed reasoning with the constraints of the communication format. To address this, future iterations may involve communication experts to help design guides for creating impactful, platform-appropriate content.

Personal Informatics: Developing Data Competency Leveraging Students' Lived Experiences

Rationale/Background

The second part of the course focuses on building students' statistical reasoning using modern methods such as simulation, bootstrapping, and randomization. Students learn to draw conclusions using tools such as p-values and confidence intervals. In earlier versions of the course, students struggled with these abstract concepts, partly because the examples used were either disconnected from their experiences or catered specifically to Berkeley or West Coast contexts. We hypothesize that incorporating personally relevant data—such as self-collected data about their own lives—can enhance engagement and understanding by grounding abstract concepts in students' lived experiences. Additionally, this approach could empower students to ask meaningful questions about their data, thus opening an avenue for formation of positive habits that promote well-being and improve learning outcomes as college students.

Intervention

Starting in Spring 2023, we piloted a **personal informatics assignment**, initially as an optional extra-credit activity. At the beginning of the semester, students were encouraged to collect data about their life for seven weeks leading up to midterm. They had the freedom to choose the kind of data they collect and the data collection methods, such as spreadsheets, health trackers like Fitbit or Apple Watch, or (beginning Fall 2024) phone-based methods using the BeiWe server as part of the Hrabowski Innovation Fund (HIF) project. Post-midterm, students analyzed their data, or, with permission, data from classmates, through open labs designed to practice simulation methods and statistical reasoning. For example, one student hypothesized a link between exercise and study hours, she went on to identify patterns and used appropriate analytical techniques to test the association. These activities not only enhanced inferential reasoning but also allowed students to explore questions meaningful to them.

Outcome

During the last several semesters, students used various data collection techniques, from wearable sensors to manual recording, and tracked various activities. This list included time management (e.g., studying, viewing YouTube, social media use, screen time, reading, listening to audiobooks, video gaming, and artistic pursuits), wellness metrics (e.g., sleep patterns, exercise, caffeine intake), social interactions (e.g., conversations with friends or family), and emotional states.

We collect students' feedback as part of the post-course survey. Qualitative analysis of students' reflection reveals students' growth of data science knowledge and the emerging ideas of self-awareness and self-regulation as the result of analyzing their own data, even though those topics are not explicitly taught in the course. For example, one student commented, *"Collecting personal data was one of the interesting experience I had in this class. … This is an interesting idea as I was able to explore more about myself from the collected data. Also, my classmates drawn some incredible conclusions/observations/hypothesis from my data that I never realized."* Another student reflects on the personal experiment he did with himself to improve his learning. *"I find it helpful to learning as it gave better insight to what worked for me and what didn't through the collection of the data.*" Students also comment on the value of those exercises to offer opportunities to work with real-world data that they are so familiar with. *"Engaging in this activity provided me with firsthand experience in working with real-world datasets. It helped me understand the importance of data quality, as I encountered various issues like missing or inconsistent data entries. This hands-on experience further emphasized the significance of data preprocessing and cleaning in ensuring accurate and reliable analysis. Moreover, analyzing and interpreting my personal data allowed me to extract meaningful insights about my own habits, patterns, and behaviors. It offered*

a unique opportunity for self-reflection and understanding, enabling me to identify areas for improvement or optimization". Please refer to Chen 2025 for details.

***Note:** Dr. Chen's NSF CAREER project was inspired by exploratory work related to personal informatics. She will continue to refine those activities and explore its synergy with the research in student-centered learning analytics with a dual purpose to improve students' data literacy and self-regulated learning skills.*

Reference

This is a list of publications, presentations and sponsored projects related to IS 296.

Related Publications and Presentations

[Janeja 2024] Janeja, V.P., Sanchez, M., Khoo, Y.X., Vacano, C.V., & Chen, L.K. (2024). Adopting Foundational Data Science Curriculum with Diverse Institutional Contexts. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE 2024), Volume 1.
Association for Computing Machinery, New York, NY, USA, 576–582.

[Bhalli 2024] Bhalli, N., Janeja, V., & Harding, D. (2024, March). Effects of Prior Academic Experience in Introductory Level Data Science Course. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 2 (pp. 1576-1577).

[Wang 2023] Wang, Susan, Vandana Janeja, David Harding, Claudia Von Vacano, and Daniel Lobo. "ADOPTING DATA SCIENCE CURRICULA: A STUDENT CENTRIC EVALUATION." INTED Proceedings 1 (2023).

[Chen 2024] Chen, L.K., & Thai, J. (2024). Assessment-via-Teaching: Exploring an Alternative Assessment Strategy in Undergraduate Introductory Data Science Course. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE 2024), Volume 2. Association for Computing Machinery, New York, NY, USA, 1598–1599.

[Chen 2023] Chen, L.K.., Gillan, J., Decker, M., Eteffa, E., Marzan, A., Thai, J., & Jewett, S. (2023). Embedding Digital Data Storytelling in Introductory Data Science Course: An Inter-Institutional Transdisciplinary Pilot Study. Journal of Problem Based Learning in Higher Education, 11(2), 126–152.

[Chen 2025] Chen, L.K. (2025). Personal Learning Analytics: Integrating Data Science Education to Improve Data Literacy and Self-Regulated Learning. 15h International Conference on Learning Analytics & Knowledge (LAK25). March 2025 (to appear)

[Chen 2023 Presentation] Chen L.K, Data 8 Adaptation- UMBC experience, National Data Science Education Conference, 2023

Related Sponsored Project

NSF: IUSE: Undergraduate Data Science Education at Scale

NSF: CAREER: Teaching to Empower with Learning Analytics for College Students by College Students (2024.7 - 2029.6), $790,887, PI - Karen Chen

NSF: Collaborative Research: RETTL: Story Studio: Coaching Data Storytelling at Scale. (2023.8 - 2026.7), $369,610, PI - Karen Chen

[HIF] UMBC Hrabowski Innovation Fund, Data-Driven Student-Centered Health Communication and Promotion: Interdisciplinary Collaborative Problem-Solving and Peer-Learning for a Thriving Campus (2024.1 - 2025.12). $20,500, PI - Karen Chen

List of adaptations from UC Berkeley's Data 8

- While we maintained a similar structure during the first half of the semester (data wrangling and visualization in python Jupyter Notebook), the focus on the curriculum post-midterm have shifted to a conceptual understanding of statistical inference and hypothesis testing, lighter on programming, while students continue to hone programming skills learned in the first half of the semester (table and visualization functions) through project work.
- Some labs and homework were shortened or replaced with local contextual data. For example, we invite students to explore UMBC students' retention statistics, and UMBC major switch and gateway course performance data.
- An AI/data ethics module, initially missing from Data8, was introduced. We explored several different formats, such as a guest lecture, a case study through the lens of ethical data life cycle. Additional new modules are being developed and tested inspired by faculty research, e.g. the deep-fake research project by Dr. Jeneja's team.
- In-class labs were significantly modified allowing students to explore their own data, propose and answer their own curiosity driven questions. Students were given sample simulation code without having to write code from scratch. This change reduces the cognitive load so that students may focus on conceptual understanding of challenging concepts in statistical inferences. Meanwhile, it helped increase flexibility for students to bring in their own lived experiences and increase motivation and engagement.
- We added data-driven communication assignments, including story-reading exercises where students are asked to provide a narrative for a given data visualization, and the integrated assignment invites students to critique the argument floated on social media using the lens of science evidence and craft communication products that can be shared on social media.
- The course project is added as a group project where students picked their dataset, and crafted a data story presentation. Students were asked to submit weekly updates, each with several data insights. The cumulative set of data insights were assembled into data stories toward the end of the semester. Embedded near-peer mentors (students who took IS 296 in previous semester) as data science scholars and

Assessment of IS 420

IS 420: Database Application Development is a required senior level course for IS 420. It has the following SLOs:

C1. Write non-trivial SQL queries.
C2. Design and develop realistic database applications in the PL/SQL language.
C3. Learn about NoSQL databases and Big Data environments
C4. Experience entrepreneurship: Group formation, team-work, and team dynamics

Below are SLOs for the BS in IS program.

Program SLOs for the BS in IS
P1: Develop oral and written skills
P2: Develop teamwork and leadership skills
P3: Demonstrate application development using programming languages
P4: Demonstrate knowledge of hardware infrastructure and integration
P5: Demonstrate networking skills
P6: Demonstrate capability of database design and development
P7: Demonstrate capability of data analytics using AI
P8: Demonstrate capability of designing and analyzing information systems
P9: Demonstrate capability of solving complex problems

We used assignments, tests, and a project to assess these learning outcomes.

Direct assessment: we selected a number of questions from assignments and exams. We grouped the questions based on their learning objectives. We also selected project deliverable 1 (D1) and deliverable 3 (D3) where in D1 students need to form a project team, assigning responsibilities for each group member, and come up with milestones. This directly corresponds to learning outcome C4. Project D3 is a demonstration of the whole project, which requires students to work in groups to create a database application, test and debug their code, and run the demo. D3 evaluates multiple learning outcomes. The table below summarises the assessment results for Spring 2022.

Direct assessment results for IS 420 in Spring 2022

Item	Course outcome	Program outcome	Percentage Correct	Notes
Assignment 1: Q1-Q2	C1	P6	95.6%	Write create table and insert, Bloom Understand & Apply level
Assignment 2: Q1-Q4	C1	P6	87.4%	Write more advanced SQL select statements, Bloom analyze & apply level
Midterm: Q2&Q3	C2	P3, P6, P9	**82.4%**	Write PL/SQL code to solve a problem, Bloom analyze & apply level
Final exam: Q3	C3	P3, P6, P9	84.1%	Short answer to design tables for NoSQL, Bloom analyze & apply level
Project D1:	C4	P1, P2	98.5%	Project planning including team formation, assigning responsibilities of each team member, and setting milestones, Bloom understand and apply level
Project D3:	C1, C2, C4	P1, P2, P3, P6, P9	90.9%	Students demo a a database application they create, which requires design, programming, debugging, and testing, Bloom evaluate & analyze level

Indirect assessment: the average overall grade for this class was 87.8 with 90.9% students passing this class (with a grade C or better).

Improvement based on assessment: the assessment results indicate that students score the lowest on C2 (Design and develop realistic database applications in the PL/SQL language) which was reflected in their scores on Midterm exam Q2 & Q3. The instructor increased the number of lectures and discussion sections dedicated to covering PL/SQL and provided more exercises for students to practice their PL/SQL skills. Another assessment was conducted in Spring 2024.

Direct assessment:

Direct assessment results for IS 420 in Spring 2024

Item	Course outcome	Program outcome	Percentage Correct	Notes
Assignment 1: Q1-Q2	C1	P6	93.2%	Write create table and insert, Bloom Understand & Apply level
Assignment 2: Q1-Q4	C1	P6	93.1%	Write more advanced SQL select statements, Bloom analyze & apply level
Midterm: Q2&Q3	C2	P3, P6, P9	**87.1%**	Write PL/SQL code to solve a problem, Bloom analyze & apply level
Final exam: Q3	C3	P3, P6, P9	80.1%	Short answer to design tables for NoSQL, Bloom analyze & apply level
Project D1:	C4	P1, P2	97.2%	Project planning including team formation, assigning responsibilities of each team member, and setting milestones, Bloom understand and apply level
Project D3:	C1, C2, C4	P1, P2, P3, P6, P9	96.6%	Students demo a a database application they create, which requires design, programming, debugging, and testing, Bloom evaluate & analyze level

Indirect assessment: the average overall grade for this class was 88.1 with 96.4% students passing this class (with a grade C or better).

The results showed an improvement on learning outcome C2 (from 82.4% to 87.1%), and the indirect assessment shows a higher percentage of students passed this class. These results showed that the changes were effective. However the outcome C3 decreased, possibly due to many students missing the lecture covering the topic. The lecture section was pretty large (with over 85 students) so it was challenging to keep attendance. The instructor will explore further improvements such as using QR code for recording course attendance or increasing discussion sections for this topic.

Assessment of Online MS Program, Assessment of IS 698 Artificial Intelligence

IS 698 Artificial Intelligence is an elective course in the Online MS program. It has the following SLOs:

C1. Discuss the history of AI, the current trends and the impact of AI.
C2. Explain the most important AI concepts.
C3. Implement several basic AI algorithms including search and constraint satisfaction.
C4. Discuss ethical issues regarding AI.
C5. Use Bayesian networks as a modeling tool.
C6. Use AI methods to solve real problems.

The program-level SLOs (PSLOs) for the Online MS in IS are:

1) Develop, maintain, manage, and apply information technology systems.
2) Develop data science and artificial intelligence solutions for effective decision making.
3) Develop secure information technology systems with rigorous cybersecurity protections.
4) Develop user interfaces with high levels of user experience.
5) Demonstrate problem-solving skills.
6) Communicate effectively.

The course SLOs each support PSLO 2). Course SLO C6 is additionally aligned with PSLO 5). The learning outcomes for this course are assessed via a final exam, homework assignments, individual coding projects, quizzes, and discussions. Some course assessments measure PSLO 6) directly.

Direct assessment: Each lesson has several learning outcomes which are made known to the students, and which are aligned with the course learning outcomes. Each question in the assessments tests one or more of the lesson-level learning outcomes.

Direct assessment results for IS 698 AI in Spring 2024

Item	Course outcome	Program outcome	Percentage Correct	Notes
Homework 1	C2, C3	2)	86.6%	Intelligent agents, search
Homework 2	C2, C3	2)	89.2%	Adversarial search, constraint satisfaction problems
Homework 3	C3, C5	2)	80%	Probability, reinforcement learning, Bayesian networks
Individual coding project 1	C3, C6	2), 5)	100%	Search
Individual coding project 2	C3, C6	2), 5)	70.7%	Constraint satisfaction problems
Final exam	C2, C3, C5, C5, C6	2), 5), 6)	95.4%	Covers the entire course
Quizzes	C1, C2, C3, C4	2)	99.3%	Reading-quiz and post-lesson quizzes for each module
Discussions	C1, C2, C4, C5, C6	2), 5), 6)	94.2%	Discussions for each module focus on applying AI methods to real problems and thinking through ethical issues

Indirect assessment: The average grade for the course was 95.0%, with 100% of the students passing the class.

Improvement based on the assessment: We will increase coverage of C1 in more assessment modalities, especially the homeworks and final exam. The individual coding project 2 was too difficult, with the lowest average grade by a significant margin. We will revise, remove, or replace this assignment.

Assessment of SENG 701

SENG 701: Capstone in Software Engineering is a required graduate level course for the Master in Professional Studies (MPS) program in Software Engineering. It has the following SLOs:

C1. Managing, implementing, and executing a full life-cycle software engineering project and working with end users, the community, and industry partners to plan a software engineering project.
C2. The ability to communicate and present effectively to a wide range of audiences including end-users, people from other fields, and non-technical businesspeople.
C3. The ability to visualize product benefits, features, and future plans into a compelling story.
C4. The ability to create a prototype or a minimally viable software intensive product (MVP).
C5. The ability to communicate in writing through a detailed report and summaries for different audiences from an executive summary to a detailed technical specification.

Here are SLOs for the MPS in Software Engineering program.

Program SLOs for the MPS in SENG
P1: Implement strategy, policy, and standards regarding ethical decision making in software engineering. P2: Design a software product solution using an iterative software process management to satisfy users' requirements and market needs while embodying the program vision that software systems first and foremost must be ethical, reliable, and beautiful. P3: Design an appropriate and usable user interface paradigm for a software system. P4: Apply fundamentals and emerging techniques from software testing to the design, implementation, and maintenance of a software application, device, or software system. P5: Build as part of an engineering team a fully functional rapid prototype of a software application, device, or a minimally viable software intensive product (MVP). P6: Lead in one or more of the following roles while working with a team of software engineers, domain experts, and business users: requirements analysis, design, architecture, implementation, testing, deployment, release management, software process management, product management, product maintenance, product retirement, or product migration of a software application, device, or software system leading to a software product that achieves the program vision that, "Software starting today must be conceived, designed, architected, built, and managed to be ethical, reliable, and beautiful."

We used a project with multiple checkpoints and a final reflection to assess these learning outcomes directly and indirectly.

Direct Assessment: Grades from each checkpoint as well as the final project delivered in the course are used to evaluate the achievement of the course objectives. As each objective is not individually evaluated due to the project being a holistic endeavor, the overall trajectory and final grade reflects the direct achievement of the course outcomes. The table below shows the data from Fall 2023 and is based upon six students.

Direct assessment results for SENG 701 in Fall 2023

Item	**Course Outcomes**	**Program Outcomes**	**Percentage Above 80%**	**Average Percentage**	**Notes**
Alpha Checkpoint	C1-C3, C5	P1-P4	50%	77.2%	Develop a plan for the capstone project including user stories

Beta Checkpoint	C1-C5	P1-P6	83.3%	87.9%	Develop a rudimentary prototype and update plan as necessary
RC Checkpoint	C1-C5	P1-P6	83.3%	83.3%	Have a working MVP to present to project sponsor and community
Final Checkpoint	C1-C5	P1-P6	83.3%	80.6%	Complete MVP with final report and artifacts

Indirect Assessment: Students were given a reflective assignment on lessons learned to evaluate their perceptions of the course. Data was aggregated with the Spring 2024 and discussed in the next section due to the small sample size here.

Improvement Based on Assessments: There were not many students in this first cohort. No change was made based on the data as five out of six students did very well and all students met a passing grade (70%) for the final.

Direct Assessment: Grades from each checkpoint as well as the final project delivered in the course are used to evaluate the achievement of the course objectives. As each objective is not individually evaluated due to the project being a holistic endeavor, the overall trajectory and final grade reflects the direct achievement of the course outcomes. The table below shows the data from Spring 2024 and is based upon eighteen students.

Direct assessment results for SENG 701 in Spring 2024

Item	Course Outcomes	Program Outcomes	Percentage Above 80%	Average Percentage	Notes
Alpha Checkpoint	C1-C3, C5	P1-P4	83.3%	89.3%	Develop a plan for the capstone project including user stories
Beta Checkpoint	C1-C5	P1-P6	44.4%	80.3%	Develop a rudimentary prototype and update plan as necessary
RC Checkpoint	C1-C5	P1-P6	44.4%	70.5%	Have a working MVP to present to project sponsor and community
Final Checkpoint	C1-C5	P1-P6	27.8%	74.8%	Complete MVP with final report and artifacts

Indirect Assessment: Students were given a reflective assignment on lessons learned to evaluate their perceptions of the course. This included a survey with general opinions and feelings about specific aspects. Data on the general attitudes overall were collected and aggregated for both Fall 2023 and Spring 2024 to get a 92% participation rate and is summarized in the table below:

Likert Rating	Percentage of students
Agree + Strongly Agree	75%
Neutral	16%
Disagree + Strongly Disagree	9%

This shows 91% of the students were neutral or better in their qualitative feedback of the course. This is higher than the percentage of students receiving 80% or better, which means that student impressions are not entirely linked to the grade achieved. This shows that they are receiving a good experience and gaining more than their grades show.

Improvement Based on Assessments: There were a lot of students in this cohort and one lesson learned was to limit the number of students due to the amount of effort to collaborate and provide feedback on each project. It is noted that while the percentage of students above 80% improved in the first cohort, it declined significantly in the second cohort. However, the average overall percentage of the grades saw smaller differences, but again fluctuated. More data with smaller class sizes will be more telling as students did feel they gained a positive experience despite the grade received.

Bumpy Journey: Using Learning Analytics to Understand Undergraduate Computer Science Gateway Courses Performance and Major Switch Decisions

Anonymous Authors
Institution
Email

ABSTRACT: Computer Science (CS) gateway courses are critical milestones students must pass to proceed with the planned majors. Students may choose to leave computer science majors voluntarily or be forced to due to failing gateway courses. For some students, failing CS gateway courses and the subsequent major switch is one of the early "shocks" they must grapple with in their college experiences. These negative experiences could impact students' self-efficacy, academic trajectory, and career outcomes. It is thus of interest to understand the factors that may predict gateway course outcomes and the relationships between gateway course performance and students' major switch decisions. In this project, we analyze the CS gateway course performance and major-switching data for students who initially plan to major in CS in a minority-serving institute. We report several learning analytics driven findings including (1) models to predict gateway course performance using information available at different points in time; (2) analysis to explore relationships between gateway course performance and major switch decisions and their association with demographic information such as gender and race, and family income level. We discuss the implications of those findings to support student advising and gateway course redesign and future work to support those inquiries.

Keywords: computer science education, gateway course performance, academic decision making

1 INTRODUCTION

Computer Science (CS) gateway courses are critical milestones students must pass to continue their computer science major. These courses traditionally serve as a filter to determine which students are prepared for the demanding studies ahead. At our institute, the gateway sequence includes CS1 (Python programming), CS2 (object-oriented programming with C++), and CS3 (discrete math). (Note: The exact course names are withheld for a blind review.) To pass these gateway courses, students must achieve at least a B in CS1 and CS2, and a C in CS3. Concurrently, they must also fulfill the math prerequisites, which include precalculus, calculus, and analytical geometry. Each of these courses can be retaken once if necessary. Historically, the passing rate for CS1 and CS2, with grades of B or higher, hovers around 60%. This has been a significant barrier for many students to proceed with the CS pathways. The project aims to understand better the interplay between gateway course performance and students' major switch decisions. This knowledge can guide us in offering more informed advice to students and, where necessary, help restructure the program to ensure a more inclusive computing pathway. In the next section, we briefly overview two strands of preliminary findings in (1) predicting the gateway course outcomes and (2) the interplay between gateway course performance and major switch decisions. We will conclude by discussing implications and ongoing research in this area.

2 MODEL FOR PREDICTING CS GATEWAY OUTCOMES

We explored a series of predictive models to answer the question: *To what extent and how early could we predict gateway course outcomes, i.e., whether or not a student could eventually pass all gateway courses and be eligible to proceed with CS majors?*. To answer this question, we assembled a cohort of 756 students who attempted gateway courses and enrolled as first-time freshmen in the computer science major from Fall 2015 to Spring 2018 in a Minority-Serving Institute on the East Coast of US, with academic performance data available until Fall 2022. The study was approved by the Institute Research Board at the University. We built three models with various input features available at three different points in time (Table 1). Feature set for Model 1 includes high school GPA and math placement level, which are available at the time of enrollment in the college; Model 2 feature set includes additional factors such as first-term GPA, available at the end of the first term; Model 3 features includes additional information on grades from math co-requisite courses. Using a 70% and 30% training and test split, the vanilla logistic regression yields Area Under Curve (AUC) scores of .69, .77, and .93 for Models 1, 2, and 3, respectively. We then perform model performance analysis using ROC (Receiver Operating Characteristic) Curves. We compare models' capacity to identify successful students (i.e. True Negative Rate) while maintaining a reasonable level of True Positive Rate of 80%, i.e. correctly identifying at least 80% failing students. Model 1 can only identify 36% successful students, which is suboptimal. However, we note that when adding the additional first-term GPA as in Model 2, the model can accurately identify 60% of the successful students, and when math grades were further added, 90% of the successful students can be identified. Overall, the model shows some promise in identifying students who might fail or pass gateway courses at relatively early time points.

Table 1: Model Performance for Predicting CS Gateway Outcomes

Model	Input	Time of Prediction	AUC score	TPR	TNR
Model 1	High school GPA + math-placement	at enrollment	0.69	80%	36%
Model 2	Model 1 features + First term GPA	end of first term	0.77	80%	60%
Model 3	Model 2 features + Math grades	end of first term	0.93	80%	90%

Note: TPR=True Positive Rate; TNR=True Negative Rate; Positive= Fail; Negative=Pass

3 MAJOR SWITCH DECISIONS: "FORCED" VERSUS "VOLUNTARY" AND GATEWAY OUTCOMES

The CS program offers a series of three gateway courses, and students are allowed to retake each gateway course once. This structure gives students multiple checkpoints to assess whether they wish to continue in the CS major. By examining performance in these gateway courses, we can infer if students switch majors due to failure in these courses (i.e. "forced") or choose to depart the CS pathway even without encountering failures or choose not to repeat after first-attempt failure (i.e. "voluntary"). Voluntary decisions may be explained by other reasons to leave the CS major, such as a lack of belonging. In our cohort of 693 students who switched majors after taking at least one gateway course, only about 28.4% switched because they were "forced" out of CS due to gateway course

failures, while the majority voluntarily chose to leave the CS program. We further analyzed the likelihood of "forced" versus "voluntary" switches based on demographics information such as race and gender. The result indicates that, on the whole, female students are more likely to voluntarily switch out of CS majors compared to male students. The likelihood of voluntary switch is 79% among 167 female students, compared with 69% among 441 male students. This gender difference is consistent across all race groups, as shown in Figure 1.

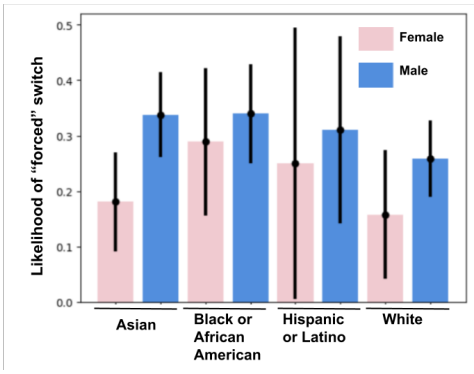


Figure 1: Likelihood of "forced switch" out of Computer Science major, grouped by gender and race, with 95% confidence interval.

We also examined the relationship between the nature of major switch decisions from the CS major and the student's family income level, which was estimated based on their high school zip codes. The result indicates that students from higher income brackets are less likely to voluntarily leave the CS major compared to those from lower income brackets. One reason could be that wealthier students have the financial resources to retake courses they fail, despite the added costs and time.

4. Conclusion and Future Work

The decision to pursue or abandon the CS pathway is multifaceted. Factors such as performance in gateway courses, personal experiences, financial considerations, or sense of belonging all play roles in students' choices of majors. As part of our ongoing research, we are gathering qualitative data from interviews and focus groups with students who have departed CS major pathways. This will offer a deeper understanding of the motivations behind their decisions. Combined with the predictive model of gateway course performance, we envision that those insights could inform data-driven decisions, such as refining student advising practices, gateway course structures, and the broader CS curriculum to improve persistence and inclusiveness (Norouzi 2023), especially for those from marginalized backgrounds.

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Appendix E: Financial Support for Graduate Students

	Pre Review Data		Current Academic	Post Review Projections		
	Year2	Year1	Year (2024)	Year1	Year2	Year3
Research Assistants	**51**	**64**	**48**	**48**	**48**	**48**
Graduate Fellowships	**1**	**2**	**2**	**2**	**2**	**2**
and Dissertation Awards						
Teaching Assistants	**22**	**22**	**27**	**27**	**27**	**27**
Gradership	**4**	**12**	**13**	**13**	**13**	**13**
TOTAL	**78**	**100**	**90**	**90**	**90**	**90**
* Information provided by the Graduate School						

Appendix F: Assessment of Physical Facilities and Support Facilities

The following table indicates the need for improvement in the facilities of the IS department. These are based on the current faculty, staff, and student numbers. As the department continues to grow there will be additional space requirements because we are at almost 100% utilization.

	Very Adequate	Adequate	Inadequate	Very Inadequate
Facility				
1. Office Space				
a. Faculty Space			X	
b. Administrative Space		X		
c. Graduate Student Space		X		
2. Library				
a. Periodical Holdings		X		
b. Book Holdings		X		
c. Department-based Holdings		X		
3. Computing Facilities				
a. Central Computer Server(s)				
1) Hardware		X		
2) Software			X	
b. Department-based				
1) Hardware			X	
2) Software			X	
4. Other Research Facilities				
a. Laboratories				
1) Space			X	
2) Electric Power		X		
3) Water and Sewer		X		
4) Lighting, Heat		X		
5) Ventilation		X		
b. Equipment				
1) Faculty Research			X	
2) Teaching		X		
3) Student Research			X	
5. Other			X (data use agreement, software purchase)	

The University library budget has been reduced over the past several years. The faculty has had to make decisions on removing journals from the library subscription list. While this is not ideal, the university library does provide support services such as acquiring journal articles requested by the faculty.

Given the inception of LLMs, VLMs and other large ML models, faculty are always in need of computing (GPUs) facilities. While centralized computing facilities are available, customization of h/w s/w based on individual research needs is inevitable. Moreover, given the surge of experiential learning, developing testbeds and generating AI-ready datasets are becoming the integral part of large scale funding opportunities. Several of our faculty are successful in this pursuit but providing them space to carry out their research is becoming challenging. Therefore, the remaining categories of the Facility Review are determined to be Adequate or Inadequate based on the above needs.

The ITE building has appropriate space for offices and research. With the increase in external funding and new hires the demand on research space is increasing. The department had to convert some space previously allocated for graduate students into research lab space for the faculty. We also converted an open lab space for all IS students into a research lab.

The department maintains four teaching labs with 25 computers in each. There is no budget line item for upgrading these computers. However, computers need to be upgraded or replaced every 4 - 5 years. Electric power, heat, and ventilation could have been rated higher, but there are periodic problems with the HVAC causing rooms to be inappropriately hot or cold and we have had occasional power problems especially with regard to the power for our servers.

Appendix G: IS Department –Committee Assignments 2024-2025

Please note that the following assignments were developed with the goals of reducing the total number of committees that people are serving on, keeping committee demands lower on junior faculty, and ensuring that enough people are associated with certain critical activities. These assignments only deal with departmental committees and, therefore, represent only a subset of one's service activities. Individual faculty are expected to seek and/or volunteer for additional opportunities as appropriate. This is true, particularly for university-level service, where the department has minimal control over assignments, and for senior faculty who are expected to assume more responsibility for service-related activities. Service to the department includes many things that are not represented in this list (e.g., attending events and representing the department on ad hoc committees). Please note that attending (and actively participating in) faculty meetings is an important part of the service requirement for all faculty.

These are faculty committees. Additional faculty may attend meetings as appropriate. Staff may be invited to attend meetings so they can keep up-to-date with committee activities that affect their positions and provide input if the committee so desires. **Voting should be limited to those individuals officially listed as members of the committee.**

Adjunct Faculty Committee
Nirmalya Roy (Chair)
Richard Sponaugle
Sidas Saulynas
William Ryan
Zehra Zaidi
Mohan Sundaram

Graduate: IS on campus
Sreedevi Sampath (Chair)
Md Osman Gani (Spring)
Houbing Song
Jianwu Wang
Ian Stockwell
Shimei Pan

Graduate: HCC
Andrea Kleinsmith (Co-Chair)
Foad Hamidi (Co-Chair)
Anita Komlodi
Tera Reynolds
Ravi Kuber

Graduate: Online MS
Jimmy Foulds (Chair)
Michael Brown
C Augusto Casas
Aryya Gangopadhyay

Council of Majors
Dina Glazer (Liaison)

Search Committee (2 TT searches)
Nirmalya Roy (Co-chair)

Honors and Awards
Zehra Zaidi (Chair)
Ant Ozok
Ida Ngambeki
Md Osman Gani (Spring)
Mohan Sundaram

Research
Jianwu Wang (Chair)
Lujie Karen Chen
(Seminar coordination)
Jimmy Foulds
Foad Hamidi
Lei Zhang
Karuna Joshi
Sanjay Purushotham

Undergraduate
Richard Sponaugle (Co-Chair)
Ravi Kuber (Co-Chair)
Dina Glazer
Jennifer Carter
Dana Smith
Margret Kahl
Patti Ordonez
Zehra Zaidi
Mohan Sundaram
Sidas Saulynas
William Ryan

Assessments
Karuna Joshi (chair)
George Karabatis
Dana Smith
Todd Karner
Karen Chen

Mentoring and Retention Roundtable
Zhiyuan Chen
Carolyn Seaman
Mohammad Samarah
Andrea Kleinsmith
Patti Ordonez

Graduate Professional Programs Committee
Mohammad Samarah (Co-Chair)
Erin Van Dyke (Co-chair)
C. Augusto Casas
Todd Karner

Graduate IS Admissions Committee
Sreedevi Sampath (Chair)
Michael Brown
Sanjay Purushotham
Ant Ozok
Lei Zhang

Ravi Kuber (Co-Chair)
Tera Reynolds
Foad Hamidi - Fall 24 / Anita Komlodi - Spring 25
Margret Kahl
Houbing Song
Mohammad Samarah
Shimei Pan
Jasmin (ex-officio) + Assisting search
Student: Masud Ahmed
External member: Sanorita Dey from CSEE

Search Committee (Lecturers PoP searches)
Jennifer Carter (chair)
Richard Sponaugle
Sidas Saulynas
William Ryan
Ida Ngambeki
Dina Glazer
Abhijit Dutt
Student: Kelvin Echenim
External member: Abhijit Dutt from CSEE

APR Committee
Zhiyuan Chen
George Karabatis (Chair)
Nirmalya Roy
Sreedevi Sampath
Aryya Gangopadhyay
Richard Sponaugle
Vandana Janeja
Erin Van Dyke

Appendix H: IS Department BPC Plan

Departmental BPC Plan
Department of Information Systems (IS)
University of Maryland, Baltimore County



Effective dates of Plan:12/19/2022- 12/19/2024
Contact: Professor Vandana Janeja, IS Department Chair, vjaneja@umbc.edu

1. Context

UMBC is a Minority Serving Institution with almost 14,000 students, of whom 52% are from racial/ethnic minority groups: 19% African American; 20% Asian American; 8.1% Hispanic; and 4.9% Other. Of the total student body, 46% identify as women and 54% identify as men. Undergraduate students account for 79%, 10% of whom are pursuing degrees in the IS Department. Each year an average of 166 (out of 1359=12.21%) undergraduate students transfer into IS from 2-year institutions, community colleges and other units on campus. Of the 21% graduate students at UMBC, 12% are pursuing one of the degrees offered in IS. The IS Department offers nine (9) degree programs: 2 undergraduate (IS & Business Technology Administration); 3 MS (IS online, IS on campus, Human-Centered Computing (HCC)); 2 Masters of Professional Studies in collaboration with our colleagues in the Office of Professional Programs (Health Information Technology & Software Engineering); 2 PhD (IS & HCC).

2. Goals

Outreach and recruiting: Our approach is a holistic approach aligned with the IS department vision of inclusive excellence across all underrepresented groups in context of the programs being evaluated. In this plan, we specifically focus on students from historically underrepresented groups in computing.

G1: Increase enrollment of women, African-American, Hispanic undergraduate transfer students from 2- and 4-year institutions to IS from the 5-year average of 51% to an average of 55% by 2032.

G2: Increase enrollment of women, African-American, Hispanic students in graduate programs from the 5-year average of 16% to an average of 19% by 2032.

Monitoring BPC Data

G3: Beginning in 2023 and concluding by 2026, we will analyze data from the last 6 years (using 2018 data as a baseline) to identify undergraduate success in the program, which will include (1) rates for earning a D, F, or withdrawing from a pre-gateway course, (2) attrition rates after pre-gateway courses, and (3) attrition after gateway courses.

G4: By 2026, we will analyze IS departmental data from the last 6 years to identify research opportunities and funding provided to African-American and Hispanic students at all levels: K-12, undergraduate students and graduate students.

G5: By Fall 2023, we will convene an IS departmental BPC committee with actionable commitment from the department to develop, organize, and monitor BPC activities, both short- and long-term. One PhD student will be included on the committee.

3. Activities and Measurement

Data collected for all activities will be disaggregated by race/ethnicity and gender, as possible.

A1a (G1): [led by Richard Sponaugle, William Ryan, Dwayne Butcher, Patricia Ordóñez] Continue departmental outreach activities for women, African-American and Hispanic undergraduate transfer students to increase enrollment, including NSF's STARS Computing

Corps, participation in university outreach events, and the Computing & Engineering Transfer Institute (https://coeit.umbc.edu/ceti/).
A1b (G1): [led by Carolyn Seaman] Implement NCWIT's pipeline-in-a-box to facilitate women, African-American, and Hispanic community college transfer students.
A1c (G1): [led by Carolyn Seaman and Andrea Kleinsmith] Develop a peer-mentoring program for incoming women, African-American, and Hispanic transfer students.
Measurement for G1 activities: Departmental student enrollment statistics monitored annually.

A2a (G2): [led by Jianwu Wang, Nirmalya Roy, Vandana Janeja] Continue hosting REU students and Data science scholars from groups underrepresented in computing through the NSF REU Site, NSF IUSE, NSF SATC, NSF iHARP and other relevant grants.
A2b (G2): [led by Sreedevi Sampath and Andrea Kleinsmith] Develop and disseminate talking points to faculty and staff for use during discussions with potential graduate students.
A2c (G2): [led by Vandana Janeja] Fund travel for faculty and student representatives to diversity focused conferences each year, such as National Society for Black Engineers (NSBE), Grace Hopper, Tapia.
A2d (G2): [led by Vandana Janeja] Continue to partner with undergraduate scholarship programs for students underrepresented in computing, such as Louis Stokes Alliance for Minority Participation (LSAMP).
Measurement for G2 activities: Departmental student enrollment statistics; participation counts; attendance counts.

A3a (G3): [led by Karuna Joshi and Andrea Kleinsmith] Work with UMBC's Institutional Research, Analysis & Decision Support (IRADS) to retrieve quantitative data regarding departmental student enrollment statistics.
A3b (G3): [led by Patricia Ordóñez, Jennifer Carter, Zehra Zaidi, and William Ryan] Work with faculty who are currently teaching or who have taught the pre-gateway and gateway courses in the past two years to obtain qualitative data on their experiences.
A3c (G3): [led by Vandana Janeja] Administer the Data Buddies survey for students in other department courses including in the pre-gateway and gateway courses, identifying first year and transfer students separately.
Measurement for G3 activities: Course grades; quantitative and qualitative survey data.

A4a (G4): [led by Sanjay Purushotham] Develop a catalog detailing research opportunities provided to students by IS faculty.
A4b (G4): [led by Vandana Janeja] Work with IRADS to analyze data.
Measurement for G4 activities: Faculty and student demographics; qualitative data on students' experiences; amount of funding.

A5a (G5): [led by Vandana Janeja] Convene a departmental committee on BPC with members determined via faculty/staff nomination and voting, ensuring a diverse committee with respect to gender, racial/ethnic background, and rank.
A5b (G5): [led by Zhiyuan Chen and Tiffany Shorter] Develop and administer a climate survey to IS faculty and staff.
A5c (G5): [led by Program Directors with Office of Institutional Advancement and Dwayne Butcher] Develop and administer a survey to alumni.
Measurement for G5 activities: Survey data

Appendix I: IS department's vision and mission statement

Our Vision is to expand our role as global leaders at the intersection of information, technology, and people, by promoting inclusive student-centered teaching, reimagining life-long learning, advancing innovative interdisciplinary research, and championing civic engagement.

The mission of UMBC's Department of Information Systems is to:
● Broaden participation and empower student learning through teaching and mentorship for the development of real world skills in the design and implementation of information technologies.
● Advance fundamental, technical and applied research to support both developers and users of information systems.
● Encourage continuous learning and growth of our UMBC community by fostering innovation and collaboration to build a diverse and modern professional workforce which can adapt to a dynamic environment.
● Promote social justice through civically engaged research, teaching and service.
● Create a positive impact on our local community and the global society.
● Continuously evolve and communicate our unique identity by advancing innovation, inclusion, and interdisciplinary collaboration.

Appendix J: IS Department Marketing Materials

Flyer for BTA program



Flyer for IS

2024-2025

UMBC | DEPARTMENT OF INFORMATION SYSTEMS

BY THE NUMBERS

- 43 FACULTY MEMBERS
- 9 PROGRAMS OFFERED
- 2200+ STUDENTS
- 13K+ ALUMNI
- 6 FACULTY LED RESEARCH CENTERS
- 5 CERTIFICATES OFFERED

ONLINE MS PROGRAM
RANKED #34 IN U.S. NEWS

RESEARCH AREAS

ARTIFICIAL INTELLIGENCE
COMPUTING EDUCATION
DATA SCIENCE
HEALTH INFORMATICS
HUMAN-CENTERED COMPUTING
SOFTWARE ENGINEERING

informationsystems.umbc.edu
informationsystems@umbc.edu

SELECTED FACULTY AWARDS

Dr. Karen Chen received the prestigious NSF career award titled "CAREER: Teaching to Empower with Learning Analytics for College Students by College Students". This is the seventh award in the department.

Drs. Janeja, Komlodi, and Purushotham received a new $750,000 NSF CIRC award for project titled, "Community Infrastructure for Advancing Audio Deepfake Detection."

Dr. Houbing Song is part of a team awarded the NASA Data Analytics and Technical Support Services (DATSS II) contract. DATSS II is a five-year, multiple-award vehicle with a ceiling amount of $115 million.

Dr. Foad Hamidi is part of a team awarded $1.7M for a project titled, "Introducing Synthetic Biology Using Co-Designed, Culturally Responsive BioMaker Activities for Family Engagement in Underserved Communities"

Dr. Karuna Joshi is a part of a team awarded $950,000 from the NSF FDT-Biotech grant for a project titled, "Aspects of Digital Twin Studies for Neuroimages."

Drs. Stockwell, Reynolds, Foulds, and Gani received a $3.4M NIH R01 grant for a project titled, "The Development, Implementation, and Evaluation of a Socia Engagement Support System."

STUDENTS IN THE NEWS



Misan Ayomike, was profiled about economics internship with Pietro Veronesi, a preeminent economist and a dean at the University of Chicago Booth School of Business



Leonard Traeger, Ph.D. '25, information systems, recently won the Best Paper Award at the International Conference on Enterprise Information Systems (ICEIS)



Leah Narat '24, business technology administration, lands elite NASA internship in business intelligence

Flyer for Online MS



Flyer for all MS programs



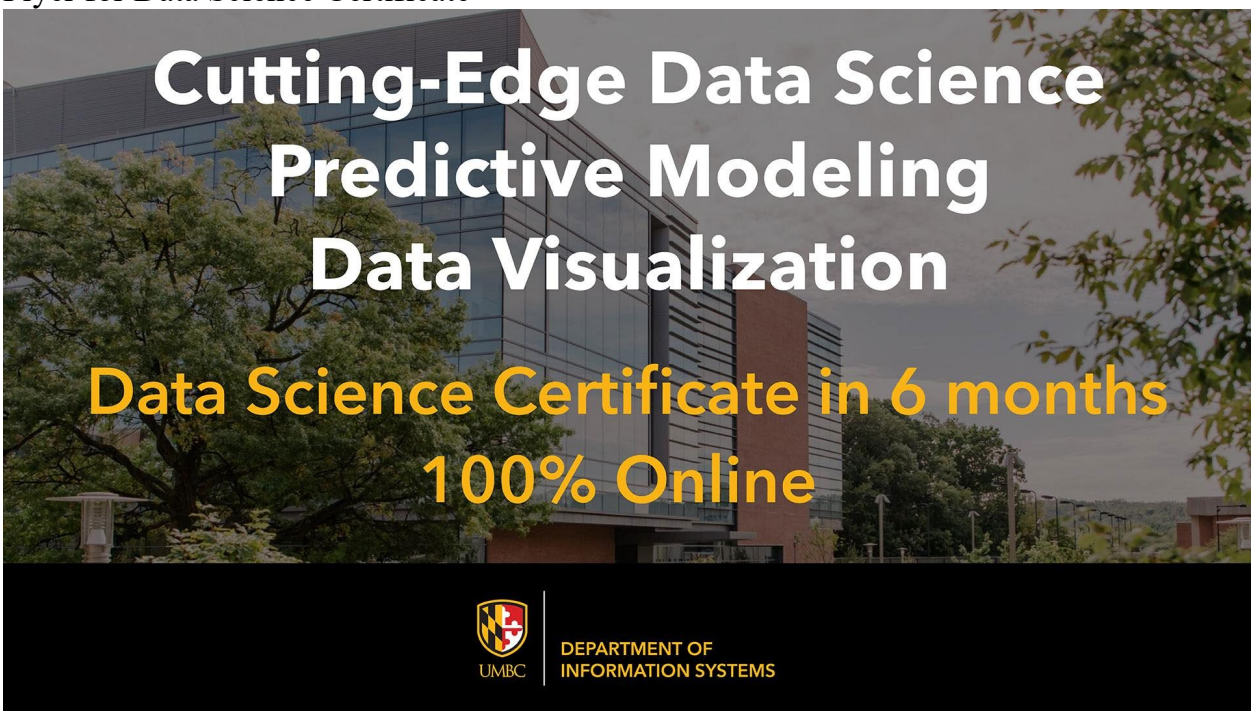
Flyer for HCC program



Flyer for Management Minor



Flyer for Data Science Certificate



Flyer for Cyber Security Certificate



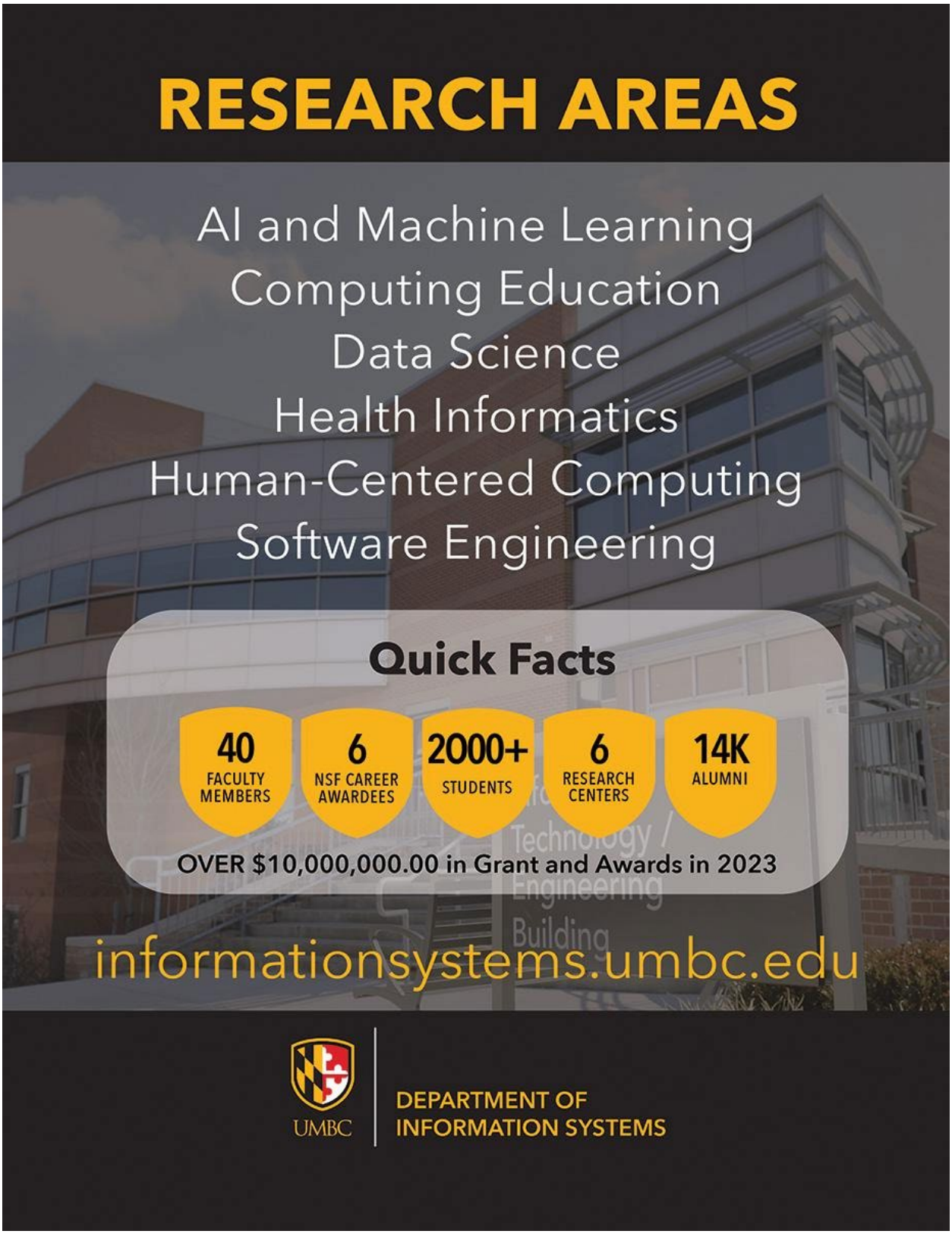
Flyer for UX Certificate



Flyer for Career Outcome



Research Areas



Student Success Photo



Appendix K: Research Centers Led by IS Faculty

CARDS Center for Real-time Distributed Sensing and Autonomy (University level)
https://cards.umbc.edu/

The vision of this center is to advance AI-based autonomy in order to deliver safe, effective, and resilient new capabilities across a variety of complex mission types, including search-and-rescue, persistent surveillance, managing, adapting and optimizing smart, connected robots and machinery, and augmenting humans in performing complex analytical and decision-making tasks. These systems are continually getting better, but to achieve their potential, there are still numerous developments required to improve their capability, command and control, interoperability, resiliency and trustworthiness.

iHARP Institute for Harnessing Data and Model Revolution in the Polar Regions (University level)
https://iharp.umbc.edu/
The Institute for Harnessing Data and Model Revolution in the Polar Regions (iHARP) is among the five new National Science Foundation (NSF) Harnessing the Data Revolution (HDR) Institutes. iHARP will serve as a research hub where experts in data science, Arctic and Antarctic science and cyberinfrastructure — from academia, government and private sectors — come together to address national priorities and challenges related to climate change, sea level rise and the rapidly changing Arctic.

CARTA Center for Advanced Real Time Analytics (University level)
https://carta.umbc.edu/
The Center of Accelerated Real Time Analytics (CARTA) formed in 2018, and is part of NSF's Industry University Cooperative Research program. It has an extraordinary roster of industry and government partners who are focused on cutting edge interdisciplinary research in real time analytics to address problems of national significance. The center works with next-generation hardware technologies to build Cognitive Analytics systems and Active storage devices for real time analytics. This will lead to the automated ingestion and simultaneous analytics of Big Datasets generated in various domains including Cyberspace, Healthcare, Internet of Things (IoT) and the Scientific arena, and the creation of self-learning "smart" systems.

CYPRESS Center for Research in Use-Inspired Cyber-Physical Systems (College Level)
https://cypress.umbc.edu/
Center for Research in Use-Inspired Cyber-Physical Systems Center (CYPRESS) explores multi-domain multimodal sensing, communication, learning, and perception techniques to advance responsible AI and fair machine learning, autonomy and robotics, and edge computing models, tools, and systems. The center investigates cutting-edge scalable, lightweight, and resilient use-inspired machine learning algorithms, computer vision, autonomous navigation in unstructured and digital twin environments, cyber-physical systems for smart and connected health, smart and connected communities, and robotics applications.

ScaleS Center for Scalable Data and Computational Science (College level)
https://scales.umbc.edu/
The Center for Scalable Data and Computational Science (ScaleS) focuses on emerging scalable architectures and algorithms that can utilize high-performance computing, cloud computing, and other advanced computing environments for big data from different science disciplines (e.g., Earth, manufacturing, and health), and interdisciplinary research on how such data and computational science

advances can help scientific applications. The center will connect faculty who work on scalable data/computing techniques with faculty who work on related scientific applications. It will form interdisciplinary teams, conduct research with greater impacts and pursue related funding opportunities.

ISRC Interactive Systems Research Center (Department level)

https://isrc.umbc.edu/

The Interactive Systems Research Center (ISRC) acts as a bridge for faculty across the UMBC campus with expertise in designing, building or studying uses of interactive computing systems. It facilitates the sharing of resources and experience in solving computing problems from a user-centered perspective grounded in user needs and not in simply applying previously designed solutions to new domains. It also acts as a bridge to industry, community, and organizations in order to foster long-standing relationships in addressing user needs through interactive computing solutions. Through the center, external collaborators can seamlessly work with a mix of expertise to innovate interactive computing solutions of societal importance.

Appendix L: student research projects in the past 3 years

Faculty Name	Number of UG Students	Number of GR Students	Year start	Year end	Title
Michael Brown	0	1	2023	2023	Domain Fronting Through Microsoft Azure and CloudFlare: How to Identify Viable Domain Fronting Proxies
Michael Brown	2	0	2023	2024	Support Vector Machine for Predicting Student Dropout Under Different Normalization Methods
Michael Brown	2	0	2023	2024	Hybrid Genetic Algorithm and Support Vector Machine for Prediction of Student Dropout and Success
Michael Brown	0	2	2023	2024	Using Factor Analysis to Increase Accuracy of Neural Networks for Predicting Student Test Scores
Michael Brown	0	2	2022	2023	Increasing Accuracy in Predicting Student Test Scores with Regression using Domain Reduction Technique of Principle Component Analysis
Michael Brown	0	1	2022	2023	Increasing Accuracy in Predicting Student Test Scores with Neural Networks using Domain Reduction Technique of Principal Component Analysis
Yasmine Kotturi	1	1	2024	ongoing	BizChat: Building Resilience in Generative AI Use among Minority Small Business Owners
Ravi Kuber & Sy Saulynas	0	4	2022	2024	Investigating Cybersecurity Instruction and Advocacy for Older Adults
Ravi Kuber	0	2	2022	2024	Investigating Work Practices for Individuals who are Blind
Ravi Kuber & Foad Hamidi	0	3	2024	2024	Collaborating and Amplifying a Community Partner's Practices

Bill Ryan	**1**		**2024**	**2025**	**Investigating VPN and digital fingerprint for consumer networks**
Vandana Janeja	**5**	**15**			**Multiple projects (iHARP, Deep fake detection, data science scholars, data science education, ethical thinking in data science)**
Zhiyuan Chen	**1**	**1**	**2024**	**2025**	**Detecting Stealthy Long-term Cyber Attacks on Wind Energy Assets with Physics-informed Neural Network Technologies**
Zhiyuan Chen/George Karabatis	**0**	**3**	**2021**	**2022**	**Mitigate: An Adaptive Network Data Anonymization Tool Using Condensation-Based Differential Privacy**
Zhiyuan Chen	**0**	**1**	**2021**	**2022**	**Technology Assessment for Data Quality Toolkit**
Zhiyuan Chen	**2**	**0**	**2023**	**2024**	**Deceptive Techniques in Mobile Intelligent Autonomous Systems: Attacks and Defenses**
Kai Sun	**0**	**1**	**2024**	**2025**	**Surgical Demand Predictions for an Ambulatory Medical Center Using Anesthesia Billing Data**
Lei Zhang	**1**	**6**	**2022**	**ongoing**	**Quantum software engineering using machine learning**
Jianwu Wang	**32**	**8**	**2021**	**ongoing**	**Big Data REU**
Jianwu Wang	**0**	**7**	**2020**	**ongoing**	**Developing Passive Satellite Cloud Remote Sensing Algorithms Using Collocated Observations, Numerical Simulation and Deep Learning**
Jianwu Wang	**0**	**3**	**2020**	**ongoing**	**Big Data Climate Causality**
Ian Stockwell	**3**	**0**	**2024**	**2024**	**Impact of Cardiovascular Diseases among Immigrant Mothers during pregnancy and a Healthcare Tech Solution- Birth Event**
Ian Stockwell	**0**	**1**	**2023**	**2023**	**Health Chatbot Infrastructure: HealthmateBot**
Ian Stockwell	**0**	**1**	**2022**	**2022**	**The Failure of CMS Five-Star Ratings to Fully Explain Hospital Readmission Rates in Nursing Homes**

Nirmalya Roy	**30**	**5**	**2021**	**2025**	**Smart Computing and Communications REU**
Nirmalya Roy	**2**	**2**	**2022**	**2025**	**RobSenCom: Middleware to Improve the Connectivity between Heterogeneous Robots and IoT**
Nirmalya Roy	**1**	**1**	**2022**	**2023**	**Detecting Behavioral Health Disorders of Older Adults using Self-supervised Learning and Causal Reasoning**
Nirmalya Roy	**1**	**2**	**2023**	**2025**	**Building Robust Deep Learning Models for Securing the Multi-domain Interactions of Autonomous Cyber-Physical Systems**
Nirmalya Roy	**0**	**1**	**2023**	**2024**	**Virtual Physical Co-Simulations**
Houbing Song	**5**	**8**	**2023**	**ongoing**	**Mobility-Energy-Coordinated Platform for Infrastructure Planning to Support Electric Vertical-Take-Off-and-Landing (eVTOL) Aircraft Operations; Bolstering UAV Cybersecurity Education through Curriculum Development with Hands-on Laboratory Framework; Operationalizing AI/Machine Learning for Cybersecurity Training; Perceptual and Cognitive Additive Manufacturing (PCAM); AI-based Sensing for Improved Resiliency via Spectral Adaptation with Lifelong Learning**
Sanjay Purushotham	**4**	**7**	**2021**	**ongoing**	**AI/ML for Health - Federated Survival Analysis, Multimodal Generative AI for Cancer research, Explainable AI for Medical VQA; AI/ML for Climate - Deep Learning for Cloud property retrievals; iHARP projects; AI/ML for Astrophysics; Safeguarding LLMs;**
George Karabatis	**0**	**1**	**2023**	**ongoing**	**Automatic mapping of entities towards systems integration using deep learning and semantic techniques**
Aryya Gangopadhyay	**10**	**13**	**2021**	**2022**	**Real-time AI on wheeled Robots for surveillance**
Aryya Gangopadhyay	**11**	**15**	**2022**	**2023**	**Multi-modal perception on legged robots; gesture-based robot navination**
Aryya Gangopadhyay	**1**	**10**	**2023**	**2024**	**Zero-visibility navigation and realtime Q&A with robots**

Aryya Gangopadhyay	**1**	**10**	**2024**	**ongoing**	**Swarm robotics; human-robot teaming; game-theoretic models for cybersecurity**
Carolyn Seaman	**0**	**1**	**2024**	**ongoing**	**Assessment and lessons learned from COMP 101**
Carolyn Seaman	**0**	**1**	**2022**	**ongoing**	**Multilevel conflict analysis for software cyber security**
Carolyn Seaman	**0**	**1**	**2024**	**ongoing**	**Technical Debt Games - SLR**
Carolyn Seaman	**0**	**4**	**2022**	**ongoing**	**Regulatory Compliance Software Engineering**
Foad Hamidi	**6**	**10**	**2020**	**ongoing**	**Understanding the Role of Informal STEM Educators in Creating Maker-based and Community-Centered Technology and Computer Science Learning Hubs for Urban Youth**
Foad Hamidi	**1**	**3**	**2024**	**ongoing**	**Space for All: Creating Accessible Technology-Rich Makerspaces and Learning Activities for Youth and Young Adults with Autism**
Foad Hamidi	**0**	**1**	**2024**	**ongoing**	**Introducing Synthetic Biology Using Co-Designed, Culturally Responsive BioMaker Activities for Family Engagement in Underserved Communities**
Foad Hamidi	**5**	**4**	**2020-2021**		**RAPID: Responding to COVID-19 using High-speed Mesh Wireless Community Internet**
Karen Chen	**5**	**5**	**2021**	**ongoing**	**Learning analytics, educational data mining**
Karen Chen	**1**	**3**	**2022**	**ongoing**	**Data Science Eduation using Case-based method (caselet)**
Karen Chen	**1**	**4**	**2023**	**ongoing**	**Data storytelling, communication with data, AI in education**
Karen Chen	**1**	**3**	**2022**	**ongoing**	**multimodal machine learning and analytics, application in education and social work**
Karen Chen	**3**	**3**	**2022**	**ongoing**	**AI in education and human-centered design in K-12, robot-based learning, and math educaiton**

Karen Chen	**2**	**6**	**2021**	**ongoing**	**Virtual Reality, healthy eating, neuro/biosphyical machine learning and analytics**
Karen Chen	**0**	**2**	**2021**	**ongoing**	**wearables, well-being, long-term care workers**
Karen Chen	**0**	**2**	**2022**	**ongoing**	**broadening particpation in computing, imposter syndrome, computer science education**
Shimei Pan	**4**	**15**	**2021**	**ongoing**	**Human-AI interaction, LLMs (trust, bias, hallucination ...), caselet authoring, user embedding and user behavior modeling, multimodal embedding**
Shimei Pan and James Foulds	**2**	**0**	**2024**	**ongoing**	**Analyzing User Engagement and Susceptibility to LLM Hallucinations**
James Foulds	**0**	**5**	**2021**	**ongoing**	**CAREER: Fair Artificial Intelligence for Intelligent Humans: Removing the Barriers to Deployment of Fair AI Technologies**
James Foulds	**1**	**4**	**2019**	**2024**	**AI-DCL: Fairness for the Allocation of Healthcare Resources**
James Foulds	**0**	**2**	**2019**	**2022**	**CRII: RI: A Little Uncertainty is Good for Everyone: Bayesian Models for Fairness, and Fairness for Bayesian Models**
James Foulds	**2**	**2**	**2021**	**ongoing**	**Fairness in Predictive Policing**
James Foulds	**0**	**1**	**2022**	**2023**	**Modeling AI safety**
James Foulds	**0**	**4**	**2019**	**2023**	**Natural language processing**
Andrea Kleinsmith	**4**	**1**	**2020**	**ongoing**	**Physiological synchrony**
Andrea Kleinsmith	**0**	**2**	**2020**	**ongoing**	**Collaborative reflection**

Andrea Kleinsmith, Carolyn Seaman, Karen Chen	**0**	**4**	**2022**	**ongoing**	**Broadening Participation in Computing - Peer Support for IS Transfers**
Andrea Kleinsmith	**0**	**5**	**2023**	**ongoing**	**Embodied interaction**
Andrea Kleinsmith and Tera Reynolds	**2**	**2**	**2022**	**ongoing**	**Broadening praticipation of undergraduate transfer students in computing and engineering**
Andrea Kleinsmith	**0**	**2**	**2024**	**ongoing**	**Digital surveillance - privacy and sensor data**
Ida Ngambeki	**0**	**3**	**2024**	**ongoing**	**CyberCELL: Cybersecurity Curriculum Express Learning Library**
Ida Ngambeki	**0**	**3**	**2024**	**ongoing**	**SWEEPS: Strengthening Workforce Education: Excellence in Programming Securely**
Karuna Joshi	**0**	**8**	**2018**	**ongoing**	**Multiple projects (CARTA: Cloud Data Compliance, IoT Security, Knowledgegraph optimization, Wildfire/Weather Prediction)**
Sreedevi Sampath	**0**	**4**	**2022**	**ongoing**	**Regulatory Compliance Software Engineering**
Sreedevi Sampath	**1**	**1**	**2014**	**2023**	**User-session-based testing of JavaScript applications**
Sreedevi Sampath	**0**	**1**	**2020**	**2024**	**Metamorphic testing**
Sreedevi Sampath	**0**	**1**	**2022**	**2024**	**Cloud services and regulatory compliance**
Sreedevi Sampath	**0**	**1**	**2016**	**ongoing**	**Detecting Anomalous behavior of web application usage**

Sreedevi Sampath	**1**	**0**	**2024**	**ongoing**	**Security vulnerability detection and LLMs**
Sreedevi Sampath	**2**	**0**	**2022**	**2022**	**Ambiguity Heuristics Analysis Builder**
Tera Reynolds	**0**	**1**	**2024**	**2025**	**Building Community Partnerships to Explore Health Literacy Needs in Low Income Neighborhoods in Baltimore**
Tera Reynolds	**0**	**1**	**2023**	**ongoing**	**Investigating Stakeholder Concerns with Mental Health Apps**
Tera Reynolds	**1**	**2**	**2023**	**2024**	**Multi-stakeholder Perspectives on a Sensorized Work Environment in Nursing Home Settings**
Tera Reynolds	**0**	**2**	**2022**	**2024**	**Acceptance of Occupancy-based Technology to Support Personal Decision-making in the Context of COVID-19 Fatigue**
Tera Reynolds	**0**	**3**	**2020**	**2024**	**Understanding Perceptions of a New Mechanism for Sharing Clinical Data: Two Mixed Methods Projects**
Tera Reynolds	**1**	**3**	**2024**	**ongoing**	**Building a Framework and Toolkit for Effective Participatory AI Engagement in Hard-to-Reach Populations: A Case Study in Leveraging AI to Empower Underserved Patients in Understanding and Using their Medical Records**
Tera Reynolds	**0**	**2**	**2024**	**ongoing**	**Swiss Cheese Please: Analyzing Cybersecurity Risks in the Digital Health Ecosystem with Patients with Complex Care Needs**
Md Osman Gani	**2**	**6**	**2021**	**ongoing**	**Accessible Routing Using Smart Crowd-Sensed Surface Classification for Wheelchair Users**
Md Osman Gani	**0**	**3**	**2021**	**ongoing**	**Multiple projects (Knowledge-guided causality, time series causal discovery, uncertainty in causality, causal representation learning)**

Appendix M: Master Theses in the past 3 years

Faculty Name	Student Names	Year	Title
Lei Zhang	Khushdeep Kaur	2024	Quantum software testing and quantum cryptography education
Jianwu Wang	Garima Kumari	2023	Distributed Deep Learning Techniques for Remote Sensing Applications
Jianwu Wang	Rohan Salvi	2023	Spatio-temporal Multivariate Weather Data Clustering Using DBScan and K-medoids Methods
Jianwu Wang	Charan Duggirala	2023	Distributed GPU Computing For Deep Learning In Proton Beam Therapy For Cancer Treatment
Andrea Kleinsmith	Kavya Rajendran	2024	EXPLORING THE EFFECTS OF SELF-EXPRESSION MODALITIES ON POSITIVE AND NEGATIVE SELF-REFLECTION TOWARD THE DESIGN OF AN INTERACTIVE TECHNOLOGY FOR EMOTIONAL WELL-BEING
Md Osman Gani	Md Fourkanul Islam	2024	Advancing Wheelchair Accessible Navigation through Crowd-Sourced Data: Development of the MyPath System and A Computational Model for Accessibility

Appendix N: Student Publications in the past 3 years

Publication type	Citation
journal	Saulynas, S., Burgee, L., Bendigeri, A. & Kuber, R. 2022: Putting Situational Impairments in Context: Developing Guidelines for Situational Impairments and Severely Constraining Situational Impairments by Examining Parallel Domains. Universal Access in the Information Society (21), 941–966
journal	Alshathri, I., Komlodi, A. & Kuber, R. 2024: Investigating the Role of Virtual Reality to Support Community Engagement. International Journal of Instruction, 17(4), 385-404.
conference papers	Vader, M.L., Pineda, M., Hamidi, F. & Kuber, R. 2024: "Pretty Much an Advocate as Well": Investigating the Experiences of Self-Employed Individuals with Visual Impairments. In proceedings of W4A Conference – W4A'24, https://doi.org/10.1145/3677846.3677865
conference papers	Ray, H., Kuber, R. & Aviv, A.J. 2022: Investigating Older Adults' Adoption and Usage of Online Conferencing Tools During COVID-19. In proceedings of the Web4All Conference – W4A'22, Article No. 27, 1–11.
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papers	Reliable, and Beautiful Software," 2024 IEEE/ACM International Workshop on Designing Software (Designing), Lisbon, Portugal, 2024, pp. 40-45.
journal	Jebeli, A*., Chen, L.K., Guerrerio, K., Papparotto, S., Berlin, L., & Jones Harden, B. (2024). Quantifying the Quality of Parent-Child Interaction Through Machine-Learning Based Audio and Video Analysis: Towards a Vision of AI-assisted Coaching Support for Social Workers. ACM Journal of Computing and Sustainable Societies, 2(1), Article 6, 21 pages.
journal	Doran, K., Witmer, S., Yoon, K. L., Fischer, E. R., Ebangwese, A., Sharma*, S., Duggirala*, G. S. C., & Chen, L. K. (2024). Gauging the stress of long-term care nursing assistants using ecological momentary assessment, wearable sensors and end of day reconstruction. International Journal of Older People Nursing, 19, e12592.
journal	Salasky VR, Chowdhury SH*, Chen LK, Almeida E, Kong X*, Armahizer M, Pajoumand M, Schrank GM, Rabinowitz RP, Schwartzbauer G, Hu P, Badjatia N, Podell JE. Overlapping Physiologic Signs of Sepsis and Paroxysmal Sympathetic Hyperactivity After Traumatic Brain Injury: Exploring A Clinical Conundrum. Neurocrit Care. 2023 Oct 26. doi: 10.1007/s12028-023-01862-7. Epub ahead of print. PMID: 37884690.
journal	Chen, L.K.., Gillan, J., Decker, M., Eteffa, E., Marzan, A., Thai, J*., & Jewett, S. (2023). Embedding Digital Data Storytelling in Introductory Data Science Course: An Inter-Institutional Transdisciplinary Pilot Study. Journal of Problem Based Learning in Higher Education, 11(2), 126–152.
journal	Chowdhury SH*, Chen LK, Hu, P., Badjatia, N and Podell, J, Group based trajectory modeling identifies distinct patterns of sympathetic hyperactivity following traumatic brain injury, Neurocritical Care (accepted Nov 2024)
conference papers	Javiya, P.A*., Kleinsmith, A., Chen, L.K., & Fritz, J. (2024). Parsing Post-Deployment Students' Feedback: Towards a Student-Centered Intelligent Monitoring System to Support Self-Regulated Learning. Proceedings of the 25th International Conference on Artificial Intelligence in Education (AIED 2024), July 2024, Recife, Brazil.
conference papers	Anthraper, N*., Javiya, P.*, Iluru, S*., Chen, L.K., & Kleinsmith, A. (2024). PeerConnect: Co-Designing a Peer-Mentoring Support System with Computing Transfer Students. In Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '24). Association for Computing Machinery, New York, NY, USA, Article 262, 1–7.
conference papers	Hwang, K*., Wang, K., Alomair, M*., Choa, F.-S. & Chen L.K. (2024). Towards Automated Multiple Choice Question Generation and Evaluation: Aligning with Bloom's Taxonomy. Proceedings of the 25th International Conference on Artificial Intelligence in Education (AIED 2024), July 2024, Recife, Brazil.
conference papers	Hwang, K*., Challagundla, S., Alomair*, M., Janssen, D., Morton, K., Chen, L.K.., & Choa, F.-S. (2024). Towards the acceleration of human learning capabilities through AI-assisted knowledge-tree building. In SPIE Defense Commercial Sensing, Paper 13036-9, April 21-25, National Harbor, Maryland, USA.
conference papers	Kong, X*., Chowdhury, S.H*., Islam, M.F*., Podell, J.E., Hu, P., Badjatia, N., & Chen, L.K. (2023). Towards Continuous and Efficient Detection of Paroxysmal Sympathetic Hyperactivity (PSH) Episodes among Traumatic Brain Injury Patients: Exploring Human-in-the-loop Anomaly Detection Approach. AMIA Annual Symposium, November 2023.
conference papers	Alomair, M*., Pan, S., Chen L.K. The Role of Cognition and Metacognition in Data Science Problem Solving: Insights from a Field Study. Companion Proceedings 13th International Conference on Learning Analytics & Knowledge (LAK23). March 2023
conference	Hwang, K*., Challagundla, S., Alomair, M*., Chen, L.K., & Choa, F.-S. (2023). Towards AI-

papers	Assisted Multiple Choice Question Generation and Quality Evaluation at Scale: Aligning with Bloom's Taxonomy. In NeurIPS Workshop for Generative AI for Education (GAIED): Advances, Opportunities, and Challenges, New Orleans, USA.
conference papers	Sharma S*, Chen L.K. Yoon L, Doran K, Duggirala C*, Fischer E, Witmer S, Ebangwese A. Measuring and Understanding Work-related Stress using Wearable and Ecological Momentary Assessment: Insights from a Pilot Study with Long-term Care Workers. April 2023. The ACM Conference on Human Factors in Computing Systems (CHI) 2023, Workgroup on Interactive Systems in Healthcare (WISH).
conference papers	Chen L.K., Shah P, Prabhu K*, Daughrity L, Shetty S, Lopez Delgado M *, Hamidi F, Godwin K, Lipsmeyer L. ABii at School: Some Initial Findings from a Long-term In-school Field Study with a Commercial Robot-assisted Learning System. March 2023, The ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2023, Robot for Learning Workshop
conference papers	Mandalapu, V*., Gong, J., & Chen, L. Do we need to go Deep? Knowledge Tracing with Big Data. AAAI Workshop on AI Education, 2021
conference papers	F. Hasan*, Y. Li, J. R. Foulds, S. Pan, and B. Bhattacharjee. DoubleDistillation: Enhancing LLMs for informal text analysis using multistage knowledge distillation from speech and text. In Proceedings of the 26th ACM International Conference on Multimodal Interaction (ICMI), pages 526–535, 2024.
conference papers	R. Islam*, S. Pan, and J. R. Foulds. Fair inference for discrete latent variable models: An intersectional approach. In Proceedings of the 2024 ACM International Conference on Information Technology for Social Good, (GoodIT 2024), pages 188–196, New York, NY, USA, 2024. Association for Computing Machinery.
conference papers	M. M. Rahman*, S. Pan, and J. R. Foulds. Towards a unifying human-centered AI fairness framework. In Proceedings of the 2024 ACM International Conference on Information Technology for Social Good, (GoodIT 2024), page 88–92, New York, NY, USA, 2024. Association for Computing Machinery.
conference papers	C. Wang*, K. Wang*, A. Bian*, R. Islam*, K. N. Keya*, J. Foulds, and S. Pan. Do humans prefer debiased AI algorithms? A case study in career recommendation. 27th Annual Conference on Intelligent User Interfaces (IUI), 2022.
conference papers	R. Islam*, K.N. Keya*, Z. Zeng*, S. Pan, and J. R. Foulds. Debiasing career recommendations with neural fair collaborative filtering. In Proceedings of The Web Conference (WWW 2021), ArXiv preprint arXiv:2009.08955v1 [cs.IR], 2021.
conference papers	R. Islam*, S. Pan, and J. R. Foulds. Can we obtain fairness for free? Proceedings of the Fourth AAAI / ACM Conference on Artificial Intelligence, Ethics, & Society (AIES), 2021.
conference papers	K.N. Keya*, R. Islam*, S. Pan, I. Stockwell, and J. R. Foulds. Equitable allocation of healthcare resources with fair survival models. In Proceedings of the 2021 SIAM International Conference on Data Mining (SDM 2021), SIAM, 2021.
conference papers	Z. Zeng*, R. Islam*, K. Keya*, J. Foulds, Y. Song, and S. Pan. Fair representation learning for heterogeneous information networks. Proceedings of the 15th International AAAI Conference on Web and Social Media (ICWSM), arXiv Preprint arXiv:2104.08769v1 [cs.AI], 2021.
journal	C. Wang*, K. Wang*, A. Y. Bian*, R. Islam*, K. N. Keya*, J. R. Foulds, and S. Pan. When Biased Humans Meet Debiased AI: A Case Study in College Major Recommendation. ACM Transactions on Interactive Intelligent Systems (TIIS), 13(3):17, 2023
journal	R. Islam*, K. N. Keya*, S. Pan, A. D. Sarwate, and J. R. Foulds. Differential fairness: An intersectional framework for fair AI. Entropy, 25(4):660, 2023.

journal	K. Keya*, Y. Papanikolaou, and J. R. Foulds. Neural embedding allocation: Distributed representations of topic models. Computational Linguistics, 48 (4): 1021–1052, 2022.
conference papers	P. Feldman, S. Tiwari*, C. Cheah, J. R. Foulds, and S. Pan. Analyzing COVID-19 tweets with transformer-based language models. Proceedings of the 6th International Workshop on Social Sensing (SocialSens 2021), an ICWM 2021 Full-Day Workshop, ArXiv preprint arXiv:2104.10259v3 [cs.CL], 2021.
conference papers	G. Shan*, A. Roy*, J. Foulds, and S. Pan. Causal feature selection with dimension reduction for interpretable text classification. 9th Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL 2022). ArXiv preprint arXiv:2010.04609v1 [cs.LG], 2022.
	Emon Dey, Anuradha Ravi, Jared Lewis, Vinay Kumar, Jade Freeman, Timothy Gregory, Niranjan Suri, Carl Busart, Nirmalya Roy. DACC-Comm: DNN-Powered Adaptive Compression and Flow Control for Robust Communication in Network-Constrained Environment, In Proceedings of the 17th International Conference on COMmunication Systems & NETworkS (COMSNETS), Bengaluru, India, Jan 2025
conference papers	Indrajeet Ghosh, Kasthuri Jayarajah, Nicholas Waytowich, Nirmalya Roy. EEGAmp+: Investigating the Efficacy of Functional Connectivity for Detecting Events in Low-Resolution EEG, In Proceedings of the 21st EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Oslo, Norway, Nov 2024
conference papers	Indrajeet Ghosh, Garvit Chugh, Abu Zaher Md Faridee, Nirmalya Roy. Unsupervised Domain Adaptation for Action Recognition via Self-Ensembling and Conditional Embedding Alignment, In Proceedings of the 24th IEEE International Conference on Data Mining (ICDM), Abu Dhabi, UAE, Dec 2024
conference papers	Indrajeet Ghosh, Garvit Chugh, Kasthuri Jayarajah, Nirmalya Roy. β-Decode: Attention-based Decoding Temporal Artifacts via Unsupervised β-Variational Autoencoder, In Proceedings of the ACM 8th Joint International Conference on Data Science & Management of Data (12th ACM IKDD CODS and 30th COMAD), IIT Jodhpur, India, Dec 2024
conference papers	Zahid Hasan, Masud Ahmed, Abu Zaher Md Faridee, Sanjay Purushotham, Hyungtae Lee, Heesung Kwon, and Nirmalya Roy. VIVAR: Learning View-Invariant Embedding for Video Action Recognition, In Proceedings of the SPIE 8th International Conference on Video and Image Processing (ICVIP), Kuala Lumpur, Malaysia, Dec 2024
conference papers	Jumman Hossain, Abu Zaher Faridee, Nirmalya Roy, Jade Freeman, Timothy Gregory and Theron T. Trout. TopoNav: Topological Navigation for Efficient Exploration in Sparse Reward Environments, In Proceedings of the 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Abu Dhabi, Oct 2024
conference papers	Jumman Hossain, Abu Zaher Faridee, Nirmalya Roy, Derrik E. Asher, Jade Freeman, Timothy Gregory and Theron T. Trout. EnCoMP: Enhanced Covert Maneuver Planning with Adaptive Target-Aware Visibility Estimation using Offline Reinforcement Learning, In Proceedings of the IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS), Aarhus, Denmark, Sept 2024
conference papers	Avijoy Chakma, Anirban Das, Abu Zaher Md Faridee, Suchetana Chakraborty, Sandip Chakraborty, Nirmalya Roy. AcouDL: Context-Aware Daily Activity Recognition from Natural Acoustic Signals, in Proceedings of the 8th IEEE International Workshop on Smart Service Systems (SmartSys), co-located with IEEE SMARTCOMP 2024, Osaka, Japan, June 2024
conference papers	Francesca Righetti, Carlo Vallati, Nirmalya Roy and Giuseppe Anastasi. Is Edge Computing Always Suitable for Image Analysis? An Experimental Analysis, In Proceedings of the IEEE 25th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)

	workshop, Perth, Australia, June 2024
conference papers	Masud Ahmed, Zahid Hasan, Abu Zaher Md Faridee, Mohammad Saeid Anwar, Kasthuri Jayarajah, Sanjay Purushotham, Suya You and Nirmalya Roy. ARSFineTune: On-the-Fly Tuning of Vision Models for Unmanned Ground Vehicles, in Proceedings of the 20th Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2024), Abu Dhabi, UAE, April 2024
conference papers	Zahid Hasan, Masud Hasan, Abu Zaher Md Faridee, Sanjay Purushotham, Heesung Kwon, Hyungtae Lee, Nirmalya Roy. NEV-NCD: Negative Learning, Entropy, and Variance regularization based novel action categories discovery, In Proceedings of the 2023 IEEE International Conference on Image Processing (ICIP), Kuala Lumpur, Malaysia, Oct 2023
conference papers	Jumman Hossain, Abu-Zaher Faridee, Nirmalya Roy, Anjan Basak and Derrik E. Asher. CoverNav: Cover Following Navigation Planning in Unstructured Outdoor Environment with Deep Reinforcement Learning, In Proceedings of the IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS), Toronto, Canada, Sept 2023
conference papers	Mohammad Saeid Anwar, Emon Dey, Maloy Kumar Devnath, Indrajeet Ghosh, Naima Khan, Jade Freeman, Timothy Gregory, Niranjan Suri, Kasthuri Jayaraja, Sreenivasan Ramasamy Ramamurthy, and Nirmalya Roy. HeteroEdge: Addressing Asymmetry in Heterogeneous Collaborative Autonomous Systems. In Proceedings of the 20th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS 2023), Toronto, Canada, Sept 2023
conference papers	Emon Dey, Mikolaj Walczak, Mohammad Saeid Anwar, Nirmalya Roy, Jade Freeman, Timothy Gregory, Niranjan Suri and Carl Busart. A Novel ROS2 QoS Policy-enabled Synchronizing Middleware for Co-simulation of Heterogeneous Multi-Robot Systems, in Proceedings of the 32nd IEEE International Conference on Computer Communications and Networks (ICCCN), Honolulu, HI, USA, July 2023
conference papers	Naima Khan, Md Abdullah Al Hafiz Khan and Nirmalya Roy. Unsupervised spatio-temporal anomalous thermal behavior monitoring of inside-built environments, in Proceedings of the 19th Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2023) Coral Bay, Pafos, Cyprus, June 2023 Best Paper Award
conference papers	Maloy Kumar Devnath, Avijoy Chakma, Mohammad Saeid Anwar, Emon Dey, Zahid Hasan, Marc Conn, Biplab Pal, and Nirmalya Roy. A Systematic Study on Object Recognition Using Millimeter-wave Radar, in Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023
conference papers	Zahid Hasan, Abu Zaher Md Faridee, Masud Ahmed and Nirmalya Roy. SrPPG: Semi-Supervised Adversarial Learning for Remote Photoplethysmography with Noisy Data, in Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023 Best Paper Award
conference papers	Masud Ahmed, Zahid Hasan, Tim Yingling, Eric O'Leary, Sanjay Purushotham, Suya You and Nirmalya Roy. An Online Continuous Semantic Segmentation Framework with Minimal Labeling Efforts, in Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023
conference papers	Indrajeet Ghosh, Adam Goldstein, Avijoy Chakma, Jade Freeman, Timothy Gregory, Niranjan Suri, Sreenivasan Ramasamy Ramamurthy, and Nirmalya Roy. HeteroSys: Heterogeneous and Collaborative Sensing in the Wild, in Proceedings of 9th IEEE International Workshop on Sensors and Smart Cities, co-located with the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023
conference	Avi Spector, Wanying Zhu, Jumman Hossain and Nirmalya Roy, Simulated Forest Environment

papers	and Robot Control Framework for Integration with Cover Detection Algorithms, in Proceedings of Symposium for Undergraduate Research in Data Science, Systems, and Security (REU Symposium 2022) co-located with 9th IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT'22), Vancouver, Washington, USA December 2022
conference papers	Indrajeet Ghosh, Avijoy Chakma, Sreenivasan Ramasamy Ramamurthy, Nicholas Waytowich and Nirmalya Roy. PerMTL: A Multi-Task Learning Framework for Skilled Human Performance Assessment, in Proceedings of the 21st IEEE International Conference on Machine Learning and Applications (IEEE ICMLA'22), Bahamas, Caribbean, December 2022
conference papers	Zahid Hasan, Abu Zaher Md Faridee, Masud Ahmed and Nirmalya Roy. Self-rPPG: Learning the Optical and Physiological Mechanics of Remote Photoplethysmography with Self -Supervision, in Proceedings of the IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), Washington D.C., Nov 2022
conference papers	Francesca Righetti, Carlo Vallati, Andrea Tubak, Nirmalya Roy, Bipendra Basnyat, Giuseppe Anastasi. Assessing the Feasibility of Exploiting Edge Computing for Real-Time Monitoring of Flash Floods, in Proceedings of the 8th IEEE International Workshop on Sensor and Smart Cities (SSC) co-located with IEEE SMARTCOMP 2022, Espoo, Finland, June 2022
conference papers	Indrajeet Ghosh; Matthew Ivler; Sreenivasan Ramasamy Ramamurthy; Nirmalya Roy. SpecTextor: End-to-End Attention-based Mechanism for Dense Text Generation in Sports Journalism, in Proceedings of the 7th IEEE International Workshop on Smart Service Systems (SmartSys), co-located with IEEE SMARTCOMP 2022, Espoo, Finland, June 2022
conference papers	Masud Ahmed, Naima Khan, Pretom Roy Ovi, Nirmalya Roy, Aryya Gangopadhyay, Sanjay Purushotham, and Suya You. GADAN: Generative Adversarial Domain Adaptation Network for Debris Detection Using Drone, IEEE 4th International Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT'22) co-located with IEEE DCOSS 2022, Marina Del Rey, LA, California, US June 2022
conference papers	Emon Dey, Jumman Hossain, Nirmalya Roy, Carl Busart. SynchroSim: An Integrated Co-Simulation Middleware for Heterogeneous Multi-Robot System, in Proceedings of 6th IEEE International Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE'22) co-located with IEEE DCOSS 2022, Marina Del Rey, LA, California, USA, June 2022
conference papers	Zahid Hasan, Emon Dey, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy, Archan Misra. RhythmEdge: Enabling Contactless Heart Rate Estimation on the Edge, in Proceedings of the 8th IEEE International Conference on Smart Computing (SmartComp), Espoo, Finland, June 2022 Best Paper Award
conference papers	Abu Zaher Md Faridee, Avijoy Chakma, Zahid Hasan, Nirmalya Roy, Archan Misra. CoDEm: Conditional Domain Embeddings for Scalable Human Activity Recognition, in Proceedings of the 8th IEEE International Conference on Smart Computing (SmartComp), Espoo, Finland, June 2022
conference papers	Md Abdullah Al Hafiz Khan and Nirmalya Roy. Cross-Domain Unseen Activity Recognition Using Transfer Learning, in Proceedings of IEEE Computers, Software, and Applications Conference (COMPSAC), June 2022
conference papers	Avijoy Chakma, Abu Zaher Md Faridee, Nirmalya Roy and Raghuveer Rao. Semi-supervised Multi-source Domain Adaptation in Wearable Activity Recognition, in Proceedings of 18th International Conference on Distributed Computing in Sensor Systems (DCOSS), Marina Del Rey, LA, California, June 2022
conference	Bipendra Basnyat, Nirmalya Roy, Aryya Gangopadhyay, Adrienne Raglin. Environmental Sound

papers	Classification for Flood Event Detection, in Proceedings of IEEE International Conference on Intelligent Environments (IE), June 2022
conference papers	Masud Ahmed, Zahid Hasan, Naima Khan, Nirmalya Roy, Aryya Gangopadhyay, Sanjay Purushotham, Suya You. Benchmarking domain adaptation for semantic segmentation, In Proceedings of SPIE Defense + Commercial Sensing, April 2022
conference papers	Pretom Roy Ovi, Emon Dey, Nirmalya Roy, Aryya Gangopadhyay, Robert Erbacher. Towards developing data security aware Federated Training framework in the multi-modal battlefield environment, In Proceedings of SPIE Defense + Commercial Sensing, April 2022 Best Student Paper Award
conference papers	Sreenivasan Ramasamy Ramamurthy, Soumyajit Chatterjee, Elizabeth Galik, Aryya Gangopadhyay, Sandip Chakraborty, Bivas Mitra, Nirmalya Roy. CogAx: Early Assessment of Cognitive and Functional Impairment from Accelerometry, in Proceedings of the 20th IEEE International Conference on Pervasive Computing and Communications (PerCom), Pisa, Italy, March 2022
journal	Indrajeet Ghosh, Sreenivasan Ramasamy Ramamurthy, Avijoy Chakma and Nirmalya Roy. Sports Analytics Review: AI Applications, Emerging Technologies and Algorithmic Perspective, WIREs Data Mining and Knowledge Discovery, 2023
journal	Sreenivasan Ramasamy Ramamurthy, Indrajeet Ghosh, Aryya Gangopadhyay, Elizabeth Galik, Nirmalya Roy. STAR-Lite: A Light-weight Scalable Self-taught Learning Framework for Older Adults' Activity Recognition, Pervasive and Mobile Computing (PMC) Journal, Elsevier 2022
journal	Indrajeet Ghosh, Sreenivasan Ramasamy Ramamurthy, Avijoy Chakma and Nirmalya Roy. DeCoach: Deep Learning-based Coaching for Badminton Player Assessment, Pervasive and Mobile Computing (PMC) Journal, Elsevier 2022
journal	Neha Singh and Nirmalya Roy. Transfer Machine Learning Algorithms, Encyclopedia of Sensors and Biosensors, 2022
journal	Varun Mandalapu, Lavanya Elluri, Piyush Vyas, Nirmalya Roy. Crime Prediction Using Machine Learning and Deep Learning: A Systematic Review and Future Directions, IEEE Access, 2023
journal	Lavanya Elluri, Varun Mandalapu, Piyush Vyas, Nirmalya Roy. Recent Advancements in Machine Learning for Cybercrime Prediction, Journal of Computer Information Systems, 1-15. 2023
conference papers	*Surely, A., *Misal, V., *Taherzadeh, S., Williams, G., Jenkins, JL, Mentis, H., Kleinsmith, A. (2024). Enhancing Stress Understanding through Team Reflection: Technology-Driven Insights in High-Stress Training Scenarios. Proceedings of the 3rd Annual Meeting of the Symposium on Human-Computer Interaction for Work (CHIWORK) (pp. 1-18).
conference papers	*Surely, A., *Taherzadeh, S., *Misal, V., Kleinsmith, A. (2022). Exploring Affective Dimension Perception from Bodily Expressions and Electrodermal Activity in Paramedic Simulation Training. In 2022 10th Int'l Conference on Affective Computing and Intelligent Interaction (ACII) (pp. 1-8).
conference papers	*Surely, A., *Misal, V., *Taherzadeh, S., Williams, G., Mentis, H., Kleinsmith, A. (2024). Design and Preliminary Evaluation of a Stress Reflection System for High-Stress Training Environments, ICMI Companion Proceedings
journal	Devon Dunmire, Aneesh Subramanian, Emam Hossain, Md Osman Gani, Alison Banwell, Hammad Younas, Brendan M Myers, "Greenland Ice Sheet wide supraglacial lake evolution and dynamics: insights from the 2018 and 2019 melt seasons," Earth and Space Science, Accepted for publication, December, 2024.

journal	Uzma Hasan, Emam Hossain, Md Osman Gani, “A Survey on Causal Discovery Methods for IID and Time Series Data,” Transactions on Machine Learning Research (TMLR), Sept 2023, https://openreview.net/pdf?id=YdMrdhGx9y.
journal	Md Osman Gani, Shravan Kethireddy, Riddhiman Adib, Uzma Hasan, Paul Griffin, and Mohammad Adibuzzaman. "Structural causal model with expert augmented knowledge to estimate the effect of oxygen therapy on mortality in the ICU." Artificial Intelligence in Medicine 137 (2023): 102493.
journal	Haoxiang Yu, Vaskar Raychoudhury, Snehanshu Saha, Janick Edinger, Roger O. Smith and Md Osman Gani, "Automated Surface Classification System using Vibration Patterns - A Case Study with Wheelchairs," in IEEE Transactions on Artificial Intelligence, 2022, Pages 1-11, doi: 10.1109/TAI.2022.3190828
conference papers	Emam Hossain, Md Osman Gani, Devon Dunmire, Aneesh Subramanian, Hammad Younas, “Time Series Classification of Supraglacial Lakes Evolution over Greenland Ice Sheet”, 23rd International Conference on Machine Learning and Applications, 2024.
conference papers	Rochishnu Banerjee, Ethan Han, Longze Li, Haoxiang Yu, Md Osman Gani, Vaskar Raychoudhury, Roger O Smith, “FedAccess: Federated Learning-Based Built Surface Recognition for Wheelchair Routing,” IEEE 48th Annual Computers, Software, and Applications Conference (COMPSAC), 2024
conference papers	Muhammad Hasan Ferdous, Uzma Hasan, Md Osman Gani, “CDANs: Temporal Causal Discovery from Autocorrelated and Non-Stationary Time Series Data,” Machine Learning for Healthcare Conference, Proceedings of Machine Learning Research, Volume 219, Pages 186-207, 2023.
conference papers	Uzma Hasan, and Md Osman Gani, "KCRL: A Prior Knowledge based Causal Discovery Framework with Reinforcement Learning.", Machine Learning for Healthcare Conference, Proceedings of Machine Learning Research, Volume 182, Pages 1-24, 2022.
conference papers	Rochishnu Banerjee, Md Fourkanul Islam, Shaswati Saha, Vaskar Raychoudhury, and Md Osman Gani. "Surface Recognition from Wheelchair-induced Noisy Vibration Data: A Tale of Many Cities." In 2022 18th International Conference on Mobility, Sensing and Networking (MSN), pp. 619-626. IEEE Computer Society, 2022.
conference papers	Shaswati Saha, Lauren A. Selingo, Hanna M. Noyce, Emily M. Olejniczak, Roger O. Smith, Vaskar Raychoudhury, and Md Osman Gani, MyPath: Accessible Routing for Wheelchair Users, RESNA Conference, 2022.
conference papers	Hanna M. Noyce, Emily M. Olejniczak, Lauren A. Selingo, Roger O. Smith, Vaskar Raychoudhury, Shaswati Saha, and Md Osman Gani, Community Accessibility for Wheelchair Users as Seen Through the Lens of I-Corps Interviews, RESNA Conference, 2022.
conference papers	Valeria Mokrenko, Haoxiang Yu, Vaskar Raychoudhury, Janick Edinger, Roger O. Smith and Md Osman Gani, "A Transfer Learning Approach to Surface Detection for Accessible Routing for Wheelchair Users," 2021 IEEE 45th Annual Computers, Software, and Applications Conference (COMPSAC), 2021, pp. 794-803, doi: 10.1109/COMPSAC51774.2021.00112.
presentation	Emam Hossain, Sahara Ali, Yiyi Huang, Nicole-Jeanne Schlegel, Jianwu Wang, Aneesh Subramanian, Md Osman Gani, “Incorporating Causality with Deep Learning in Predicting Short-Term and Seasonal Sea Ice.” AMS Annual Meeting, 2024
presentation	Aneesh Subramanian, Devon Dunmire, Emam Hossain, Md Osman Gani, Alison Banwell, Brendan M Myers, “The fate of Greenland Ice Sheet supraglacial lakes in a warm and cool year.” EGU General Assembly Conference, April 2024.

presentation	Muhammad Hasan Ferdous, Uzma Hasan, Md Osman Gani, “eCDANs: Efficient Temporal Causal Discovery from Autocorrelated and Non-stationary Data”, AAAI Student Abstract, Washington DC, 2023.
presentation	Sourajit Saha, Shaswati Saha, Md Osman Gani, Tim Oates, and David Chapman. "RFC-Net: Learning High Resolution Global Features for Medical Image Segmentation on a Computational Budget.", AAAI Student Abstract, Washington DC, 2023.
presentation	Shaswati Saha, Md Fourkanul Islam, Roger O. Smith, Vaskar Raychoudhury, and Md Osman Gani “Redefining Wheelchair Accessibility through Cross-Domain Knowledge Transfer (WheelTransfer)”, Occupational Therapy Summit, Madison, WI 2022.
presentation	Uzma Hasan, Md Osman Gani. “Towards Developing an Explainable Healthcare Framework With AI-Human Collaboration - A Causal Perspective”, Student Research Competition, IEEE International Conference on Digital Health, 2021.

Appendix O: Ph.D. students graduated during 2019-2025

Student Name	Program	Year	Employment	Dissertation Title
Wang, Jieyu	HCC	2019	Assistant Professor, St. Cloud State University	Understanding Searchers' Language Selection: Code-switching in Online Searches
Reitz, Galina M	HCC	2019	Faculty Program Director, University of Maryland	Supporting Caregivers and Care Recipients after the Onset of Cognitive Impairment with Home Based Technology
Argiropoulos, Foteini Cheirdari	IS	2019	Department of Defense	Verifying Software Code Vulnerabilities Using Machine Learning and Classification Techniques
Odebode, Iyanuoluwa E	IS	2019	CTO, Robolytics	Network Analytics towards Drug Repurposing using Phosphorylated
Anam, Amrita	IS	2019	Manager, Data Science and AI, Gen Re	Proteins.
Van Dyke, Erin K	IS	2019	Graduate Program Director, UMBC	Response with Time-Frequency Analysis
Pathak, Nilavra	IS	2019	Senior Machine Learning Scientist at Expedia Group	Analysis of Energy Disaggregation for Sustainable Building Applications
Khan, Md Abdullah Al Hafiz	IS	2019	Assistant Professor, Kennesaw State University	Cross-Domain Scalable Activity Recognition Models in Smart Environments
Zhang, Yili	IS	2019		Development of a Collaborative Data Quality Improvement Approach for Healthcare Organizations
Feldman, Philip G	HCC	2020		Stampede Theory: Mapping and Treating Dangerous Misinformation at Scale
Ondego, Victor K	HCC	2020		Web Search Behavior and Results Selection by Non-Native English Searchers
Grice, Rachel	HCC	2020	Senior Engineering Psychologist, Federal Railroad Administration	A Head-Up Display to Reduce Distraction for Locomotive Engineers
Haney, Julie M	HCC	2020	National Institute of Standards and Technology	The Work of Cybersecurity Advocates
Johnson, Shawn	IS	2020	MITRE Corporation	A Framework for Enforcement of Purpose-Based Access Control

Yang, Fan	IS	2020	Invexer Technologies Inc	Improving Robustness of Data Mining Models in Cybersecurity Applications
Hossain, H M Sajjad	IS	2020	Machine Learning Scientist II, Microsoft	Active Activity Recognition with Context-Aware Annotator Selection
Jademi, Onimi P	IS	2020		
Feng, Yuanyuan	IS	2020		UNDERSTANDING KNOWLEDGE SHARING IN SURGICAL TELEMENTORING
Parameshwarappa, Pooja	IS	2020	Kaiser Permanente	Clustering Approaches for Anonymizing High-dimensional Sequential Activity Data
Easley, William B	HCC	2021	Human Factors Design Engineer, Apple	Understanding and Supporting Collaboration Between Youth in Technical Workplaces
Saulynas, Sidas A	HCC	2021	Lecturer, UMBC	Towards Developing Guidelines for Addressing Situationally Induced Impairments and Disabilities (SIID) and Severely Constraining Situational Impairments (SCSI)
Abdolrahmani, Ali	HCC	2021	Education Program Specialist I, Maryland State Department of Education	Investigating Ways to Support the Use of Voice Assistants (Vas) Among Individuals Who Are Blind
Alodadi, Mohammad	IS	2021	NIH	KNOWLEDGE DISCOVERY THROUGH LINKING MULTIPLE HETEROGENEOUS, UNSTRUCTURED DATA STREAMS: A CASE OF CLINICAL NOTES MINING
Rayes, Wajanat A	IS	2021	Assistant Professor, Umm Al-Qura University	
Alasmari, Ashwag M	IS	2021	Assistant Professor, King Khalid University	
Quader, Faisal	IS	2021	CEO, Technuff LLC	ANOMALY DETECTION ACROSS MULTI SCALE TEMPORAL DATA STREAMS FOR HUMAN BEHAVIOR MODELING
Mandalapu, Varun	IS	2021	Senior Data Scientist, Mutual of Omaha	Profiling and Modeling Student Learning Behaviors & Outcomes from Digital Learning Environments
Zhang, Wenbin	IS	2021	Assistant Professor, Florida International University	Learning Fairness and Graph Deep Generation in Dynamic Environments
Wolf, Flynn M	HCC	2022		Investigating Mental Models of Risk among Security-Expert Users

Lee, Heera	HCC	2022	Lecturer and Program Director, University of Maryland	Developing an Approach to Support Instructors to Provide Emotional and Instructional Scaffolding for English Language Learners through Biosensor-Based Feedback
Alodadi, Nujood M	IS	2022		
Pillai, Manesh R	IS	2022	Senior IT Specialist at Montgomery County Government	A Multilayer Semantic Augmentation Model for Geographic Information Applications
Basnyat, Bipendra	IS	2022	CEO, AI Sense LLC	Vision and AI Enabled Flood Detection Systems in Urban Environment
Roy, Arpita	IS	2022	Researcher at Expedia	Combining Text Embedding with Additional Knowledge for Information Extraction
Oni, Samson A	IS	2022	Amazon	Secure & Flexible Information Sharing in Federated Systems
Aldaeej, Abdullah A	IS	2022	Imam Abdulrahman Bin Faisal University	TOWARDS EFFECTIVE TECHNICAL DEBT DECISION MAKING IN SOFTWARE STARTUPS: A MULTIPLE CASE STUDY OF WEB AND MOBILE APP STARTUPS
MANDALAPU, Varun	IS	2022		
GUO, Pei	IS	2022	Data Scientist, Wyze Labs	Scalable Multivariate Causality Discovery From Large-scale Global Spatiotemporal Climate Data
elluri, lavanya	IS	2022	Assistant Professor, Texas A&M University - Central Texas	A Semantically Rich Framework to Enable Real-time Knowledge Extraction and Classification from Short Length Semi-Structured Documents
Akinsiku, Adegboyega O	HCC	2023		
Ray, Hirak	HCC	2023	User Experience Researcher, University of Virginia	Towards Understanding Usable Privacy Concerns Among Older Adults
Semsar, Azin	HCC	2023	Senior User Studies Researcher, Apple	Understanding Socio-technical Challenges and Benefits of Instructional Tools in Telementoring
Perrella, Ronald	IS	2023		
Razavisousan, Ronak	IS	2023	Assistant Professor, Coppin State University	Building Textual Fuzzy Interpretive Structural Modeling to Analyze

				Complex Problems
Faridee, Abu-Zaher	IS	2023	Applied Scientist, Amazon	Building Robust Human Activity Recognition from Unlabeled Data
Singh, Neha	IS	2023	Lecturer, Washington University in St. Louis	A Scalable Holistic Physical and Social Sensing Framework for Disaster Management
Ramasamy Ramamurthy, Sreenivasan	IS	2023	Assistant Professor, Bowie State University	A Counterfactual Verified Semi-Supervised Learning Framework for Older Adults' Functional and Cognitive Health Assessment
Shi, Peichang	IS	2023	Senior lead data scientist, Booz Allen Hamilton	Interpretable Deep Learning Models For Electronic Health Records
Ajayi, Oluwagbemiga N	IS	2023	Business Intelligence Engineer, Amazon	Developing Cross Domain Intrusion Detection Systems
ALSHATHRI, Iman	IS	2023	Assistant Professor, King Saud University	Applying Virtual Reality to Motivate and Prepare International Students for Community Engagement
Islam, Rashidul	IS	2023	Intersectional Fairness in Machine Learning: Measurements, Algorithms, and Applications	Intersectional Fairness in Machine Learning: Measurements, Algorithms, and Applications
Wang, Xin	IS	2023	Post-doc, Tsinghua University	Secure, Reproducible And Adaptive Machine Learning In Distributed Systems.
Huang, Xin	IS	2024	Assistant Professor, Towson University	Deep Learning based Cloud Retrieval Techniques using Multiple Satellite Remote Sensing Data
Rupa, Anamika Paul	IS	2024	Lecturer, Department of Electrical Engineering and Computer Science, Howard University	Multi-modal Deep Fusion for Activity Detection
Khan, Naima	IS	2024	ORISE Research Fellow at FDA	An IoT Assisted Machine Learning Framework for Monitoring the Thermal Variation on Building Envelope
KIM, Leroy	IS	2024	Postdoctoral Fellow in Children’s National Hospital.	Trusted Compliance Enforcement Framework for Large Volume and High Velocity Data
Chakma, Avijoy	IS	2024	Assistant Professor, Bowie State University	Towards Developing Scalable Human Activity Recognition Approach in IoT
SARKAR, ARGHO	IS	2024	AI/ML Researcher Memorial Sloan Kettering Cancer Center	Towards Explainable Machine Learning Models for Remote Sensing: Multi-modal and Uni-modal

				Applications for Natural Disaster
Walid, Redwan	IS	2024	Data Scientist, GEICO	Cloud-Based Encrypted EHR System with Semantically Rich Access Control
Varshney, Debvrat	IS	2024	Postdoctoral Researcher, Oak Ridge National Lab	Hybrid Deep Learning to Trace Snow Layers through Radargrams
Ordun, Catherine	IS	2024	Vice President at Booz Allen Hamilton	Multimodal Deep Generative Models for Cross-Spectral Image Analysis
Chowdhury, Tashnim	IS	2024	Faculty, Capitol Technology University	Supervised and Semi-Supervised Semantic Segmentation for Natural Disaster Damage Assessment
Xenakis, Antonios	IS	2024		Enabling Data Privacy through Anonymization of Structured Datasets in Centralized and Distributed Environments
Ali, Sahara	IS	2025	Assistant Professor (Tenure track), University of North Texas	Spatiotemporal Forecasting and Causality Methods for Arctic Amplification
Rahman, Md Mahmudur	IS	2025	Applied Scientist, Amazon	Fair and Interpretable Pseudo Value-Based Deep Learning Models for Federated Survival Analysis
Kempe, Evelyn	IS	2025	US Military Academy, West point	Regulatory Compliance within the Software Industry: Interpretation of Regulatory Ambiguity as a Compliance Concern
Ovi, Pretom Roy	IS	2025	Assistant Professor (Tenure track), University of North Texas	A Robust Federated Learning Framework against Cyber Intrusions to Ensure Data Confidentiality and Model Integrity
Clavin, James	IS	2025	CTO, Hilltop Institute	A Medical Data Polygraph for Examining Healthcare Claims
Jwawon Seo	HCC	2024	Postdoc at Drexel	SHAPING OWNERSHIP IN AUGMENTED REALITY: THE IMPACT OF ANNOTATION CONTROL ON PSYCHOLOGICAL OWNERSHIP AND COLLABORATION

CURRICULUM VITAE

ANITA KOMLODI

Education

Ph.D.	2002	University of Maryland, College Park, MD Library and Information Science
M.L.S.	2000	University of Maryland, College Park, MD Library and Information Science
M.A. equiv.	1994	Kossuth Lajos University, Debrecen, Hungary English; Library and Information Science

Experience in Higher Education

2021 – present	University of Maryland, Baltimore County, Associate Director, Imaging Research Center, CAHSS
2008 – present	University of Maryland, Baltimore County, Associate Professor, Information Systems, COEIT
2019 – 2021	University of Maryland, Baltimore County, Graduate Program Director, Online Information Systems Master's Program
2008 – 2016	University of Maryland, Baltimore County, Graduate Program Director for Human-Centered Computing, Information Systems
2012 - 2013	Budapest University of Technology and Economics, Visiting Researcher, EU Marie Curie International Incoming Fellow, Ergonomics and Psychology
2002 – 2008	University of Maryland, Baltimore County, Assistant Professor, Information Systems
2003 – 2006	University of Maryland, Baltimore County, Director of Research, Information Systems
2001 – 2002	University of Maryland, Baltimore County, Lecturer, Information Systems
1995 – 2001	University of Maryland, College Park, Research and Teaching Assistant, Library and Information Science
1995 – 2001	University of Maryland, College Park, Research Assistant, Computer Science

Experience in Other than Higher Education

3/2001	University Library, University of Debrecen, Hungary, Web Development Consultant
3/1999 – 5/1999	Joint World Bank – International Monetary Fund Library, Washington, DC, Consultant
1/1995 – 8/1995	IQSoft Intelligent Software Co. Ltd., Budapest, Hungary, Library Automation Advisor
9/1994 – 12/1994	The Library of Congress, Washington, DC, Soros Foundation Visiting Fellow

Honors Received

2015-present	UMBC ADVANCE Leadership Cohort Invited Member
2004 – 2005	NSF ADVANCE Research Assistant Fellowship, UMBC

2000	Doctoral Workshop Member, American Society for Information Science and Technology, Annual Conference, Chicago
2000	Doctoral Workshop Member, The Third International Conference on Information Needs, Seeking and Use in Different Contexts. Göteborg & Borås, Sweden
2000	Doctoral Consortium Member, Association for Computing Machinery, Special Interest Group on Computer-Human Interaction, Human Factors in Computing Systems Conference (ACM SIGCHI), The Hague, The Netherlands
1999	Eugene Garfield Doctoral Dissertation Fellowship, Beta Phi Mu International Library and Information Studies Honor Society
1997	Goldhaber Travel Grant, The Graduate School of the University of Maryland, College Park
1996	Scholarship of the American Society for Information Science, Potomac Valley Chapter
1995	Supplementary Grant for Graduate Studies, Soros Foundation
1994	Library of Congress– Soros Foundation Visiting Fellowship

Research Support and/or Fellowships Total Cost (Direct Cost)

2022 – 2024	(rs19) "Multidisciplinary Internship Experiences in the Imaging Research Center", Hrabowski Innovation Fund Grant, UMBC, $9,900, Principal Investigator
2022 – 2024	(rs18) "Development and Market Research for SEEe, a Human-Centered Immersive Analytics Environment for Complex Dynamic Systems", UMBC, $15,000, (PI: Lee Boot)
2023 – 2024	(rs17) "CIDER: Visualizing the Factors in K-12 Education Success", UMBC, $50,000, Co-PI, (PI: Lee Boot)
2020 – 2021	(rs16) "FW-HTF-P: Telemedicine at Scale: Expanding the Healthcare Workforce and Healthcare Access," National Science Foundation, $149,899.00. Co-PI, (PI: Mentis, Helena M)
2019 – 2022	(rs15) "WORKSHOP: iConference 2019 Doctoral Colloquium," National Science Foundation, PI, $20,038.00.
2017 – 2020	(rs14) "II-New: Flexible User Interaction Instrumentation for Ubiquitous and Immersive Computing Environments", National Science Foundation, $356,657 ($340,774), Co-PI, (PI: Kleinsmith).
2017 – 2024	(rs13) Broadening Student Engagement with Virtual and Augmented Reality Technologies, Hrabowski Innovation Fund Grant, UMBC, $24,961.36, Principal Investigator
2015 – 2016	(rs12) Institutional Support for Post-Family Leave Faculty Research Reintegration Award (UMBC's NSF Eager On Ramps to Full Professor) ($25,600.00), UMBC, Principal Investigator
2012 – 2014	(rs11) Online Searching in a Foreign Language, $48,686.00 ($48,686.00), Google, Inc., Principal Investigator
2012 – 2013	(rs10) Marie Curie International Incoming Fellowship, $159,955.77 ($148,758.00), European Commission, beneficiary: Budapest University of Technology and Economics, Budapest, Hungary, Fellow

2009 – 2011	(rs9) Maryland Judiciary Website Redesign, $120,000 ($109,091), Maryland State Judiciary, Co-Principal Investigator
2007 – 2009	(rs8) MRI: Acquisition of Equipment to Establish a Research Infrastructure to Support HCI and UA Research, $180,000 ($180,000), National Science Foundation, Co-Principal Investigator
2006 – 2011	(rs7) GSE/DIS: A Coherent Global Web Portal of Resources for Women and ICT, $196,825.00 ($153,589), National Science Foundation, Principal Investigator: Two supplements provided the following additional amounts : Supplement 1: 2007-2010 $24,796 ($22,560.00) Supplement 2: 2009-2010 $40,351 ($28,714.00)
2004 – 2007	(rs6) Enhancing Science and Technology Education and Exploration Mentoring (ESTEEM), $868,776 ($737,905), National Science Foundation, Principal Investigator
2004 – 2008	(rs5) GSE/RES Investigating Gender-Based Differences in Perception and Use of IT as Factors in IT Career Choice, $539,385 ($439,049), National Science Foundation, Co-Principal Investigator
2003 – 2007	(rs4) Technology for Cross-Cultural Communication in a Children's International Book Community, $136,047, University of Maryland, College Park, MD (subaward from National Science Foundation grant), Principal Investigator
2002 – 2004	(rs3) $72,159, National Security Agency, Co-Principal Investigator
2002 – 2004	(rs2) $108,730, National Security Agency, Co-Principal Investigator
2002 – 2002	(rs1) $5,000, University of Maryland, Baltimore County, Principal Investigator

Ph.D. Students

Priya Rajasagi, 2025 (expected), Chair
Hye-Kyung Bae, 2025 (expected), Co-Chair
Iman Alshathri, 2023, Co-Chair
Ashwag Alasmari, 2021, Co-Chair
Wajanat Rayes, 2020, Chair
Victor Ondego, 2020, Chair
Jieyu Wang, 2018, Chair
Peng Chu, 2017, Chair
Kathleen Weaver, 2014, Chair
Celeste Paul, 2013, Chair
Weimin Hou, 2008, Chair

Lydia Stamato, 2025 (expected), member
Elliot Talbert-Goldstein, 2025 (expected), member
Jwawon Seo, 2024 (expected), member
Hirak Ray, 2022, Member
Heera Lee, 2022, Member
Ali Abdolrahmani, 2021, Member
William Easley, 2020, Member
Julie Haney, 2020, Member
Sidas Saulynas, 2020, Member

Flynn Wolf, 2021 (expected), Member
Fahad Alayed, 2016, Member
Michele Williams, 2015, Member
Alyson Young, 2015, Member
Rahayu Ahmad, 2014, Member
Huimin Qian, 2014, Member
Huijuan (Jocelyn) Wu, 2013, Member
Ryan Getek, 2010, Member
George M. Chinnery, 2009, Member
Alfreda Chatham, 2008, Member
Kevin White, 2010, Member
David Gurczik, 2009, Member
Liwei Dai, 2008, Member
Michael Carlin, 2009, Member
John Goodall, 2006, Member
Diana Ye Wang, 2006, Member
Eleanor Boyle Chlan, 2004, Member
Chadia Abras, 2003, Member

Master's Students

Kavya Rajendran, 2024, Member
Yu Shi Tseng, 2021, Member
Anirudh Nagraj, 2021, Member
Vaishnavvi Viswanathan, 2020, Member
Ashwag Alasmari, 2015, Committee Member
Bruce Emmerling, 2010, Committee Member
Kevin White, 2004, Committee Member
Amit Joshi, 2004, Committee Member
Azfar Karimullah, 2003, Committee Member

Undergraduate Students

Kaoru Seki, Information Systems, IRC Internship Mentor 2024
Jasmine Jones, Interdisciplinary Studies Degree, Faculty Advisor
Tawny Barin, 2007-08, UMBC Undergraduate Research Award, Mentor
Heidi Lynn Brueckner, 2006, Interdisciplinary Studies Degree, Member

Teaching

Courses Taught 2019-2024

IS 295 Intermediate Business Applications
IS 480 Information Visualization
IS 698 User Experience of Virtual and Augmented Reality
IS 706 Interfaces for Information Visualization and Retrieval
IS 805 Qualitative Research Methods

Independent studies and dissertation credits

Publications

Peer-Reviewed Works

Journal Articles: Peer-Reviewed Works

(j17) Hercegfi, K., **Komlodi, A.,** Koles, M., Tovolgyi, S. (2019) Eye-tracking Based Wizard-of-Oz Usability Evaluation of an Emotional Display Agent Integrated to a Virtual Environment. Acta Polytechnica Hungarica.

(j16) Geszten, D., **Komlodi, A.,** Hercegfi, K., Hámornik, B., Young, A., Köles, M., & Lutters, W. G. (2018). A Content-Analysis Approach for Exploring Usability Problems in a Collaborative Virtual Environment. Acta Polytechnica Hungarica, 15(5), 67-88.

(j15) Celeste Paul, **Anita Komlodi**, Wayne Lutters (2015) Interruptive Notifications in Support of Task Management. Special Issue on Multitasking and Interruptions of the International Journal of Human-Computer Studies. Volume 79, July 2015, Pages 20–34. Special Issue on Integrating Knowledge of Multitasking and Interruptions Across Different Perspectives and Research Methods.

(j14) Weimin Hou, **Anita Komlodi**, Wayne Lutters, Karoly Hercegfi, Jennifer J. Preece & Allison J. Druin (2015): Supporting children's online identity in international communities, Behaviour & Information Technology, DOI: 10.1080/0144929X.2014.948490 Volume 34, Issue 4, April 2015, pages 375-391.

(j13) Nadia Caidi, **Anita Komlodi,** Aline Lima Abrao, Aqueasha Martin-Hammond (2014) Collectively Figuring It Out: Foreign-Trained Health Professionals and Labor Market Integration. LIBRES, Vol. 24, Issue 2. Special Section on Information Behavior on Social Media. December 2014.

(j12) Weaver, K.; **Komlodi, A**.; Duffy, B. (2014) Enhancing Embodied Conversation Agents with Initial Inventories. International Journal of Assessment and Evaluation. Volume 20, Issue 4.

(j11) Goodall, John R.; Lutters, Wayne G.; **Komlodi, Anita** (2009) Supporting Intrusion Detection Work Practice. Journal of Information System Security. 5(2) 42-73.

(j10) Goodall, John R.; Lutters, Wayne G.; **Komlodi, Anita** (2009) Developing expertise for network intrusion detection. Information Technology and People. 22(2)2-108.

(j9) Ozok, A. Ant; **Komlodi, Anita.** (2009) Better in 3-D? An Empirical Investigation of User Preferences Concerning 2-Dimensional and 3-Dimensional Product Representations in Business-to-Consumer E-Commerce. 25(4), pp. 243-281.

(j8) Michael P. McGuire, Aryya Gangopadhyay, **Anita Komlodi,** and Christopher Swan. (2008) A User-Centered Design for a Spatiotemporal Data Warehouse for Data Exploration in Environmental Research. Ecological Informatics. Vol. 3, pp. 273-285.

(j7) **Komlodi, Anita;** Lutters, Wayne. (2008) Collaborative Use of Individual Interaction Histories: Grounding a New Awareness Approach. *Interacting with Computers*. Elsevier. 20(1). January 2008. Pp. 184-198.

(j6) **Komlodi, Anita;** Hou, Weimin; Preece, Jenny; Druin, Allison; Golub, Evan; Alburo, Jade; Liao, Sabrina; Elkiss, Aaron; Resnik, Philip. (2007) Evaluating a Cross-Cultural Children's Online Book Community: Lessons Learned for Sociability, Usability, and Cultural Exchange. *Interacting with Computers*. Elsevier. 19(4), July 2007, Pp. 494-511.

(j5) **Komlodi, Anita;** Marchionini, Gary; Soergel, Dagobert (2007) Search history support for finding information: User interface design recommendations from a user study. *Information Processing and Management*. Oxford, New York, NY, Pergamon Press. Vol. 43. Pp. 10-29.

(j4) **Komlodi, Anita;** Soergel, Dabogert; Marhionini, Gary. (2006) Search histories for user support in user interfaces. *Journal of the American Society for Information Science and Technology*. New York, NY, John Wiley & Sons. 57(6), Pp. 803-807.

(j3) Goodall, John R.; Lutters, Wayne G.; Rheingans, Penny; **Komlodi, Anita**. (2006) Focusing on Context in Network Traffic Analysis. *IEEE Computer Graphics and Applications*. Los Alamitos, CA, IEEE Computer Society, National Computer Graphics Association. March/April 2006. 26(2), Pp. 72-80.

(j2) **Komlodi, Anita** (2004) Task management support in information seeking: A case for search histories. *Computers in Human Behavior*. New York, NY, Pergamon. 2004 (2) Vol. 20 Pp. 163-184.

(j1) Marchionini, Gary; Plaisant, Catherine; **Komlodi, Anita**. (1998) Interfaces and tools for the Library of Congress National Digital Library Program. *Information Processing and Management*. Oxford, New York, NY, Pergamon Press. Vol. 34. no. 5. Pp. 535-555.

Journal Articles: Editor-Reviewed Works

(je1) Joshi, Ashish; **Komlodi, Anita,** Mohit Arora, Michelle Ghabranious. (2008) School nurses' perceived barriers to diabetes knowledge, communication and management in children with type1 diabetes. School Nursing News.

Conference Proceedings: Peer-Reviewed Works

(c73) Young, A.; Geszten, D., Lutters, W.; Hercegfi, K.; Russ, S.; **Komlodi, A.** (In Print) Achieving common ground: Collaborative information seeking in an asymmetric virtual environment. Proceedings of the 2024 the 10th International Conference on Virtual Reality; Bournemouth, United Kingdom, July 24-26, 2024.

(c72) Tondreau, A., **Komlodi, A.**, Boot, L., Rajasagi, P., Wikane, E., Nooka, N., Doshi, R., King, T. & Seidel, K. (2024, April). *Virtual Reality in Teacher Preparation: Constructing Possibilities for Orienting Novice Teachers to School Communities.* Poster. American Educational Research Association Annual Conference, Philadelphia, PA.

(c71) Rajasagi, P., Yekini, M., Kunisetty, S., King, T., Zuber, R. J., Boot, L., Wilson, L.; Stockwell, I.; **Komlodi, A.** (2023). Comparing and Evaluating Menu Placement for Immersive Virtual Reality. *iConference 2023 Proceedings*. Poster.

(c70) Alshathri, I., **Komlodi, A.,** & Kuber, R. (2023). Examining the Feasibility of Virtual Reality to Motivate and Prepare International Students for Community Engagement

Activities–An Inquiry among Service Learning Experts. *iConference 2023 Proceedings*. Poster.

(c69) King, T., Davis, K., Saunders, B., Zuber, R., Rajasagi, P., Lukaszczyk, C., **Komlodi, A.,** & Boot, L. (2023). Immersive Visualization of Open Geospatial Data in Unreal Engine. In *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 709-710). IEEE. Poster.

(c68) Seo, J., Avellino, I., Rajasagi, D. P., **Komlodi, A.,** & Mentis, H. M. (2023). HoloMentor: Enabling Remote Instruction through Augmented Reality Mobile Views. *Proceedings of the ACM on Human-Computer Interaction*, *7*(GROUP), 1-29.

(c67) Kullman, K., Buchanan, L., **Komlodi, A.,** & Engel, D. (2020, July). Mental Model Mapping Method for Cybersecurity. In *International Conference on Human-Computer Interaction* (pp. 458-470). Springer, Cham.

(c66) Alshathri, I., Ulla, D. P., **Komlodi, A.,** Wolff, M., & Schmitz, H. (2020). The role of virtual reality in preparing graduate students for community engagement. *Proceedings of the Association for Information Science and Technology*, *57*(1), e328.

(c65) Wang, Jieyu, **Anita Komlodi**, and Omar Ka. "Understanding multilingual web users' code-switching behaviors in online searching." *Proceedings of the Association for Information Science and Technology* 55.1 (2018): 534-543.

(c64) Wang, J.; **Komlodi, A**. (2018) Switching Languages in Online Searching: A Qualitative Study of Web Users' Code-Switching Search Behaviors. *In: Proceedings of the 2018 ACM CHIIR Conference.* ACM.

(c63) Mentis, H. M., **Komlodi, A.,** Schrader, K., Phipps, M., Gruber-Baldini, A., Yarbrough, K., & Shulman, L. (2017). Crafting a View of Self-Tracking Data in the Clinical Visit. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (pp. 5800-5812). ACM.

(c62) Chu, P., & **Komlodi, A** . (2017). TranSearch: A Multilingual Search User Interface Accommodating User Interaction and Preference. In *Extended Abstracts of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*(pp. 2466-2472). ACM.

(c61) Ondego, V. K., & **Komlodi, A** . (2017). Web search selection criteria of foreign-language searchers. *Proceedings of the Association for Information Science and Technology*, *54*(1), 511-514.

(c60) Rayes, W., Martin-Hammond, A., **Komlodi, A**., Caidi, N., & Sundin, N. (2016). An informed transition? International medical graduates settling in the united states and Canada. *Proceedings of the Association for Information Science and Technology, 53(1), 1-7. Copenhagen, Denmark.*

(c59) Young, A. L., **Komlodi, A**., Rózsa, G., & Chu, P. (2016). Evaluating the credibility of English web sources as a foreign-language searcher. *Proceedings of the Association for Information Science and Technology, 53(1), 1-9. Copenhagen, Denmark.*

(c58) **Komlodi, Anita**; Nadia Caidi, Aqueasha Martin-Hammond, Wajanat Rayes, Nicole Sundin. (2016) Culturally-Situated Information Literacy: International Medical Graduates Navigating New Information Landscapes. Cultural Attitudes Toward Technology Conference 2016. London, UK.

(c57) Dali, K., Caidi, N., Bertot, J. C., **Komlodi, A.,** & Shah, C. (2016). From information professionals to information creatives: on educating future generations in iSchools. *IConference 2016 Proceedings*. *Interactive Session.*

(c56) Alasmari, Ashwag; **Komlodi, Anita**. (2016) Language Selection and Query Formulation in Arabic Users' English-Language Searching*. iConference 2016. Philadelphia, PA. March 20-23, 2016. Poster Presentation.*

(c55) Wang, J., & **Komlodi, A.** (2016). Understanding Users' Language Selection: Code-switching in Online Searches. In *Proceedings of the 2016 ACM on Conference on Human Information Interaction and Retrieval* (pp. 377-379). ACM.

(c54) Geszten, Dalma; Hámornik, Balázs Péter; **Komlodi, Anita**; Hercegfi, Károly; Szabó, Bálint; Young, Alyson. (2015) Qualitative Analysis of User Experience in a 3D Virtual Environment. Proceedings of the Annual Meeting of the American Society for Information Science and Technology. St. Louis, MO, November 6-10, 2015. (poster presentation)

(c53) Chu, Peng; **Komlodi, Anita**; Rozsa, Gyongyi. (2015) Online Search in English as a Non-native Language. Proceedings of the Annual Meeting of the American Society for Information Science and Technology. St. Louis, MO, November 6-10, 2015. (long paper presentation)

(c52) Logo E, Hamornik B P, Koles M, Hercegfi K, Tovolgyi S, **Komlodi A** (2014) Usability related human errors in a collaborative immersive VR environment In: Péter Baranyi (ed.): Proc. 5th IEEE International Conference on Cognitive Infocommunications: CogInfoCom 2014. Vietri sul Mare, Italy, 2014 Nov 05-07, pp. 243-246. (ISBN:978-1-4799-7279-1) DOI: 10.1109/CogInfoCom.2014.7020454
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=7020454

(c51) **Anita Komlodi**, Nadia Caidi, Aline Lima Abrao. (2014) Health Information Without Borders: Foreign-Trained Health Professionals and Labor Market Integration. Proceedings of the American Society for Information Science and Technology Annual Meeting 2014. http://www.asis.org/asist2014/proceedings/openpage.html

(c50) Hámornik B, **Komlodi A**, Köles M, Hercegfi K (2014) Studying the Features of collaboration in the VirCa immersive 3D environment. In: Spink A J, Loijens L W S, Woloszynowska-Fraser M , Noldus L P J J (eds.): Proceedings of Measuring Behavior, Wageningen, The Netherlands, 2014 Aug 27-29, pp. 1-5.
http://www.measuringbehavior.org/files/2014/Proceedings/Hamornik,%20B.P.%20-%20MB2014.pdf

(c49) Paul, C. L.; **Komlodi, A.** (2014) Measuring User Experience through Future Use and Emotion. Proceedings of ACM Conference on Human Factors in Computing Systems (ACM CHI) 2014, Extended Abstracts. DOI:10.1145/2559206.2581177.

(c48) Hámornik B, Köles M, Komlódi A, Hercegfi K, Izsó L (2014) Features of collaboration in the VirCa immersive 3D environment In: Stanney K, Hale K S (eds.): Advances in Cognitive Engineering and Neuroergonomics. Advances in Human Factors and Ergonomics,

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Conference/Poster Presentations (Non-Juried / Non-Refereed)

Komlodi, Anita. (September 2004) Keeping scientific connections with the home country – personal experience of "brain circulation". Enwise valorisation Conference: "Enlarging Europe with/for Women Scientists" September 9-10, 2004. Tallin, Estonia.

Win, Khine; **Komlodi, Anita**; Kaur, Manpreet. (2004) Search history user interfaces. UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2004. Poster.

Wheeler, Kristin; **Komlodi, Anita**; Caidi, Nadia. (2004) Cross-cultural usability of digital libraries. UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2004. Poster. Best poster award.

Wood, Jonathan; Preece, Jennifer; Andrews, Dorine; **Komlodi, Anita**. (2004) Online community personalities. UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2004. Poster.

Komlodi, Anita. (2004) User-system interaction histories as memory aids. Time Design Workshop. Association for Computing Machinery Conference on Human Factors in Computing Systems. Vienna, Austria. April 24-29, 2004.

Fell, Patrick; Ozok, Ant; **Komlodi, Anita**. (2003) 2D vs. 3D visualization in electronic commerce. UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2003. Poster.

Chris Liang, **Anita Komlodi.** (2003) Cross-cultural usability in Web searching. UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2003. Poster.

Marangoni, Nicholas J., Wayne G. Lutters, **Anita Komlodi**, and John Goodall. (2003) Information Visualization for Network Intrusion Detection Analysis, UMBC Summer Undergraduate Research Fest, Baltimore, MD, USA, August 2003. Poster.

Komlodi, Anita. (2003) History-Based User Interfaces for Information Retrieval, Use, and Management. American Psychological Association. Toronto, Canada, August 6-10, 2003.

Komlodi, Anita.(2003) Cross cultural usability in digital libraries. Workshop Presentation. IEEE/ACM Joint Conference on Digital Libraries, Austin, TX. June 1, 2003

Komlodi, Anita. (2003) Information visualization evaluation. Workshop presentation. Human-Computer Interaction Lab, University of Maryland, Annual Open House and Symposium. May 29, 2003.

Komlodi, Anita. (2003) Search histories for user support in user interfaces. Best Practices and Future Visions for Search User Interfaces. Workshop. Association for Computing Machinery Conference on Human Factors in Computing Systems. April 6, 2003. Ft. Lauderdale, FL.

Komlodi, Anita. (2002) Recording and Reuse of Search Interaction Histories in User Interfaces. Association for Computing Machinery Conference on Human Factors in Computing Systems 2002. Workshop 10. Automatic Capture, Representation and Analysis of User Behavior. April 21, 2002. Minneapolis, MN.

Komlodi, Anita (1999) History mechanisms in search systems. History Keeping in Computer Applications: a Workshop. Human-Computer Interaction Laboratory, University of Maryland. December 3, 1999.

Numerous presentations and demos at the Annual Symposium and Open House of the Human-Computer Interaction Laboratory, University of Maryland. 1996-2000.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Department:

Leadership:
2019-2021: Graduate Program Director for Online IS MS program
2019-2021: Chair, Online IS MS Graduate Committee
2019-2020: Chair, Online IS MS Search Committee
2019-2020: Chair, Promotion and Tenure Committee for Dr. Shimei Pan
2018-2019: Co-Chair: HCC Search Committee
2017-2018: Chair, Library Committee
2014-2016: Chair, Human-Centered Computing Graduate Committee
2014-2015: Chair, Human-Centered Computing Search Committee
January 2014 – May 2016: Graduate Program Director for Human-Centered Computing
May 2008 – 2012: Graduate Program Director for Human-Centered Computing
May 2008 – 2012: Co-chair: Graduate committee
December 2003- 2006: Director of Research
Fall 2003: Chair, Research Committee

Committee membership:
2022-present: Member, Mentoring and Retention Roundtable
2022-present: Member, IS Department Online Information Systems Masters Program Graduate Committee
2016-present: Member, IS Department Human-Centered Computing Graduate Committee
2016-2017: Member, IS Department Data Science Faculty Search Committee
2014-2016, Member, IS Department Graduate Committee
2009-2010: Member, IS Department Human-Centered Computing Faculty Search Committee
2010-2012: IS Department Assessment Committee
2009-2012: IS Department Marketing Input Group

2008-2012: IS Department Honors and Awards Committee
2008-2010: IS Department Student Recruitment Committee
2009-2010: IS Department Web certificate ad hoc committee
2008 – present: IS Department Promotion and Tenure Committee
2007-2008: Member, IS Department Human-Centered Computing Faculty Search Committee
2006-present: Member, IS Department Student Recruitment Committee
2006-2008: Member, IS Department Library committee
2006-2008: Member, IS Department Research committee
Spring 2005 & Spring 2006: Member, IS Department Merit review committee
2005: Member, IS Department Financial administrative staff search committee
2002-2003: Member, IS Department Non-tenured Research Faculty Search Committee
2002-2003: Member, IS Department Research Committee
2001-2002: IS Department Library liaison

College:

2019-2022: COEIT Faculty Advisory Committee, Member

University:

2021-present: Associate Director, Imagine Research Center, UMBC
2017-present: Faculty Grievance Committee member
2019-2022: MHEC Faculty Advisory Council
2017 – 2022: Member, Advisory Board for the Sherman Center for Early Learning in Urban Communities
2017 – 2021: Member, Internal Advisory Board for the Imaging Research Center
2017-2018: Chair, New Programs and Long Range Planning subcommittee of the Graduate Council, UMBC
2016-2018: Member, Graduate Council, UMBC
2014-present: Member, 4th Advance Leadership Cohort, UMBC
2014-2017: Member, Faculty Grievance Committee, UMBC
2011-2012: Member, Faculty Honors and Awards Committee, UMBC
2011-2012: Member, Faculty Grievance Committee, UMBC
Fall 2009: Member, UMBC Women in Science and Engineering 2009 promotion and tenure advisory committee
2009-2010: Member, UMBC Communications Manager in Science and Technology Search Committee
2008 – 2010: Member, UMBC Faculty Development Center Steering Committee
2007: Adjunct Member, UMBC AOK Library Web redesign committee
2005-2006: Member, UMBC Faculty Grievance Committee, UMBC
2004-present: Affiliate Faculty, UMBC Center for Women and IT, UMBC

Community and Profession:

2019, 2020: iConference Doctoral Colloquium, Co-Chair
2018: iConference Doctoral Colloquium, Mentor
2017-present: Editorial Board Member, Journal of the American Society for Information Science and Technology
2003-2009, 2016, 2017, 2018, 2019, 2021, 2022, 2023: NSF review panel member
2016: iConference Doctoral Colloquium, Mentor
2015-2018: Co-Chair, Awards Nomination Committee, American Society for Information Science and Technology
2015-present: Member, Academic Editor Group, PeerJ Computer Science
2014: Local Arrangements Co-Chair, ACM CSCW 2014

2011-2012: Early Career Colloquium Co-Chair, iConference 2012
2010: Program Committee Member, Fourth Workshop on Human-Computer Interaction and Information Retrieval
2006-2008: Co-Chair, American Society for Information Science and Technology, Special Interest Group on Human-Computer Interaction (SIGHCI)
2006, 2008: Co-chair, American Society for Information Science and Technology, Special Interest Group on Human-Computer Interaction (SIGHCI) 2006, 2008 Annual Symposium
2005: Co-chair, American Society for Information Science and Technology, Special Interest Group on Information Needs, Seeking, and Use (SIGUSE) 2005 Annual Symposium
2005: Program Board Member, 1st International Conference on Online Communities and Social Computing
2005: Program Board Member, 11th International Conference on Human Computer Interaction
2002-2004: Event coordinator & Webmaster, Interactive Systems Research Center (ISRC), Department of Information Systems, UMBC:

- Human Factors and Ergonomic Society Annual Meeting Visit, 2002
- Human Factors and Ergonomic Society Potomac Chapter Visit, 2004
- ISRC brownbag seminar series with internal and external speakers

2003: Workshop co-chair: Information visualization evaluation. Workshop organized in collaboration with Catherine Plaisant. Human-Computer Interaction Lab, University of Maryland, Annual Open House and Symposium. May 29, 2003
2003: Workshop co-chair: Cross cultural usability in digital libraries. Workshop organized in collaboration with Nadia Caidi. IEEE/ACM Joint Conference on Digital Libraries, Austin, TX. June 1, 2003
2001-2002: Secretary/Treasurer for the Washington, DC chapter of the ACM Special Interest Group for Computer-Human Interaction

2001-present: Reviewer for:

- Journals: Interacting with Computers, Computers in Human Behavior, International Journal of Human-Computer Studies, Journal of the American Society for Information Science & Technology, Information Processing & Management, Journal of Digital Information, Journal on Multimodal User Interfaces, The International Journal of Occupational Safety and Ergonomics
- Conferences: Association for Computing Machinery Special Interest Group on Computer-Human Interaction Conferences on Human Factor in Computer Systems (ACM SIGCHI), iConference, Hawaii International Conference on System Sciences (HICSS), Americas Conferences on Information Systems, Information Resources Management Association, International Conference to Information Systems, International Workshop on Internationalisation of Products and Systems, I-KNOW, IEEE Symposium on Information Visualization, Association for Computing Machinery User Interface Software Technology (ACM UIST), Symposium on Human-Computer Interaction and Information Retrieval

Aryya Gangopadhyay

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URL: https://sites.google.com/site/homearyya

(a) Professional Preparation

- PhD, 1993, Computer Information Systems, Rutgers University
- MS, 1992, Computer Science, New Jersey Institute of Technology
- MBA, Information Systems, 1991, Rutgers University
- B. Tech. (Honors), 1984, Naval Architecture and Ocean Engineering, Indian Institute of Technology Kharagpur

(b) Experience in Higher Education

- **06/08 - present**, Professor (tenured) of Information Systems, UMBC.
- **08/21 - present**, Director, Center for Real-time Distributed Sensing and Autonomy (CARDS), College of Engineering and Information Technology, UMBC.
- **09/11 - 08/19**, Chair, Information Systems, UMBC.
- **05/08 - 08/11, Associate Chair for Academic Affairs**, Information Systems, UMBC:
- **8/03 - 05/08, Associate Professor (tenured)**, Information Systems, UMBC
- **07/03 - 05/08, Graduate Program Director**, Information Systems, UMBC
- **08/97 - 07/03, Assistant Professor, Information Systems**, UMBC
- **08/93 - 07/97**, Assistant Professor, Information Systems, Morgan State Univ.

(c) Experience outside of Higher Education

- **1997 summer**, Senior Consultant, Oracle Corporation

- **1984-1987**, Junior Manager, Central Inland Water Transport Corporation

(d) Research Support and/or Fellowships

- **2021-2026:** $68 million. "AI and Autonomy for Multi-Agent Systems (ArtIAMAS)", Cooperative Agreement from the Army Research Laboratory, co-PI, (PI on UMBC's subaward from UMCP of the amount $20.5 million).

- **2019-2024:** $858,229. "HDR DSC: Collaborative Research: Creating and Integrating Data Science Corps to Improve the Quality of Life in Urban Areas", National Science Foundation, PI.

- **2019-2023:** $597,993. "Graduate Assistance in PhD in IS with Specialization in Cybersecurity", Department of Education, PI.

- **2020-2021:** $149,995. "RAPID: Deep Learning Models for Early Screening of COVID-19 using CT Images", National Science Foundation, PI.

- **2018-2021:** $447,750. "Graduate Assistance in PhD in Information Systems with Specialization in Cybersecurity, an Area of National Needs", United States Department of Education, PI.

- **2017-2020:** $150,000, "Functional and Cognitive Health Assessment of Older Adults with Dementia," Alzheimer's Association, co-PI.

- **2017-2020:** $499,970, "Cross-Training of Researchers in Computing, Applied Mathematics and Atmospheric Sciences using Advanced Cyberinfrastructure Resources," National Science Foundation, co-PI.

- **2016-2019:** $1,000,000, "Accelerated Cognitive Cybersecurity Lab," IBM, co-PI.

- **2015-2019:** $399,753, "Integrating Cybersecurity with Undergraduate IT Programs" National Science Foundation, PI.

- **2016-2018:** $225,000, "Distributed Data Analytics for Real-TIme Monitoring and Detection of Flash Floods in Smart City", National Science Foundation, co-PI.

- **2015-2016:** $99,969, “National Science Foundation RAPID 15-006: Near Real-Time Quantifiable Social Media Data for Improved Modeling, Tracking and Mitigating the Spread of the Ebola Virus” National Science Foundation, co-PI.
- **2014-2015:** $45,000, “UMBC Energy Education through Green Building –with an E2 Energy to Educate,” Constellation Energy, co-PI
- **2013-2015:** $481,098, “Research on Big Data,” National Institute on Standards and Technology National Institute of Standards and Technology, co-PI.
- **2012-2015:** $408,315, “Graduate Assistance in Areas of National Needs”, United States Department of Education, PI.
- **2012-2015:** $518,870, “Application of Multicore Processing to Advance Personalized Medicine, Software Assurance, and Health IT,” National Institute of Standards and Technology, co-PI.
- **2013-2014:** $49,775, “Energy Education for Green Building,” Constellation Energy, co-PI.
- **2011-2012:** $149,954, “Ontology Development for Personalized Medicine and related Health IT Applications,” National Institute of Standards and Technology co-PI.
- **2007-2012:** $449,654, “IIS: A privacy-preserving framework for distance-based mining,” National Science Foundation co-PI.
- **2009-2010:** $53,580, “Anomaly detection for Traffic Monitoring data,” Maryland State Highway AdmiNational Institute of Standards and Technologyration, PI.
- **2004-2009:** $622,665, “Graduate Assistance in Areas of National Needs,” United States Department of Education, PI.
- **2006-2007:** $48,500, “Spatiotemporal Data Explorer: An integrated spatiotemporal data warehouse for visualization driven knowledge discovery in water resources management”, USGS National Biological Information Infrastructure and National Park Service, co-PI.
- **2007:** $125,913, “Hosting, Maintaining and Supporting website mdelections.umbc.edu”, Maryland State Board of Elections, co-PI.

- **2006-2007:** $235,549, “Maryland Voter Information Clearinghouses,” Maryland State Board of Elections, co-PI.
- **2002-2003:** $52,948, “Content Management User Interface Development’,’ Maryland Industrial Partnerships (MIPS, Phase 2) PI.
- **2001-2002:** $52,948, “Content Management User Interface Development,” Maryland Industrial Partnerships (MIPS, Phase 1) PI.
- **2000:** $9,386, “A Web-Based system for Simple Modeling of Nonpoint pollution in the Hackensack Meadowland District”, Meadowlands Environmental Research Institute PI.
- **1999-2000:** $8000, Designated Research Initiative Fund, UMBC Graduate School PI.
- **1999 summer:** $3000, Summer Faculty Fellowship, UMBC Graduate School PI.
- **1998-1999:** $5845, Designated Research Initiative Fund, UMBC Graduate School, PI.
- **1998 summer:** $5000, Summer Faculty Fellowship, UMBC Graduate School, PI.
- **1996 summer:** $3500, Summer Research Grant, Morgan State University, PI.
- **1994 summer:** $2500, Summer Research Grant, Morgan State University, PI.

(e) PhD Students

- **Jayalakshmi Mangalagiri, PhD in Computer Science (co-chaired with David Chapman), August 2024**.

  A Progressive Meta-Algorithm to Synthesize Very Large Super Resolution Images with Fine Details.

  Starting Position: Data Scientist, U.S. Bank (August 2024).

- **Pretom Roy Ovi, PhD August 2024**.

  A Robust Federated Learning Framework against Cyber Intrusions to Ensure Data Confidentiality and Model Integrity.

  Starting Position: Assistant Professor (tenure track), Department of Data Science, University of North Texas (August 2024).

- **Argho Sarkar (co-advised with Maryam Rahnemonfar), PhD May, 2024**.

Towards Explainable Machine Learning Models for Remote Sensing: Multi-modal and Uni-modal Applications for Natural Disaster.

Starting Position: AI/ML Researcher Memorial Sloan Kettering Cancer Center.

- **Tashnim Chowdhury (co-advised with Maryam Rahnemonfar), PhD May, 2024**.

  Supervised and Semi-Supervised Semantic Segmentation for Natural Disaster Damage Assessment.

  Starting Position: Professor, Capitol Technology University.

- **Debvrat Varshney (co-advised with Maryam Rahnemonfar), PhD May, 2024**.

  Hybrid Deep Learning to Trace Snow Layers through Radargrams.

  Starting Position: Postdoctoral Researcher, Oak Ridge National Lab

- **Anamika Paul Rupa, PhD 2023**.

  Dissertation Title: Multi-modal Deep Fusion for Activity Detection.

  Starting Position: Lecturer, Department of Electrical Engineering and Computer Science, Howard University.

- **Oluwagbemiga Ajayi, PhD 2022**.

  Dissertation Title: Developing Cross Domain Intrusion Detection Systems.

  Starting Position: Business Intelligence Engineer, Amazon Inc.

- **Peichang Shi, PhD 2022**.

  Dissertation Title: Interpretable Deep Learning Models For Electronic Health Records.

  Current Position: Senior lead data scientist, Booz Allen Hamilton.

- **Amrita Anam, PhD 2019**.

  Dissertation Title: Sensing Social Media Context of Natural Disasters for Effective Response with Time-Frequency Analysis.

  Starting Position: Business Intelligence Engineer, Amazon Inc.

- **Iyanuoluwa Odebode, PhD 2019**

  Dissertation Title: Network Analytics towards Drug Repurposing using Phosphorylated Proteins.

  Starting Position: ORISE Fellow at AirForce Institute of Technology, PhD 2017.

- **Song Chen, PhD 2017**.

  Dissertation Title: Fraud Detection in Healthcare.

  Starting Position: Software Engineer, MITRE.

- **Ibrahim Toure, PhD 2017**.

  Dissertation Title: Real Time Big Data Analytics for Predicting Terrorist Incidents.

  Starting Position: Software Engineer, CoStar Group.

- **Rose Yesha, PhD 2016**.

  Dissertation Title: Knowledge Discovery in Clinical Data.

  Starting Position: Lecturer and Graduate Program Director of MPS in Health IT, UMBC.

- **Amir Karami, PhD 2015**.

  Dissertation Title: Fuzzy Topic Modeling for Medical Corpora.

  Starting Position (now tenured Associate Professor): Assistant Professor, University of South Carolina.

- **Shaojian Zhu, PhD 2014**.

  Dissertation Title: A Quantitative Quality Control Model for Parallel and Distributed Crowdsourcing Tasks.

  Starting Position: Software Engineer, Google.

- **Xin (James) Li, PhD 2011**.

  Dissertation Title: Privacy Preserving PCA on Distributed Bioinformatics Datasets.
  Starting Position: Assistant Professor, Bioinformatics, Georgetown University.

- **Madhu Ahluwalia, PhD 2011**.

  Dissertation Title: Target-Based Maintenance of Privacy Preserving Association Rules.

  Starting Position: Senior Database AdmiNational Institute of Standards and Technology Integrator, Peraton.

- **Michael P. McGuire, PhD 2010**.

  Dissertation Title: Finding Spatio-Temporal Patterns in Large Sensor Datasets.

  Starting Position: Assistant Professor (now tenured Professor and Chair), Computer and Information Sciences, Towson University.

- **Pimwadee Chaovalit, PhD 2009**.

  Dissertation Title: Clustering Transient Data Streams by Example and by Variable.

  Starting Position: Section Head, National Science and Technology Development, Thailand.

- **Shibnath Mukherjee, PhD 2007**.

  Dissertation Title: Efficient Data Reduction and Privacy Preserving Frameworks for Distance- based Data Mining Algorithms.

  Current Position: Principal Machine Learning Manager, Microsoft, India.

- **Navin Kumar, PhD 2006**.

  Dissertation Title: Exploring Multidimensional Data Cubes Using Skewness-Based Navigation Rules.

  Current Position: Senior Software Architect, Advisory Board.

- **Zhensen Huang, PhD 2004**.

  Dissertation Title: The Value of Information Sharing in Supply Chain management with Demand Uncertainty.

  Current Position: CEO, Precise Software Solutions, Inc.

- **Iftikhar Sikder, PhD 2003**.

  Dissertation Title: Uncertainty Management in Empirical Knowledge Discovery and Classification in Spatial Databases.

  Current Position: Associate Professor (tenured), Computer and Information Sciences, Cleveland State University.

(f) Publications

Articles in refereed journals (* indicates student co-authorship)

1. * Debvrat Varshney, Masoud Yari, Oluwanisola Ibikunle, Jilu Li, John Paden, Aryya Gangopadhyay and Maryam Rahnemoonfar: Skip-WaveNet: a wavelet based multi-scale architecture to trace snow layers in radar echograms. Environmental Data Science, accepted August 9, 2024.

2. * Sumeet Menon, Jayalakshmi Mangalagiri, Joshua Galita, Michael Morris, Babak Saboury, Yaacov Yesha, Yelena Yesha, Phuong Nguyen, Aryya Gangopadhyay, David Chapman: CCS-GAN: COVID-19 CT Scan Generation and Classification with Very Few Positive Training Images. Journal of Digital Imaging 36(4): 1376-1389 (2023).

3. * Xin Wang, Pei Guo, Xingyan Li, Aryya Gangopadhyay, Carl E. Busart, Jade Freeman, Jianwu Wang: Reproducible and Portable Big Data Analytics in the Cloud. IEEE Transactions on Cloud Computing 11(3): 2966-2982 (2023).

4. * Argho Sarkar, Tashnim Chowdhury, Robin Roberson Murphy, Aryya Gangopadhyay, Maryam Rahnemoonfar: SAM-VQA: Supervised Attention-Based Visual Question Answering Model for Post-Disaster Damage Assessment on Remote Sensing Imagery. IEEE Transactions on Geoscience and Remote Sensing 61: 1-16 (2023).

5. * Xin Wang, Azim Khan, Jianwu Wang, Aryya Gangopadhyay, Carl E. Busart, Jade Freeman: "An edge-cloud integrated framework for flexible and dynamic stream analytics", Future Generation Computing Systems. 137: 323-335 (2022).

6. * Sreenivasan Ramasamy Ramamurthy, Indrajeet Ghosh, Aryya Gangopadhyay, Elizabeth Galik, Nirmalya Roy: "STAR-Lite: A light-weight scalable self-taught learning framework for older adults' activity recognition", Pervasive and Mobile Computing. 87: 101698 (2022).

7. * Fan Yang, Zhiyuan Chen, Aryya Gangopadhyay: "Using Randomness to Improve

Robustness of Tree-Based Models Against Evasion Attacks", IEEE Transactions on Knowledge and Data Engineering. 34(2): 969-982 (2022)

8. * Lee, J., Shi, Y., Cai, C., Ciren, P., Wang, J., Gangopadhyay, A., and Zhang, Z. "Machine Learning Based Algorithms for Global Dust Aerosol Detection from Satellite Images: Inter-Comparisons and Evaluation", Remote Sensing 13(3): 456, 2021.
9. Gangopadhyay, A., Morris, M., Saboury,B., Siegel, E., and Yesha, Y. "IDIOMS: Infectious Disease Imaging Outbreak Monitoring System", Digital Government Research and Practice 2(1): 15:1-15:5, 2021.
10. * Singh, N., Roy, N. Gangopadhyay, A. "Analyzing the Emotions of Crowd for Improving the Emergency Response Services", Pervasive and Mobile Computing, (58), 2019.
11. * Karami, A., Gangopadhyay, A., Zhou, B., and Kharrazi, H. "Fuzzy Approach Topic Discovery in Health and Medical Corpora," International Journal of Fuzzy Systems, 20(4): 1334-1345 (2018).
12. * Aleroud, A. and Gangopadhyay, A. "Multimode co-clustering for analyzing terrorist networks", Information Systems Frontiers, 20(5): 1053-1074 (2018).
13. * Ahluwalia, M., Gangopadhyay, A., Chen, Z, Yesha, Y. "Target-Based, Privacy Preserving, and Incremental Association Rule Mining," IEEE Transactions on Services Computing, 10(4): 633-645, 2017.
14. * Alam, M., Roy, N., Gangopadhyay, A., Galik, E. "A smart segmentation technique towards improved infrequent non-speech gestural activity recognition model," Pervasive and Mobile Computing, 34: 25-45, 2017.
15. * Asduaij, S., Chen. Z., and Gangopadhyay, A. "Using Crowd Sourcing to Analyze Consumers' Response to Privacy Policies of Online Social Network and Financial Institutions at Micro Level," International Journal of Information Security and Privacy, 10(2): 41-63, 2016.
16. * Shi, L., Gangopadhyay, A., and Janeja, V. "STenSr: Spatio - temporal Tensor Streams for Fast Anomaly Detection," KAIS, Knowledge and Information Systems, 43(2): 333-353, 2015.
17. * Dey, S. Janeja, V. and Gangopadhyay, A."Discovery of Temporal Neighborhoods through Discretization Methods," Intelligent Data Analysis, 18(4): 609-636, 2014.
18. * Bachore, A., Gangopadhyay, A., Yesha, Y., Joshi, A., Yesha Y., Brady, M., Grasso, M., and Rishe, N. "Integrating Domain Knowledge in Supervised Machine Learning to Assess the risk of Breast Cancer," International Journal of Medical Engineering and Informatics, 6(2): 87-99, 2014.
19. * Gal, T., Tucker, T., Chen, Z., and Gangopadhyay, A. "A Data Recipient Centered De-identification Method to Retain Statistical Attributes", Journal of Biomedical Informatics, 50: 32-45, 2014.
20. * McGuire, M., Janeja, V., Gangopadhyay, A. "Mining Trajectories of Moving Dynamic Spatio-Temporal Regions in Sensor Datasets", Data Mining and Knowledge Discovery,

28(4): 961-1003, 2014.

21. Banerjee, M., Chen, Z., Gangopadhyay, A. “A generic and distributed privacy preserving classification method with a worst-case privacy guarantee”, Distributed and Parallel Databases Journal, 32(1): 5-35, 2014.

22. * McGuire, M., Janeja, V., Gangopadhyay, A.” Mining sensor datasets with spatiotemporal neighborhoods”, Journal of Spatial Information Science, 6(1): 1-42 (2013)

23. * Kim, D., Chen, Z., and Gangopadhyay, A. “Optimizing Privacy-Accuracy Tradeoff for Privacy Preserving Distance-Based Classification,” International Journal of Information Security and Privacy, 6(2): 16-33, April-June 2012.

24. * Janeja, V., Gangopadhyay, A., Mohammadi, S., and Palanisamy, R. ”Discovery of Anomalous Spatio-Temporal Windows using Discretized Spatio-Temporal Scan Statistics (DSTS)”, Statistical Analysis and Data Mining, 4(3): 276-300, 2011.

25. * Chaovalit, P., Gangopadhyay, A., Karabatis, G., and Chen, Z. “Discrete Wavelet TraNational Science Foundationorm-based Time Series Analysis and Mining,” ACM Computing Surveys, 43(2), 1-37, January 2011.

26. * Fu, Y., Chen, Z. Koru, G., and Gangopadhyay, A. ”A Privacy Protection Technique for Publishing Data Mining Models and Research Data”, ACM Transactions on Management Information Systems,1(1), 1-20, December 2010.

27. * Joshi, A., Gangopadhyay, A., Banerjee, M., Baffoe-Bonnie, G., Mohanlal, V. L., and Wali,, R. K. “A Clustering Method to Study the Loss of Kidney Function Following Kidney Transplantation”, International Journal on Biomedical Engineering and Technology, special issue on Warehousing and Mining Complex Data: Applications to Biology, Medicine, Behavior, Health and Environment, Vol. 3, Nos. 1/2,64-82, 2010.

28. * Engle, K. and Gangopadhyay, A. “An Efficient Method for Discretizing Continuous Attributes,” International Journal of Data Warehousing and Mining, Vol 6, No 2, 1-21, 2010.

29. * Mukherjee, S., Gangopadhyay, A., Chen, Z. “A Partial Optimization Approach for Privacy Preserving Frequent Itemset Mining,” International Journal of Computational Models and Algorithms in Medicine (IJCMAM),Vol. 1 no. 1, 19-33, 2010.

30. * Ahluwalia, M., Gangopadhyay, A., and Chen, Z. “A Wavelet-based Approach for Preserving Privacy in Mining Association Rules,” International Journal of Information Security and Privacy, Vol. 3, No. 4, 1-17, 2009.

31. * McGuire, M., Gangopadhyay, A., Komlodi, A., and Swan, C. “A User-centered Design for a Spatial Data Warehouse for Data Exploration in Environmental Research”, Ecological Informatics, 3, 273-285, 2008.

32. * Kumar, N., Gangopadhyay, A., Karabatis, G. Bapna, S. and Chen, Z. “Measuring Interestingness of Discovered Skewed Patterns in Data Cubes”, Decision Support Systems, 46, 429-439, 2008.

33. * Russell, S., Gangopadhyay, A., and Yoon, V. “Assisting Decision Making in the Event-driven Enterprise using Wavelets,” Decision Support Systems, 46, 14-28, 2008.
34. * Gal, T., Chen, Z., Gangopadhyay, A. “A Privacy Protection Model for Patient Data with Multiple Sensitive Attributes”, International Journal of Information Security and Privacy. 2(3) pp. 28-44, 2008.
35. * Mukherjee, S., Zhiyuan Chen, Gangopadhyay, A., A Privacy Preserving Technique for Distance-based Classification with Worst Case Privacy Guarantees. Data & Knowledge Engineering. 66, pp. 264-288, 2008.
36. * Mukherjee, S., Chen, Z. and Gangopadhyay, A. “A fuzzy programming approach for data reduction and privacy in distance-based mining”, Int. J. Information and Computer Security, Vol. 2, No. 1, pp.27?47, 2008.
37. * Kumar, N., Gangopadhyay, A., Karabatis, G. “Supporting Mobile Decision Making with Association Rules and Multi-layered Caching,” Decision Support Systems, 43(1): 16-30, 2007.
38. Sikder, I. and Gangopadhyay, A. “Managing Uncertainty in Location Services Using Rough Set and Evidence Theory”, Expert Systems with Applications, 32(2): 386-396, 2007.
39. Chen, Z., Gangopadhyay, A., Karabatis, G., McGuire, M., and Welty, C. “Semantic Integration and Pattern Discovery for Environmental Data,” Journal of Database Management, 18(1): 43-67, January-March 2007.
40. Chen, Z., Gangopadhyay, A., Karabatis, G., Holden, S., and McGuire, M. “Semantic Integration of Government Data for Water Quality Management,” Government Information Quarterly, 24: 716-735, 2007.
41. Bapna, S. and Gangopadhyay, A. “A Wavelet-based Approach to Preserve Privacy for Classification Mining”, Decision Sciences Journal, 37(4): 623-642, November 2006.
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5. Gangopadhyay, A. “Multi-Resolution Data Mining,” UMBC-SERC Workshop, January 18, 2005.

6. Gangopadhyay, A. “Electronic Catalogs for Supply Chain Management”, Fall 1999 CS Graduate Seminars, CSEE Colloquium, UMBC, November 12, 1999.

7. Gangopadhyay, A. “Architecture for Electronic Commerce: Research Experiences”, CASCON ’98 (sponsored by IBM Canada and National Research Council of Canada), November 30-December 3, 1998.

(g) Service

University Service

- **2021-present** Member, Center Director’s Group, UMBC.

- **2021-2023** Member, Research Council, UMBC.

- **2020-2021** Member, Council of the University System Faculty, University System of Maryland.

- **2013-2015** Co-Chair, Research, Scholarship and Creative Achievement, Provost's Strategic Planning Steering Committee, UMBC.

- **2011-present** Member, Advisory Board, College of Engineering and Information Technology, UMBC.

- **2018-present** Affiliated Faculty, Center for Accelerated Real Time Analytics (CARTA), UMBC.

- **2016-present** Faculty Member, Center for Cybersecurity, UMBC.

- **2014, 2017** Member, Dean Search Committee for College of Engineering and Information Technology, UMBC.

- **2013** Member, Search Committee for Vice President for Research, UMBC.

- **2005-present** Affiliate member, Center for Urban Environmental Research and Education (CUERE), UMBC.

- **2010** Member, Search Committee for University Registrar.

- **2002** Member, Bioinformatics Research Center.

- **2002** Member, Bioinformatics Curriculum Planning Committee, UMBC.

- **1998-2000** Member, Institute of Global Electronic Commerce, Member.

Community and Professional Service

- **2020** Member of the Technical Program Committee, IEEE ICDM, Sorrento, Italy.

- **2020**, Member of Technical Program Committee, IEEE SMARTCOMP, Bologna, Italy.

- **2019** General Co-Chair, IEEE SMARTCOMP: Smart Living Through Computing, Washington DC.

- **2018, 2019** Co-organizer, International Workshop on Analytics for Security in Cyberphysical Systems, co-located with ACM ICDCN.

- **2105-2018** Program Committee member, 29th International Conference on Database and Expert Systems Applications - DEXA.

- **2016,2012** Program committee member, IEEE International Conference on Data Mining.

- **2013-present** Associate Editor, Smart Homecare Technology and TeleHealth, Dovepress.
- **2009-2013** Editor-in-Chief, International Journal of Computational Models and Algorithms in Medicine.
- **2012** Program committee member, ICDM-2012 Workshop on Biological Data Mining and its Applications in Healthcare.
- **2012** Tutorial Chair, 28th IEEE International Conference on Data Engineering (ICDE 2012).
- **2012** Program committee member, 16th Pacific-Asia Conference on knowledge Discovery and Data Mining (PAKDD 2012).
- **2012** Extended Abstracts Chair and program committee member, 2nd International Health Informatics Symposium, (IHI 2012).
- **2012** 6th International Conference on Information Systems, Technology & Management (ICISTM 2012), Track Chair, Information Systems.
- **2011-2013** Program committee member, IEEE International Conference on Data Mining (ICDM 2011).
- **2011-2014** Program committee member, 22nd International Conference on Database and Expert Systems Applications (DEXA 2011).
- **2011** Program committee member, 12th Annual International Conference on Digital Government Research (dg.o 2011).
- **2010** Program committee member, ACM International Health Informatics Symposium.
- **2010** Program committee member, IEEE International Conference on Data Mining (ICDM 2010).
- **2009** Program committee member, IEEE International Conference on Data Mining (ICDM 2009)
- **2009** Program committee member, 20th International Conference on Database and Expert Systems Applications.
- **2007** Program committee member, 9th International conference on DSS Kolkata, India,
- **2005** Member, International Editorial Review Board, Journal of Electronic Commerce in Organizations.

- **2005** Chair, Registration and workshops, ACM SIGMOD Conference.
- **2004** Track Chair, Supply Chain Management, 35th Annual Meeting of the Decision Sciences Institute (DSI).
- **2004** Member, International Editorial Review Board, International Journal of E-Business Research (IJEBR).
- **2002-2004** Panelist, National Science Foundation SBIR/STTR Database Management.
- **2002, 2003** Track Chair, IRMA Data Warehousing and Mining.
- **2002** Reviewer: IEEE Transactions on System, Man, Cybernetics, Part B, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Engineering Management, Information Sciences, International Journal on Production Economics, DSI 2002, and AMCIS 2002.
- **2001** Session Chair, Database Management and Computer Aided Software extramuralEngineering, IRMA.
- **1999** Discussant, Annual meeting of DSI'99.
- **1999** Reviewer, International Conference on Information Systems (ICIS).
- **1998** Co-Chair, Maryland Information Systems Workshop.
- **1998** Session Chair and Presenter, Annual meeting of AIS'98.

ANNUAL FACULTY ACTIVITY REPORT
January 1, 1975 - December 31, 2024

Faculty Name:	Dr. Michael Brown	**Rank:**	Professor of Practice
College:	College of Engineering and Information Technology	**Department:**	Information Systems
Affiliate College:	College of Engineering and Information Technology	**Affiliate Department:**	Information Systems
Tenure Status:			

I. EDUCATION

Ph D, Computer Science, Nova Southeastern University. 2010.

MS, Computer Science, Shippensburg University of Pennsylvania. 1997.

BA, Mathematics and Computer Science, Speech and Operations Research, Shippensburg University of Pennsylvania. 1992.

II. TEACHING

A. Scheduled Teaching

Fall 2021

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 699		Online	27	Yes	
IS 679		Online	36	Yes	

Credit Hours Taught: 6

Fall 2022

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 669-01 Session 1	1	Online	17		
IS 679-01 Session 1	1	Online	11		
IS 634-01 Session 1	1	Online	9		
IS 634-03 Session 1	1	In Person	1		

Credit Hours Taught: 12

Spring 2022

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 675-01 Session 1	1	Online	23		
IS 675-1					
IS 668-1					
IS 668-01 Session 1	1	Online	9		

Credit Hours Taught: 6

Summer 2022

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 633-01 Session 12W	12W	Online	14		
IS 633-03 Session 12W	12W	In Person	2		

Credit Hours Taught: 6

Fall 2023

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 633-1 Session 1	1	Online	27		
IS 669-1 Session 1	1	Online	16		

Credit Hours Taught: 6

Spring 2023

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 675-1 Session 1	1	Online	14		
IS 633-1 Session 1	1	Online	22		
IS 701-1 Session 1	1	Online	1		

Credit Hours Taught: 9

Summer 2023

Course & Section	Session	Delivery Mode	Enrollment	New Course Preparation ?	New Format for Existing Course?
IS 668-1 Session 12W	12W	Online	9		
IS 634-1 Session 12W	12W	Online	20		

Credit Hours Taught: 6

B. Non-Credit Instruction

Numerous EdX Courses, EdX. (January 1, 2024 - December 31, 2024).

Relational Database Design, External to University of Maryland, Baltimore County, EdX, Academic. (January 1, 2023 - December 31, 2023).
Relational Database Design

Relational Database Management Systems, External to University of Maryland, Baltimore County, EdX, Academic. (January 1, 2023 - December 31, 2023).
Relational Database Management Systems

Relational Database Management Systems, EdX. (October 28, 2022 - December 31, 2023).
Relational Database Management Systems

Relational Database Design, EdX, 62 participants. (November 10, 2022 - December 31, 2022).
Relational Database Design

Advanced Topics in Relational Databases, EdX, 83 participants. (November 7, 2022 - December 18, 2022).

Advanced Topics in Relational Databases

Advanced Topics in Relational Databases, EdX. (September 19, 2022 - October 30, 2022).
Advanced Topics in Relational Databases

Advanced Topic in Relational Databases on EdX., EdX, 108 participants. (August 1, 2022 - September 11, 2022).
Advanced Topic in Relational Databases on EdX.

Introduction to Relational Databases on EdX, Both Internal and External to University of Maryland, Baltimore County, EdX, 740 participants, Academic. (June 13, 2022 - July 24, 2022).
Introduction to Relational Databases on EdX.

C. Student Publications

Pahnehkolaee, N.P., Littlejohn, S., Lewis, L., Brown, M. (2023). *Increasing Accuracy in Predicting Student Test Scores with Regression using Domain Reduction Technique of Principle Component Analysis*. College Station, TX: IEEE Frontiers in Education. Current Status is Published.

Miller, C., Pelosi, M., Brown, M. (2023). *Domain Fronting Through Microsoft Azure and CloudFlare: How to Identify Viable Domain Fronting Proxies*. Las Vegas: Defcon. https://defcon.org/. Current Status is Published.

III. SCHOLARSHIP AND RESEARCH

A. Refereed Publications / Contributions

1. Award Paper

Brown, M., Williams, L. (2018). *Eliminating Redundancies in Online Educational Material*. Effective Practice Award, Online Learning Consortium. Current Status is Published.

2. Conference Proceeding

Brown, M., Coker, J., Hua, O. (2015). *A Complexity Measurement for de novo Protein Folding*. Niagara Falls: IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology. Current Status is Published.

Nandanavanam, K., Salem, A., Dong, A., Devilbiss, J., Brown, M. (2013). *A Survey of Relational Database Performance Issues Involving Large Objects*. Honolulu, HI: Proceedings of the 28th Conference on Computers and Their Applications. Current Status is Published.

Brown, M., Douglass, B. (2020). *An Event Study of the Effects of Cryptocurrency Thefts on Cryptocurrency Prices*. Spring Simulation Conference. https://dl.acm.org/doi/abs/10.5555/3408207.3408234. Current Status is Published.

Miller, C., Pelosi, M., Brown, M. (2023). *Domain Fronting Through Microsoft Azure and CloudFlare: How to Identify Viable Domain Fronting Proxies*. Las Vegas: Defcon. https://defcon.org/. Current Status is Published.

Brown, M., Williams, L., Pelosi, M. (2018). *Dynamic Hierarchical Learning Material for Educational Institutions.*. Princeton, NJ: IEEE Integrated STEM Education Conference. Current Status is Published.

Brown, M. (2021). *Dynamic-Radius Species-Conserving Genetic Algorithm for the Financial Forecasting of Cryptocurrencies*. Orlando: IEEE Symposium Series on Computational Intelligence. Current Status is Published.

Pelosi, M., Dirska, H., Assadullah, M., Brown, M. (2014). *Efficient Work Team Scheduling: Using Psychological Models of Knowledge Retention to Improve Code Writing Efficiency*. Orlando, FL: Proceedings of the 18th World Multi-Conference on Systemics, Cybernetics and Informatics. Current Status is Published.

Brown, M., Rajashekar, B., N.D. P. (2022). *Increasing Accuracy in Predicting Student Test Scores with Neural Networks using Domain Reduction Technique of Principal Component Analysis*. Nassau: IEEE International Conference on Machine Learning and Applications. Current Status is Published.

Pahnehkolaee, N.P., Littlejohn, S., Lewis, L., Brown, M. (2023). *Increasing Accuracy in Predicting Student Test Scores with Regression using Domain Reduction Technique of Principle Component Analysis*. College Station, TX: IEEE Frontiers in Education. Current Status is Published.

Brown, M. (2021). *Open Research Laboratory for Non-Research Focused Institutions*. Princeton, NJ: IEEE Integrated STEM Education Conference. Current Status is Published.

Brown, M., Young, J. (2014). *Replication of the Niche Radius Problem using Clustering Genetic Algorithms* (pp. 519-520.). Pensacola Beach, FL: Proceedings of the 27th International Florida Artificial Intelligence Society Conference. Current Status is Published.

Pelosi, M., Brown, M. (2016). *Software Engineering a Multi-layer and Scalable Autonomous Forces A.I. for Professional Military Training*. Washington, DC: Winter Simulation Conference. Current Status is Published.

Pelosi, M., Brown, M., Assadullah, M. (2015). *Survivability Enhancement of Low Altitude Cruise Missiles via GIS Enhanced Terrain Masking*. Laurel, MD: Proceedings of the AIAA DEFENSE 2015 Conference: The American Institute of Aeronautics and Astronautics Defense and Security Forum (SECRET / U.S. ONLY). Current Status is Published.

Pelosi, M., Brown, M., Assadullah, M. (2017). *Top-Down Teaching of C++ and Other Programming Languages*. Honolulu, HI: Proceedings of the 15th Hawaii International Conference on Education. Current Status is Published.

Brown, M., Montaz, M., Mai, A., Modi, D. (2024). *Using Factor Analysis to Increase Accuracy of Neural Networks for Predicting Student Test Scores* (vol. 2024). Washginton DC: IEEE Frontier in Education,. Current Status is Published.

3. Journal Article, Academic Journal

Bennett, T., Brown, M., Pelosi, M. (2015). A Genetic Algorithm for the Generation of Software Maintenance Release Plans without Human Bias. *Journal of Software Engineering Practice, 1*(1), 6-21. Current Status is Published. Online Publication: 2015

Onyenweaku, I. R., Brown, M., Pelosi, M. J., Shahine, M. (2021). A SonarQube Static Analysis of the Spectral Workbench. *International Journal of Natural Science and Reviews, 6*(16). https://escipub.com/ijnsr-2020-12-0605/. Current Status is Published.

Brown, M., Neptune, F., Bohl, G., Cifuentes, M., Young, J. (2013). A Survey of the use of Genetic Algorithms in Structural Testing. *International Journal of Advanced Research in Computer Science and Software Engineering, 3*(12), 6-13. Current Status is Published.

Brown, M., Dirska, H., Pelosi, M., Assadullah, M. (2013). Agile Method Software Development Estimation Biases. *International Journal of Advanced Research in Computer Science and Software Engineering, 3*(10), 115-119. Current Status is Published.

Wojaczek, A., Brown, M., Smal, T. (2020). Developing Software Requirements Specification for a Strategic Goods Air Transportation System. *Scientific Journal of the Military University of Land Forces, 198*(4), 906-917. Current Status is Published.

Brown, M., Pelosi, M. (2017). Dynamic-radius Species-conserving Genetic Algorithm for Test Generation for Structural Testing. *International Journal of Software Engineering and Applications, 8*(1). Current Status is Published. Online Publication: 2017

Brown, M., Pelosi, M., Dirska, H. (2013). Dynamic-radius Species-conserving Genetic Algorithm for the Financial Forecasting of Dow Jones Index Stocks. *Machine Learning and Data Mining in Pattern Recognition, 7988*, 27-41. Current Status is Published.

Brown, M., Dirska, H., Assadullah, M., Pelosi, M. (2014). Efficient Work Team Scheduling: Using Psychological Models of Knowledge Retention to Improve Code Writing Efficiency. *Journal of Systemics, Cybernetics and Informatics, 12*(7), 62-65. Current Status is Published.

Brown, M. (2014). Groupthink in Software Engineering. *International Journal of Computing and Business Research, 5*(1). Current Status is Published.

Brown, M., Pelosi, M. (2017). Improved Hybrid Opponent System for Professional Military Training. *Journal of Advanced in Science, Technology, and Engineering Systems, 2*(3), 1804-1814. Current Status is Published.

Pelosi, M., Garcia, C., Brown, M. (2021). Improved Paths for UAVS in Pesticide Spraying With Terrain Consideration. *Agricultural Science: An International Journal (AGRIJ), 1*(1), 61-70. https://airccse.com/agrij/papers/1121agrij03.pdf. Current Status is Published. Online Publication: November 30, 2021

Brown, M., Pelosi, M. (2019). Moving Averages Trading Method Applied to Cryptocurrencies. *An International Journal on Economics, Commerce and Trade Management, 2*(1), 13-22. Current Status is Published.

Brown, M., Bennett, T., Coker, J. (2014). Niche Genetic Algorithms are better than traditional Genetic Algorithms for de novo Protein Folding. *F1000 Research*. Current Status is Published.

Brown, M. (2019). Predictive Models for Game Outcomes in Women's Lacrosse. *An International Journal on Applied Mathematics and Sciences,, 6*(1), 1-8. Current Status is Published.

Pelosi, M., Kopp, C., Brown, M. (2012). Range Limited UAV Trajectory Using Terrain Masking Under Radar Detection Risk. *Applied Artificial Intelligence: An International Journal, 26*(8), 743-759. Current Status is Published.

Tarverdian, E., Brown, M., Pelosi, M. (2015). Selection of Direct and Derived Function Point Estimation Methods. *International Journal of Computing and Business Research,, 6*(1). Current Status is Published.

Brown, M. (2019). Sensitivity analysis of a species conserving genetic algorithm's parameters for addressing the niche radius problem. *IAES International Journal of Artificial Intelligence, 8*(2), 190-196. Current Status is Published. Online Publication: 2019

B. Non Refereed Publications / Contributions

1. Award Paper

Brown, M., Williams, L., Bennett, T. (2016). *Multiple Programming Language Introduction to Programming Course*. Effective Practice Award, Online Learning Consortium. Current Status is Published.

2. Book, Scholarly-New

Linker, S., Brown, M. (2022). *Requirements Engineering: A Modern Approach to the Requirements Engineering Body of Knowledge*. M.O.S.T Commons. Current Status is Published.

3. Conference Proceeding

Pelosi, M., Brown, M., Assadullah, M. (2017). *Decay Rate and Spacing Effect Algorithm for the Learning of Foreign Languages*. Honolulu, HI: Proceedings of the 15th Hawaii International Conference on Education. Current Status is Published.

Pelosi, M., Brown, M. (2017). *Improved Search Paths for Camera-Equipped UAVs in Wilderness Search and Rescue*. Honolulu, HI: IEEE Symposium Series on Computational Intelligence. Current Status is Published.

Pelosi, M., Kessler, G., Brown, M., Assadullah, M. (2016). *One-Time Pad Encryption Steganography Systems*. Daytona Beach, FL: Proceedings of the 11th Annual ADFSL Conference on Digital Forensics, Security and Law. Current Status is Published.

Brown, M., Tang, L., Boteju, G. (2024). *Support Vector Machine for Predicting Student Dropout Under Different Normalization Methods* (vol. 2024). Washington DC: IEEE BigData,. Current Status is Published.

4. Dissertation

Brown, M. (2010). *A Species-Conserving Genetic Algorithm for Multimodal Optimization*. Nova Southeastern University. Current Status is Published.

C. Refereed Presentations

Brown, M., IEEE Frontiers in Education,, Paper, "Increasing Accuracy in Predicting Student Test Scores with Regression using Domain Reduction Technique of Principle Component Analysis," IEEE, Peer Reviewed? Yes, Published in Proceedings? Yes. (October 21, 2023).

Brown, M., IEEE International Conference on Machine Learning and Applications, Paper, "Increasing Accuracy in Predicting Student Test Scores with Neural Networks using Domain Reduction

Technique of Principal Component Analysis," IEEE, Peer Reviewed? Yes, Published in Proceedings? Yes. (December 14, 2022).

D. Non Refereed Presentations

Brown, M., P-Tech Guest Speaker, Lecture, Clarksburg High School. (March 8, 2024).

Brown, M., P-Tech Guest Lecturer, Lecture, "Careers in IT and Plan to get a Bachelor's after graduation," Clarksburg High School Technology Program, Peer Reviewed? No, Published in Proceedings? No. (March 1, 2023).

Brown, M., IEEE Symposium Series on Computational Intelligence, Paper, "Dynamic-Radius Species-Conserving Genetic Algorithm for the Financial Forecasting of Cryptocurrencies," IEEE. (December 5, 2021).

Brown, M., IEEE Integrated STEM Education Conference., Paper, "Open Research Laboratory for Non-Research Focused Institutions," IEEE. (March 13, 2021).

Brown, M., P-Tech Guest Lecturer, Lecture, "Demonstration of a High School Sports Ranking System," Clarksburg High School Technology Program, Peer Reviewed? No, Published in Proceedings? No. (January 23, 2020).

Brown, M., P-Tech Guest Lecturer, Lecture, "Careers in the Information Technology Field," Clarksburg High School Technology Program, Peer Reviewed? No, Published in Proceedings? No. (November 5, 2018).

Brown, M., IEEE Symposium Series on Computational Intelligence, Paper, "Improved Search Paths for Camera-Equipped UAVs in Wilderness Search and Rescue," IEEE. (November 27, 2017).

Brown, M., Winter Simulation Conference, Paper, "Software Engineering a Multi-layer and Scalable Autonomous Forces A.I. for Professional Military Training." (December 11, 2016).

Brown, M., IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology, Paper, "A Complexity Measurement for de novo Protein Folding, IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology," IEEE. (August 12, 2015).

Brown, M., Guest Lecturer, Lecture, "Addressing the Protein Folding Problem with Multi-Objective Genetic Algorithm," Shippensburg University, Peer Reviewed? No, Published in Proceedings? No. (October 2, 2014).

Brown, M., Florida Artificial Intelligence Research Society, Paper, "Replication of the Niche Radius Problem using Clustering Genetic Algorithms," FLAIRS. (May 21, 2014).

Brown, M., International Conference on Machine Learning and Data Mining, Paper, "Dynamic-radius Species-conserving Genetic Algorithm for the Financial Forecasting of Dow Jones Index Stocks." (July 19, 2013).

1. Media Contributions

Internet, Oracle Member Spotlight. (2024).

Oracle created and posted a spotlight on my for my work with our Oracle partnership. https://academy.oracle.com/en/about-success-spotlight-brown.html

TV, Interview on Good Morning Washington (ABC7). (April 18, 2022).
https://wjla.com/good-morning-washington/umbc-online-ms-program-ranked-one-of-the-nations-best

Internet, UMBC's online master's in information systems is one of the nation's best, U.S. News reports features Dr. Brown. (February 15, 2022).
UMBC's online master's in information systems is one of the nation's best, U.S. News reports

Magazine, UMGC Students Helping NASA Astronauts Complete "To Do" Lists in Space features Dr. Brown. (2020).
UMGC Students Helping NASA Astronauts Complete "To Do" Lists in Space features Dr. Brown

Magazine, UMGC Students Create Sports-ranking Program for Washington Post features Dr. Brown. (2019).
UMGC Students Create Sports-ranking Program for Washington Post features Dr. Brown

Magazine, UMBC Global Media, Alliance Helps Software Engineering Students Land Jobs features Dr. Brown. (2017).
UMBC Global Media, Alliance Helps Software Engineering Students Land Jobs features Dr. Brown.

Magazine, UMUC Receives 2016 OLC Effective Practice Award for Online Innovation features Dr. Brown. (2016).
UMUC Receives 2016 OLC Effective Practice Award for Online Innovation features Dr. Brown

Magazine, Software Application Helps Reduce Drug Dosing Errors features Dr. Brown. (2016).
Software Application Helps Reduce Drug Dosing Errors features Dr. Brown

2. Professional Memberships

Senior Member, Association of Computing Machines (ACM). (January 1, 2010 - Present).

Senior Member, Institute of Electrical and Electronics Engineers (IEEE). (January 1, 2010 - Present).

3. Seminars Attended

Seminar, "EdX Global Forum," EdX. (October 1, 2023 - October 2, 2023).

4. Other Professional Development Activities Contributions

Training, "Principal Investigator Research Administration Training & Education," UMBC. (September 15, 2021 - October 15, 2021).

F. Contracts, Grants, and Sponsored Research

*Zhang, Lei (Principal), Chen, Lujie (Co-Principal), Gangopadhyay, Aryya (Supporting), Casas, Augusto (Supporting), Brown, Michael (Supporting), "Beginnings: AIM-PQC: Active and Immersive Learning of Post-Quantum Cryptography for Diverse STEM Students," Sponsored Research (Currently Under Review), Sponsored by NSF, Federal, $999,461.00.

Established collaborations with diverse organizations; Mentored students of diverse backgrounds via this effort; Recruited students of diverse backgrounds in this effort

Janeja, Vandana (Principal), Chen, Zhiyuan (Co-Principal), Brown, Michael (Co-Principal), Kleinsmith, Andrea (Co-Principal), Foulds, James (Co-Principal), Casas, Augusto (Co-Principal), Joshi, Karuna (Co-Principal), Saulynas, Sidas (Co-Principal), "Pathways to PostBac IS Online Computing Certifications," Grant (Funded), Sponsored by Northeastern University, Other, $45,000.00. (October 2023 - October 2024).

Brown, Michael, "National Association for the Blind: Accessibility Inclusion Fellowship," Fellowship, Sponsored by National Federation for the Blind, Foundation, $1,500.00. (January 1, 2021 - December 31, 2021).

Brown, Michael, "Maryland Open Source Textbook Initiative," Grant, Sponsored by University System of Maryland, Other, $2,000.00. (January 1, 2021 - December 31, 2021).

Brown, Michael, "Fulbright Grant," Grant, Sponsored by Fulbright, Federal, $35,000.00. (July 1, 2019 - August 15, 2019).

H. Professional Development

Conference Attendance, "IEEE BigData," IEEE. (December 15, 2024 - December 18, 2024).

Conference Attendance, "IEEE Frontiers in Education," IEEE. (October 13, 2024 - October 16, 2024).

Conference Attendance, "Oracle Federal Forum," Oracle. (April 15, 2024).

Conference Attendance, "OLC Innovate," Online Learning Consortium. (April 10, 2024 - April 13, 2024).

Workshop, "People-to-People Connections between the European Union and the United States of America." (February 14, 2024).

Conference Attendance, "Maryland OER Summit," University System of Maryland. (December 1, 2023).

Conference Attendance, "IEEE Frontiers in Education," IEEE. (October 18, 2023 - October 21, 2023).

Conference Attendance, "Def Con." (August 10, 2023 - August 13, 2023).

Conference Attendance, "ATARC Federal IT Modernization Summit," ATARC. Number of Credit Hours: 7, Approx. Number of Hours Spent per Year: 7. (February 8, 2023).

Conference Attendance, "International Conference on Machine Learning and Applications," IEEE. (December 12, 2022 - December 14, 2022).

Conference Attendance, "IEEE Symposium Series on Computational Intelligence," IEEE. (December 4, 2021 - December 7, 2021).

Conference Attendance, "IEEE Integrated STEM Education Conference," IEEE. (March 13, 2021).

Conference Attendance, "IEEE International Conference on Machine Learning and Applications," IEEE. (December 17, 2020).

Conference Attendance, "International Conference on Science Technology." (May 28, 2019 - May 29, 2019).

Conference Attendance, "IEEE International Conference on Machine Learning and Applications," IEEE. (December 14, 2018 - December 17, 2018).
2018 IEEE International Conference on Machine Learning and Applications, Miami, FL, December 14-17.

Conference Attendance, "Online Learning Consortium." (November 14, 2018 - November 16, 2018).

Conference Attendance, "UMUC BioTech Symposium." (May 30, 2018).
2018 UMUC BioTech Symposium, Shady Grove, MD, May 30.

Conference Attendance, "IEEE Symposium Series on Computational Intelligence," IEEE. (November 27, 2017 - December 1, 2017).
2017 IEEE Symposium Series on Computational Intelligence, Honolulu HI, Nov 27-Dec 1

Conference Attendance, "Software Technology Conference." (September 25, 2017 - September 28, 2017).

Conference Attendance, "ATARC Federal DevOps Summit," ATARC. (May 16, 2017).

Conference Attendance, "UMUC BioTech Symposium." (May 5, 2017).
2017 UMUC BioTech Symposium, Shady Grove, MD, May 5.

Conference Attendance, "IEEE Integrated STEM Education Conference. Princeton," IEEE. (March 11, 2017).

Conference Attendance, "Winter Simulation Conference," IEEE and ACM. (December 11, 2016 - December 14, 2016).
2016 Winter Simulation Conference, Arlington VA, Dec 11-14.

Conference Attendance, "Online Learning Consortium," Online Learning Consortium. (November 15, 2016 - November 17, 2016).

Conference Attendance, "IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology," IEEE. (August 12, 2015 - August 15, 2015).

Conference Attendance, "International Conference Computer Aided Verification." (July 18, 2015 - July 24, 2015).

Conference Attendance, "International Symposium on Software Testing and Analysis." (July 13, 2015 - July 17, 2015).

Conference Attendance, "IEEE Symposium Series on Computational Intelligence," IEEE. (December 9, 2014 - December 14, 2014).

Conference Attendance, "Florida Artificial Intelligence Research Society," Florida Artificial Intelligence Research Society. (May 21, 2014 - May 23, 2014).

Conference Attendance, "International Symposium on Empirical Software Engineering and Measurement." (October 10, 2013 - October 13, 2013).

Conference Attendance, "International Conference on Machine Learning and Data Mining." (July 19, 2013 - July 25, 2013).

Conference Attendance, "Metastorm User's Conference," Metastorm. (2009).

Conference Attendance, "JavaOne," Sun Microsystems. (2005).

IV. MENTORING

V. SERVICE

A. Department Service

Liaison for External Academic Partnerships. (September 1, 2023 - Present).

Committee Member, On-Campus Graduate Application Selection Committee. (September 1, 2023 - August 30, 2025).

Committee Member, Graduate Professional Programs Committee. (January 1, 2022 - August 31, 2023).

Committee Chair, Online Master in Information System Committee. (January 1, 2022 - August 31, 2023).

Graduate Program Director, Online Masters in Information Systems. (January 1, 2022 - August 30, 2023).

Committee Member, HIT Lecturer Search Committee, approximately 20 hours spent for the year. (December 1, 2022 - April 1, 2023).

Committee Member, Assistant Graduate Program Director -HIT, Search Committee. (September 1, 2022 - December 1, 2022).

Committee Chair, Marketing Position Search Committee. (February 2, 2022 - July 15, 2022).

B. College Service

Grant Proposal Reviewer, Internal. (August 15, 2024 - August 28, 2024).

C. University Service

Student Org Advisor (Non-Professional Org), Athletics Faculty Liaison Program, Pro Bono. (November 18, 2021 - August 30, 2025).
To foster and strengthen the relationship between academics and athletics by offering new insight into the student-athlete experience by allowing the campus community to gain a better understanding of the Athletic Department's vision and core values. To assist in the retention of students by illustrating the investment of the faculty and intellectual community in their academic and athletic success.

D. Professional Service

Reviewer, Grant Proposal, Fulbright, Pro Bono. (August 1, 2021 - September 1, 2021).
I was a Fulbright Junior Research Award reviewer.

Reviewer, Conference Paper, IEEE SSCI, Pro Bono. (August 1, 2021 - August 30, 2021).
I was a reviewer for the 2021 IEEE Symposium Series on Computational Intelligence (SSCI).

Reviewer, Conference Paper, IEEE CEC. (2016).
Reviewer, IEEE Congress on Evolutionary Computation (CEC

Reviewer, Conference Paper, INFOS. (2016).
Reviewer, International Conference on Informatics and Systems (INFOS)

E. Community Service

Mentor to high school P-Tech student, P-Tech, Clarksburg, MD, Pro Bono. (October 1, 2017 - Present).
Clarksburg High School has a P-Tech program where high school students can get an Associate's degree while still in high school. This is through Montgomery College. Each student has a mentor. Dr. Brown is a mentor to a Senior named Jadon, who he mentored since his Freshmen year.

VI. HONORS/AWARDS/RECOGNITIONS

Career Connector Recognition Award, UMBC's Career Development Center, Service, University, University. (April 26, 2024).

Senior Membership, ACM, International. (May 1, 2022).

Innovation Award, University of Maryland Global Campus, Teaching, University. (2019).

Effective Practice Award, Online Learning Consortium, Teaching, International. (2018).
Eliminating Redundancies in Online Learning Material

Effective Practice Award, Online Learning Consortium, Teaching, International. (2016).
Multiple Programming Language Introduction to Programming Course

Top 25 Software Engineering Professors to Know, OnlineEngineeringPrograms.com, Teaching, National. (2016).

Certificate of Recognition for Notable Scholarly Activity in the Area of Professional Publications, University of Maryland Global Campus, Scholarship/Research. (2014).

VII. GENERAL COMMENTS

I hereby certify that all of the information provided is correct, accurate, and complete to the best of my knowledge

Chair Signature _____

Faculty Signature_____

CURRICULUM VITAE

CAROLYN B. SEAMAN

Education

Ph.D.	1996	University of Maryland College Park, Computer Science
M.S.	1987	Georgia Institute of Technology, Information and Computer Science
B.A.	1986	College of Wooster (Ohio), Computer Science and Mathematics

Experience in Higher Education:

2020-present	UMBC, Professor, Information Systems
2020-present	UMBC, Director, Center for Women in Technology (CWIT)
2018-2020	UMBC, Interim Director, Center for Women in Technology (CWIT)
2016-2018	UMBC, Associate Director of Undergraduate Programs and Advising Coordinator, Information Systems
2012-2013	UFPE Center for Informatics, Visiting Researcher (Recife, Brazil)
2010-2016	UMBC, Director of Undergraduate Programs, Information Systems
2004-2020	UMBC, Associate Professor, Information Systems
1998-2004	UMBC, Assistant Professor, Information Systems
1996-1998	University of Maryland College Park, Faculty Research Assistant, Computer Science
1991-1996	University of Maryland College Park, Graduate Research Assistant, Computer Science
Summer 1995	University of Maryland College Park, Instructor, Computer Science
1986-1987	Georgia Institute of Technology, Graduate Research Assistant, Computer Science

Experience in other than Higher Education:

1998-2017	Fraunhofer USA Center for Experimental Software Engineering, College Park, MD, Research Fellow
1990-1991	Managua, Nicaragua, Consultant
1989	Municipal Management Systems, Pittsburgh, PA, Developer
1988	San Jose, Costa Rica, Consultant
1987-1988	Unisys Corporation, Paoli, PA, Research Programmer

Courses Taught

IS 125	Information Systems Logic and Structured Design
IS 202	Systems Analysis
IS 436	Structured Systems Analysis and Design (undergraduate)
IS 472	Software Security
IS 636	Structured Systems Analysis and Design (graduate)
IS 634	Structured Systems Analysis and Design (graduate distance)
IS 698	Special Topics: System Maintenance
IS 805	Advanced Field Research Methods

Teaching-related accomplishments:

- Student course evaluations average 4 on a scale of 5
- Developed a real coordinated class research project for IS 805
- Developed a new course in Software Security

Research Support and/or Fellowships

2022-2027	$788,625	National Science Foundation (T-SITE Scholarships)
2022-2024	$294,726	National Science Foundation (pedagogical research)
2022	$11,253	Cyber Pack Ventures (software engineering research)
2020-2023	$560,541	National Science Foundation (software engineering research)
2016-2023	$1,117,000	National Science Foundation (pedagogical research)
2015-2020	$632,000	National Science Foundation (T-SITE Scholarships)
2015-2018	$400,000	National Science Foundation (undergraduate cybersecurity)
2012-2017	$600,000	National Science Foundation (T-SITE Scholarships)
2012-2014	$154,000	National Science Foundation (pedagogical research)
2013-2014	$18,000	National Science Foundation (travel grant)
2012-2013	$35,000	Conselho Nacional de Desenvolvimento Científico e Tecnológico (Brazil)
2009-2013	$500,000	National Science Foundation (software engineering research)
2006-2009	$60,000	Xerox Corporation
2002-2003	$76,000	Maryland Industrial Partnerships
2000-2004	$230,000	National Science Foundation (CAREER)
1999	$4,000	UMBC Summer Faculty Fellowship
1992-1994	$75,000	IBM Canada Ltd.

Publications, Other Creative Efforts, and Professional Activities - Please see attached

University Service (current)

UMBC Chapter of Phi Beta Kappa, Chapter Historian
UMBC ADVANCE Leadership Alliance
COEIT Leadership Council
UMBC Women's Center Advisory Board
UMBC Interdisciplinary Activities Advisory Committee
UMBC Campus Climate Coordinating Group

List of Publications

Refereed Journal Publications

"A Comprehensive View on TD Prevention Practices and Reasons for Not Preventing It." Freire, S., Pacheco, A., Rios, N., Pérez, B., Castellanos, C., Correal, D., ... & Spínola, R. (2024). *ACM Transactions on Software Engineering and Methodology*, *33*(7), 1-44.

"A rule-based decision model to support technical debt decisions: A multiple case study of web and mobile app startups." Aldaeej, A., & Seaman, C. (2024). *Information and Software Technology*, *175*, 107542.

"Do code reviews lead to fewer code smells?" Tuna, E., Seaman, C., & Tüzün, E. (2024). *Journal of Systems and Software*, *215*, 112101.

Freire, S., Rios, N., Pérez, B., Castellanos, C., Correal, D., Ramač, R., ... & Spínola, R. (2024). Hearing the Voice of Software Practitioners on Technical Debt Monitoring: Understanding Monitoring Practices and the Practices' Avoidance Reasons. *Journal of Software Engineering*, *12*, 11.

"Software practitioners' point of view on technical debt payment", Sávio Freire, Nicolli Rios, Boris Pérez, Camilo Castellanos, Darío Correal, Robert Ramač, Vladimir Mandić, Nebojša Taušan, Gustavo López, Alexia Pacheco, Manoel Mendonça, Davide Falessi, Clemente Izurieta, Carolyn Seaman, Rodrigo Spínola. *Journal of Systems and Software*, Volume 196, 2023, https://doi.org/10.1016/j.jss.2022.111554.

"Investigating the Relationship between Technical Debt Management and Software Development Issues", Clara Berenguer, Adriano Borges, Sávio Freire, Nicolli Rios, Robert Ramač, Nebojša Taušan, Boris Pérez, Camilo Castellanos, Dario Correal, Alexia Pacheco, Gustavo López, Manoel Mendonça, Davide Falessi, Carolyn Seaman, Vladimir Mandić, Clemente Izurieta, Rodrigo Spínola,. (2023). *Journal of Software Engineering Research and Development*. 10.5753/jserd.2023.2581.

"Making Technical Debt Visible Using Hybrid Sankey Diagrams: An Industrial Case Study", Alexia Pacheco, Gabriela Marín-Raventós, Rodrigo Spínola, Gustavo López, and Carolyn Seaman. *International Journal of Software Engineering and Knowledge Engineering*, Vol. 32, No. 10, pp. 1583-1616, October 2022.

"Prevalence, common causes and effects of technical debt: Results from a family of surveys with the IT industry", Robert Ramač, Vladimir Mandić, NebojšaTaušan, Nicolli Rios, Sávio Freire, Boris Pérez, Camilo Castellanos, Darío Correal, Alexia Pacheco, Gustavo Lopez, Clemente Izurieta, Carolyn Seaman, and Rodrigo Spinola. *Journal of Systems and Software*, Vol. 184, February 2022. https://doi.org/10.1016/j.jss.2021.111114.

"Introduction to the Special Issue on value and waste in software engineering", Michael Felderer, Matthias Galster, Clemente Izurieta, Carolyn Seaman. *Information and Software Technology*, vol. 144, April 2022. https://doi.org/10.1016/j.infsof.2021.106801

"Pitfalls and Solutions for Technical Debt Management in Agile Software Projects". Sávio Freire, Nicolli Rios, Boris Perez, Camilo Castellanos, Dario Correal, Robert Ramač, Vladimir Mandič, Nebojša Taušan, Alexia Pacheco, Gustavo López, Manoel Mendonça, Clemente Izurieta, Davide Falessi, Carolyn Seaman, and Rodrigo Spínola. in IEEE Software, vol. 38, no. 06, pp. 42-49, 2021. doi: 10.1109/MS.2021.3101990

"Technical and Nontechnical Prioritization Schema for Technical Debt: Voice of TD-Experienced Practitioners," Vladimir Mandič, Nebojša Taušan, Robert Ramač, Sávio Freire, Nicolli Rios, Boris Pírez, Camilo Castellanos, Dario Correal, Alexia Pacheco, Gustavo López, Clemente Izurieta, Davide Falessi, Carolyn Seaman, and Rodrigo Spínola. in IEEE Software, vol. 38, no. 6, pp. 50-58, Nov.-Dec. 2021, doi: 10.1109/MS.2021.3103121.

"Technical debt payment and prevention through the lenses of software architects". Boris Pérez, Camilo Castellanos, Dario Correal, Nicolli Rios, Savio Freire, Rodrigo Spinola, Carolyn Seaman, Clemente Izurieta. Information and Software Technology, Volume 140, December 2021. https://www.sciencedirect.com/science/article/pii/S0950584921001476?dgcid=author

"On the Relationship Between Technical Debt Management and Process Models". Nicolli Rios, Savio Freire, Boris Pérez, Camilo Castellanos, Dario Correal, Manoel Mendonca, Davide Falessi, Clemente Izurieta, Carolyn Seaman, Rodrigo Spinola. IEEE Software. February 2021. DOI: 10.1109/MS.2021.3058652.

"The Teamwork Process Antecedents (TPA) questionnaire: developing and validating a comprehensive measure for assessing antecedents of teamwork process quality", George Marsicano, Fabio Q. B. da Silva, Carolyn B. Seaman and Breno Giovanni Adaid-Castro. *Empirical Software Engineering,* volume 25, pages 3928–3976, 2020.

"The Practitioners' Point of View on the Concept of Technical Debt and its Causes and Consequences: A Design for a Global Family of Industrial Surveys and its First Results from Brazil", Nicolli Rios, Rodrigo Oliveira Spínola, Manoel Mendonça, and Carolyn Seaman. *Empirical Software Engineering Journal*, 25, pages 3216–3287, 2020.

"Understanding automated and human-based technical debt identification approaches-a two-phase study", Rodrigo O. Spínola, Nico Zazworka, Antonio Vetro, Forrest Shull and Carolyn Seaman. *Journal of the Brazilian Computer Society*. 25:5 (2019). https://doi.org/10.1186/s13173-019-0087-5.

"Theoretical Conceptualization of TD: a Practical Perspective", Clauirton A. Siebra, Rebeka Oliveira, Carolyn B. Seaman, Fabio Q.B. da Silva, and Andre L.M. Santos. In *The Journal of Systems and Software*, v.120, 219-237, Special Issue on Technical Debt in Software Systems, 2016. DOI: 10.1016/j.jss.2016.05.043

"Costs and obstacles encountered in technical debt management – A case study", Yuepu Guo, Carolyn Seaman, and Fabio Q.B. da Silva. Journal of Systems and Software, Volume 120, pp. 156-169. October 2016. doi:10.1016/j.jss.2016.07.008.

"Could removal of project-level knowledge flow obstacles contribute to software process improvement? A study of software engineer perceptions", Susan M. Mitchell, Carolyn B. Seaman. *Information and Software Technology.* Volume 72, pp. 151-170. April 2016. doi:10.1016/j.infsof.2015.12.007

"Exploring the costs of technical debt management – a case study", Yuepu Guo, Rodrigo Oliveira Spínola, Carolyn Seaman. *Empirical Software Engineering*. 21(1):159-182, February 2016.

"Identification and management of technical debt: A systematic mapping study", Nicolli S.R. Alves, Thiago S. Mendes, Manoel G. de Mendonça, Rodrigo O. Spínola, Forrest Shull, Carolyn Seaman. *Information and Software Technology*. Volume 70, pp. 100-121. February 2016. doi:10.1016/j.infsof.2015.10.008

"Reducing Friction in Software Development", Paris Avgeriou, Philippe Kruchten, Robert L. Nord, Ipek Ozkaya, Carolyn Seaman. *IEEE Software*, January 2016, pp. 66-73.

"Comparing four approaches for technical debt identification", Nico Zazworka, Antonio Vetro', Clemente Izurieta, Sunny Wong, Yuanfang Cai, Carolyn Seaman and Forrest Shull, *Software Quality Journal*, 21(2), June 2013. DOI: 10.1007/s11219-013-9200-8.

"A Balancing Act: What Software Practitioners Have to Say about Technical Debt." Erin Lim, Nitin Taksande, and Carolyn Seaman. *IEEE Software*, 29(6):22-27, DOI: 10.1109/MS.2012.130, 2012.

"An empirical study of process knowledge: coherence as a static process property," Carlton A. Crabtree, Anthony F. Norcio, and Carolyn B. Seaman. *Journal of Software Evolution and Process*, DOI:10.1002/smr.1567, August 2012.

"Linking Software Development and Business Strategy Through Measurement," Victor Basili , Jens Heidrich, Mikael Lindvall, Jürgen Münch, Myrna Regardie, Dieter Rombach, Carolyn Seaman, Adam Trendowicz. *IEEE Computer*, 43:4(57-65), DOI: 10.1109/MC.2010.108. April 2010.

"An Empirical Investigation into the Adoption of Open Source Software in Hospitals", Gilberto Munoz-Cornejo, Carolyn B. Seaman, and A. Güneş Koru. *International Journal of Healthcare Information Systems and Informatics.* 3(3):16-37, July-September 2008.

"Revealing actual documentation usage in software maintenance through war stories", Wayne G. Lutters and Carolyn B. Seaman. *Information and Software Technology*. 49(6):576-587, January 2007.

"User Interface Evaluation and Empirically-Based Evolution of a Prototype Experience Management Tool," Carolyn B. Seaman, Manoel Mendonca, Victor Basili, Yong-Mi Kim. *IEEE Transactions on Software Engineering*, 29(9): 838-850, September 2003.

"COTS-Based Software Development: Processes and Open Issues", M. Morisio, C.B. Seaman, V.R. Basili, A.T. Parra, S.E. Kraft, and S.E. Condon. *Journal of Systems and Software*, 61(3):189-199, April 2002.

"Qualitative Methods in Empirical Studies of Software Engineering," Carolyn B. Seaman, *IEEE Transactions on Software Engineering,* 25(4):557-572, July/August 1999.

"Q-MOPP: Qualitative evaluation of Maintenance Organizations, Processes, and Products", Lionel Briand, Yong-Mi Kim, Walcelio Melo, Carolyn Seaman, and Victor Basili, *Journal of Software Maintenance*, 10:249-278, 1998.

"Communication and Organization: An Empirical Study of Discussion in Inspection Meetings", Carolyn B. Seaman and Victor R. Basili, *IEEE Transactions on Software Engineering*, 24(7):559-572, July 1998.

"The Study of Software Maintenance Organizations and Processes", Carolyn B. Seaman and Victor R. Basili, a position paper presented at the *International Workshop on Empirical Studies of Software Maintenance (WESS)*, Monterey, CA, November 1996, and published in *Empirical Software Engineering*, 2:2(197-201).

"Communication and Organization in Software Development: An Empirical Study", Carolyn B. Seaman and Victor R. Basili, *IBM Systems Journal*, 36(4), 1997.

Refereed Conference Publications

"Modeling, Analyzing and Communicating Regulatory Ambiguity: An Empirical study." Kempe, E., Massey, A., Seaman, C., Sampath, S., & Semsar, S. (2024, April). In *Proceedings of the 1st IEEE/ACM Workshop on Multi-disciplinary, Open, and RElevant Requirements Engineering* (pp. 28-34).

"Perceptions of Task Interdependence in Software Development: An Industrial Case Study." de Barros Souza, M. B., da Silva, F. Q., & Seaman, C. (2023, May). In *2023 IEEE/ACM 16th International Conference on Cooperative and Human Aspects of Software Engineering (CHASE)* (pp. 127-137). IEEE.

"Assessing IDEA Diagrams for Supporting Analysis of Capabilities and Issues in Technical Debt

Management", Freire, S., Rocha, V., Mendonça, M., Izurieta, C., Seaman, C., Spínola, R. (2024).. In: Kadgien, R., Jedlitschka, A., Janes, A., Lenarduzzi, V., Li, X. (eds) *Product-Focused Software Process Improvement. PROFES 2023*. Lecture Notes in Computer Science, vol 14483. Springer, Cham. https://doi.org/10.1007/978-3-031-49266-2_17

"Investigating how Agile Software Practitioners Repay Technical Debt in Software Projects." Soares, G., Freire, S., Rios, N., Perez, B., Castellanos, C., Correal, D., Mendonca, M., Izurieta, C., Spinola, R., Seaman, C. Brazilian Symposium on Software Quality. 2022.

"Organizing the TD Management Landscape for Requirements and Requirements Documentation Debt." Barbosa, L., Freire, S., Rios, N., Ramac, R., Tausan, N., Perez, B., Castellanos, C., Correal, D., Pacheco, A., Lopez, G., Mandic, V., Maciel, R., Mendonca, M., Falessi, D., Izurieta, C., Seaman, C., Spinola, R. Workshop on Requirements Engineering. 2022.

"Sonarlizer xplorer: a tool to mine github projects and identify technical debt items using SonarQube" Pina, D., Seaman, C., Goldman, A. (pp. 71-75). TechDebt 2022.

"Technical debt prioritization: a developer's perspective" Pina, D., Seaman, C., Goldman, A. (2022). (pp. 46-55). TechDebt 2022.

"The Negative Implications of Technical Debt on Software Startups: What they are and when they surface." Aldaeej, A., Seaman, C. IEEE/ACM International Workshop on Software-Intensive Business (IWSiB), 2022.

"Technical Debt is not Only about Code and We Need to be Aware about it", Clara Berenguer, Adriano Borges, Sávio Freire, Nicolli Rios, Nebojša Taušan, Robert Ramač, Boris Pérez, Camilo Castellanos, Darío Correal, Alexia Pacheco, Gustavo López, Davide Falessi, Carolyn Seaman, Vladimir Mandić, Clemente Izurieta, Rodrigo Spínola. SBQS '21: XX Brazilian Symposium on Software Quality, pp. 1-12, November 2021. https://doi.org/10.1145/3493244.3493285

"How Experience Impacts Practitioners' Perception of Causes and Effects of Technical Debt", Sávio Freire, Nicolli Rios, Boris Pérez, Camilo Castellanos, Darío Correal, Robert Ramač, Vladimir Mandić, Nebojša Taušan, Gustavo López, Alexia Pacheco, Davide Falessi, Manoel Mendonça, Clemente Izurieta, Carolyn Seaman, Rodrigo Spínola. *14th International Conference on Cooperative and Human Aspects of Software Engineering* (CHASE 2021), May 2021.

"How Do Technical Debt Payment Practices Relate to the Effects of the Presence of Debt Items in Software Projects?", Sávio Freire; Nicolli Rios; Boris Pérez; Darío Torres; Manoel Mendonça; Clemente Izurieta; Carolyn Seaman; Rodrigo Spínola. *IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER),* May 2021.

"Common Causes and Effects of Technical Debt in Serbian IT: InsighTD Survey Replication", Robert Ramač, Vladimir Mandić, Nebojša Taušan, Nicolli Rios, Manoel G. de Mendonca Neto, Carolyn Seaman, Rodrigo O. Spínola. *Euromicro Conference on Software Engineering and Advanced Applications (SEAA),* October 2020.

"What are the Practices used by Software Practitioners on s? Results From an International Family of Surveys". Boris Pérez, Camilo Castellanos, Darío Correal, Nicolli Rios, Sávio Freire, Rodrigo Spínola, Carolyn Seaman. IEEE/ACM International Conference on Technical Debt (Tech Debt 2020). June 2020. Pages 103–112. https://doi.org/10.1145/338s7906.3388632

"Hearing the Voice of Software Practitioners on Causes, Effects, and Practices to Deal with Documentation Debt", Nicolli Rios, Leonardo Mendes, Cristina Cerdeiral, Ana Patrícia F. Magalhães, Boris Perez, Darío Correal, Hernán Astudillo, Carolyn Seaman, Clemente Izurieta, Gleison Santos, Rodrigo Oliveira Spínola, *REFSQ 2020: Requirements Engineering: Foundation for Software Quality*, pp 55-70, March 2020.

"Before and Beyond Transfer: Supporting Computing and Engineering Students From Community College to University", Ireland, D. T., Seaman, C., Starobin, S. S., Laanan, F. S. & Hipshman, I. *AERA Annual Meeting* [Paper Session], San Francisco, CA, April 2020. http://tinyurl.com/vw5w3fw (Conference Canceled).

"Surveying Software Practitioners on Technical Debt Payment Practices and probabil off Debt Items", Sávio Freire, Nicolli Rios, Boris Pérez, Darío Correal, Manoel Mendonça, Clemente Izurieta, Carolyn Seaman and Rodrigo Oliveira Spínola**.** *Proceedings of the Conference on Evaluation and Assessment in Software Engineering (EASE)*, April 2020.

"Actions and Impediments for Technical Debt Prevention: Results from a Global Family of Industrial Surveys", Sávio Freire, Nicolli Rios, Manoel Mendonça, Davide Falessi, Carolyn Seaman, Clemente Izurieta, Rodrigo O. Spínola. *Proceedings of the 35th Annual ACM Symposium on Applied Computing*

March 2020 Pages 1548–1555. https://doi.org/10.1145/3341105.3373912.

"Familiarity, Causes, and Reactions of Software Practitioners to the Presence of Technical Debt: A Replicated Study in the Chilean Software Industry", Boris Pérez, Juan Pablo Brito, Hernán Astudillo, Darío Correal, Nicolli Rios, Rodrigo Oliveira Spínola Manoel Mendonça, Carolyn Seaman. *38th International Conference of the Chilean Computer Science Society (SCCC)*, November 2019.
DOI**:** 10.1109/SCCC49216.2019.8966424

"Investigating Variability-aware Smells in SPLs: An Exploratory Study", Iuri Santos Souza, Ivan do Carmo Machado, Carolyn Seaman, Gecynalda Soares da Silva Gomes, Christina von Flach Garcia Chavez, Eduardo Santa de Almeida, and Paulo Cesar Masiero. *Proceedings of the Brazilian Symposium on Software Engineering (SBES)*, September 2019, Salvador, Brazil.

"Causes and Effects of the Presence of Technical Debt in Agile Software Projects", Nicolli Rios**,** Manoel G. Mendonça**,** Carolyn Seaman**,** Rodrigo O. Spinola. *Americas Conference on Information Systems*, August 2019.

"Supporting Analysis of Technical Debt Causes and Effects with Cross-Company Probabilistic Cause-Effect Diagrams", Nicolli Rios**,** Rodrigo Oliveira Spinola, Manoel Mendonça**,** and Carolyn Seaman. 2019 IEEE/ACM International Conference on Technical Debt (TechDebt19), May 2019.

"The most common causes and effects of technical debt: first results from a global family of industrial surveys", Nicolli Rios, Rodrigo Oliveira Spínola, Manoel Mendonça, and Carolyn Seaman. *Proceedings of the 12th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement*, October 2018, Oulu, Finland.

"From Lasagna to Spaghetti: A Decision Model to Manage Defect Debt", Abdullah Aldaeej and Carolyn Seaman. *2018 IEEE/ACM International Conference on Technical Debt (TechDebt).* May 2018, Gothenberg, Sweden.

"A Study of Factors that Lead Development Teams to Incur Technical Debt in Software Projects", Nicolli Rios, Rodrigo Oliveira Spínola, Manoel G. de Mendonça, and Carolyn Seaman. *The Euromicro Conference on Software Engineering and Advanced Applications (SEAA)*, August 2018, Prague.

"Enhancing Interest in Cybersecurity Careers: A Peer Mentoring Perspective", Vandana Janeja, Abu Zaher Md Faridee, Aryya Gangopadhyay, Carolyn Seaman, and Amy Everhart. *Proceedings of the 49th ACM Technical Symposium on Computer Science Education (SIGCSE 18)*, February 2018, Baltimore, MD.

"Describing What Experimental Software Engineering Experts Do When They Design Their Experiments – A Qualitative Study", Liliane Sheyla da Silva Fonseca, Carolyn Budinger Seaman, Sergio Castelo Branco Soares. *2017 ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*, November 2017, Toronto, Canada.

"Chasing the AHA! Moment: Exploring initial learnability of programming languages", Brian Frey, Juliana Doddridge, and Carolyn Seaman. *2017 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, October 2017, Raleigh, NC.

"Effects of Technical Debt Awareness: A Classroom Study", Graziela Simone Tonin, Alfredo Goldman, Carolyn Seaman, Diogo Pina. *18th International Conference on Agile Software Development (XP 2017)*, May 2017, Cologne, Germany.

"Developing a Value-Based Methodology for Satisfying NASA Software Assurance Requirements", Daniel Port, Joel Wilf, Madeline Diep, Carolyn Seaman, Martin Feather. *49th Hawaii International Conference on System Sciences (HICSS)*, January 2016, pp. 5642-5651, doi:10.1109/HICSS.2016.698

"A Mapping Study of Software Causal Factors for Improving Maintenance", C. Carroll, D. Falessi, V. Forney, A. Frances, C. Izurieta, C. Seaman. *IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM 2015),* Beijing, China, October 2015.

"Scientists tell stories: About seeking help with programming", Brian Frey and Carolyn Seaman. *2015 IEEE Symposium on visual Languages and Human-Centric Computing (VL/HCC)*. October 2015. Atlanta, USA.

"Ask the engineers: exploring repertory grids and personal constructs for software data analysis", Lucas Layman, Carolyn Seaman, Davide Falessi, and Madeline Diep. *Proceedings of the 8th International*

Workshop on Cooperative and Human Aspects of Software Engineering, pp. 81-84. May 2015, Florence, Italy.

"Measuring Shared Understanding in Software Project Teams using Pathfinder Networks", Brandt Braunschweig and Carolyn Seaman. *IEEE/ACM International Symposium on Empirical Software Engineering and Measurement (ESEM 2014),* Torino, Italy, September 2014.

"An Examination of Shared Understanding in Free/Libre Open Source Project Maintenance", Brandt Braunschweig and Carolyn Seaman. 6th International Workshop on Cooperative and Human Aspects of Software Engineering (CHASE 2013). San Francisco, USA, May 2013.

"Investigating Technical Debt Folklore", Rodrigo Spínola, Nico Zazworka, Antonio Vetro', Carolyn Seaman, and Forrest Shull. 4th International Workshop on Managing Technical Debt. San Francisco, USA, May 2013.

"A Case Study on Effectively Identifying Technical Debt", Nico Zazworka, Rodrigo Spínola, Antonio Vetro', Forrest Shull, and Carolyn Seaman. 17th International Conference on Evaluation and Assessment in Software Engineering (EASE 2013), Porto de Galinhas, Brazil, April 2013.

"Using technical debt data in decision making: Potential decision approaches." Carolyn Seaman, Yuepu Guo, Clemente Izurieta, Yuanfang Cai, Nico Zazworka, Forrest Shull, and Antonio Vetro'. *Third International Workshop on Managing Technical Debt (MTD)*, pp. 45-48, DOI: 10.1109/MTD.2012.6225999, 2012.

"Defining the decision factors for managing defects: A technical debt perspective." Will Snipes, Brian Robinson, Yuepu Guo, and Carolyn Seaman. *Third International Workshop on Managing Technical Debt (MTD)*, pp. 54-60, DOI: 10.1109/MTD.2012.6226001 , 2012.

"Organizing the Technical Debt Landscape." Clemente Izurieta, Antonio Vetro', Nico Zazworka, Yuanfang Cai, Carolyn Seaman, and Forrest Shull. *Third International Workshop on Managing Technical Debt (MTD)*, pp. 23-26, DOI: 10.1109/MTD.2012.6225995, 2012.

"Software Process Improvement through the Identification and Removal of Project-level Knowledge Flow Obstacles". Susan M. Mitchell and Carolyn B. Seaman. *International Conference on Software Engineering* (ICSE), Track on New Insights and Emerging Results (NIER), pp. 1265-68, DOI: 10.1109/ICSE.2012.6227103, 2012.

"Using the ISO/IEC 9126 product quality model to classify defects: A controlled experiment." Antonio Vetro', Nico Zazworka, Carolyn Seaman, and Forrest Shull. *16th International Conference on Evaluation and Assessment in Software Engineering (EASE 2012)*, pp. 187-196, DOI: 10.1049/ic.2012.0025, 2012.

"A Knowledge Mapping Technique for Project-level Knowledge Flow Analysis". Susan M. Mitchell and Carolyn B. Seaman. *International Symposium on Empirical Software Engineering and Measurement*. Pp. 347-350. DOI: 10.1109/ESEM.2011.45, 2011.

"Tracking Technical Debt – An Exploratory Case Study", Yuepu Guo, Carolyn Seaman, Rebeka Gomes, Antonio Cavalcanti, Graziela Tonin, Fabio Q. B. Da Silva, André L. M. Santos, Clauirton Siebra, *Proceedings of the 27th IEEE International Conference on Software Maintenance (ICSM' 11)*, 528-531, DOI: 10.1109/ICSM.2011.6080824. 2011

"An Empirical Study of the Accuracy of Software Process Elicitation: The User Articulated Method (UAM)", Carlton A. Crabtree, Anthony F. Norcio, & Carolyn B. Seaman. *International Conference on Systems and Software Process (ICSSP)*. Honolulu, Hawaii, May 2011.

"Investigating the Impact of Design Debt on Software Quality", Nico Zazworka, Michele A. Shaw, Forrest Shull, Carolyn Seaman, *Proceeding of the 2nd Workshop on Managing Technical Debt*, 17-23, 2011.

"A Portfolio Approach to Technical Debt Management", Yuepu Guo and Carolyn Seaman, *Proceeding of the 2nd Workshop on Managing Technical Debt*, 31-34, 2011.

"Prioritizing Design Debt Investment Opportunities", Nico Zazworka, Carolyn Seaman, Forrest Shull, *Proceeding of the 2nd Workshop on Managing Technical Debt*, 39-42, 2011.

"Managing Technical Debt in Software-reliant Systems", Nanette Brown, Yuanfang Cai, Yuepu Guo, Rick

Kazman, Miryung Kim, Philippe Kruchten, Erin Lim, Alan MacCormack, Robert Nord, Ipek Ozkaya, Raghvinder Sangwan, Carolyn Seaman, Kevin Sullivan, Nico Zazworka, *Proceedings of the 18th FSE/SDP Workshop on Future of Software Engineering Research*, 47-52, DOI: 10.1145/1882362.1882373. 2010.

"Building Empirical Support for Automated Code Smell Detection", Jan Schumacher, Nico Zazworka, Forrest Shull, Carolyn Seaman, Michele Shaw, *Proceedings of the 4th International Symposium on Empirical Software Engineering and Measurement (ESEM '10)*, 67-76, DOI: 10.1145/1852786.1852797. 2010.

"Domain-Specific Tailoring of Code Smells: An Empirical Study", Yuepu Guo, Carolyn Seaman, Nico Zazworka, Forrest Shull, *Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering (ICSE '10)*, 167-170, 10.1145/1810295.1810321. 2010.

"Exploring Language in Software Process Elicitation: A Grounded Theory Approach," Carlton Crabtree, Carolyn B. Seaman, Anthony F. Norcio, *International Symposium on Empirical Software Engineering and Measurement (ESEM09)*, Lake Buena Vista, USA, October 2009.

"Gauging acceptance of software metrics: Comparing perspectives of managers and developers," Medha Umarji and Carolyn Seaman, *International Symposium on Empirical Software Engineering and Measurement (ESEM09)*, Lake Buena Vista, USA, DOI: 10.1109/ESEM.2009.5315999. October 2009.

"Software Engineering Education for Bioinformatics," Umarji, M., Seaman, C., Koru, A.G., Liu, H. *22nd IEEE-CS Conference on Software Engineering Education and Training*, pp. 216-223, DOI: 10.1109/CSEET.2009.44. Feb 2009, Hyderabad, India.

"Defect Categorization: Making Use of a Decade of Widely Varying Historical Data", Carolyn Seaman, Forrest Shull, Myrna Regardie, Denis Elbert, Raimund Feldmann, Yuepu Guo, and Sally Godfrey. *International Symposium on Empirical Software Engineering and Measurement (ESEM08),* Kaiserslautern, Germany, October 2008.

"Why do Programmers Avoid Metrics?", Medha Umarji and Carolyn Seaman. *International Symposium on Empirical Software Engineering and Measurement (ESEM08),* Kaiserslautern, Germany, DOI: 10.1145/1414004.1414027. October 2008.

"A Survey of Software Project Managers on Software Process Change", Yuepu Guo and Carolyn Seaman. *International Symposium on Empirical Software Engineering and Measurement (ESEM08),* Kaiserslautern, Germany, October 2008.

"Going Beyond the Numbers – the Usefulness of Qualitative Data on Software Development Projects," Linda Esker, Carolyn Seaman, Forrest Shull, and Kathleen Dangle, *Proceedings of the 20th Systems & Software Technology Conference*, Las Vegas, Nevada, May 2008.

"Bridging the Gap Between Business Strategy and Software Development", Victor Basili, Mikael Lindvall, Myrna Regardie, Carolyn Seaman, Jens Heidrich, Jurgen Munch, Dieter Rombach, and Adam Trendowicz. *Proceedings of the International Conference on Information Systems (ICIS 2007)*, Montreal, December 2007.

"GQM+Strategies: A Comprehensive Methodology for Aligning Business Strategies with Software Measurement", Victor Basili, Jens Heidrich, Mikael Lindvall, Jurgen Munch, Myrna Regardie, Dieter Rombach, Carolyn Seaman, and Adam Trendowicz. *Metrikon 2007*, Kaiserslautern, Germany, November 2007.

"Understanding Documentation Value in Software Maintenance", Sumita Das, Wayne G. Lutters, and Carolyn B. Seaman. *ACM Symposium on Computer Human Interaction for Management of Information Technology* (CHIMIT), Boston, March 2007 (poster).

"On the Impact of a Collaborative Pedagogy on African-American Millennial Students in Software Engineering", Laurie Williams, Lucas Layman, Kelli M. Slaten, Sarah B. Berenson, and Carolyn Seaman.

Proceedings of the International Conference on Software Engineering (ICSE 2007) Education Track, pp. 677-687, Minneapolis, USA, May 2007.

"Conceptualizing Software Engineering People issues", M. Umarji and C. Seaman. *Workshop on Ontology, Conceptualizations and Epistemology for Software and Systems Engineering*, June 9-10, 2005, Madrid, Spain.

"Predicting Acceptance of Software Process Improvement", M. Umarji and C. Seaman. *Workshop on Human and Social Factors in Software Engineering (HSSE'05)* – Co-located with *ICSE'05*, St. Louis, Missouri, May 2005.

"A Web Repository of Lessons Learned from COTS-Based Software Development", I. Rus, C. Seaman, M. Lindvall, and V.R. Basili. *In Proceedings of The 27th Annual IEEE/NASA Software Engineering Workshop*, December 2002.

"The Information Gathering Strategies of Software Maintainers," Carolyn B. Seaman. *International Conference on Software Maintenance*, October 2002.

"An Experience Management System for a Software Engineering Research Organization", Victor Basili, Patricia Costa, Mikael Lindvall, Manoel Mendonca, Carolyn Seaman, Roseanne Tesoriero, and Marvin Zelkowitz. *Software Engineering Workshop*, NASA/Goddard Software Engineering Laboratory, Greenbelt, MD, November 2001.

"A Prototype Experience Management System for a Software Consulting Organization", Manoel Mendonca, Carolyn Seaman, Victor Basili, and Yong-Mi Kim. *Proceedings of the International Conference on Software Engineering and Knowledge Engineering (SEKE01),* Buenos Aires, Argentina, June 2001, pp. 29-36.

"Investigating and Improving a COTS-Based Software Development Process," M. Morisio, C.B. Seaman, A. T. Parra, V.R. Basili, S.E. Kraft, S.E. Condon. *Proceedings of the International Conference on Software Engineering*, Ireland, May 2000, pp. 32-41.

"An Experience Management System for a Software Consulting Organization," Carolyn Seaman, Manoel Mendonca, Victor Basili, and Yong-Mi Kim. *Software Engineering Workshop*, NASA/Goddard Software Engineering Laboratory, Greenbelt, MD, December 1999.

"The Package-Based Development Process in the Flight Dynamics Division", A. Parra, C. Seaman, V. Basili, S. Kraft, S. Condon, S. Burke, D. Yakimovich, presented at the *Software Engineering Workshop*, NASA/Goddard Space Flight Center, Greenbelt, MD, December 1997.

"An Empirical Study of Communication in Code Inspections", Carolyn B. Seaman and Victor R. Basili, in *Proceedings of the 1997 International Conference on Software Engineering*, Boston, MA, May 17-24, 1997.

"Communication Costs in Code and Design Reviews: An Empirical Study", C.B. Seaman, *Proceedings of CASCON '96* (CD-ROM), IBM Centre for Advanced Studies, Toronto, November 1996.

"Characterizing and Assessing a Large-Scale Software Maintenance Organization", L.C. Briand, W. Melo, C.B. Seaman, and V.R. Basili, *17th International Conference on Software Engineering*, Seattle, April 1995.

"Using the OPT Improvement Approach in the SQL/DS Development Environment", C.B. Seaman, *Proceedings of CASCON '94* (CD-ROM), IBM Centre for Advanced Studies, Toronto, October 1994.

"OPT: Organization and Process Together", C.B. Seaman, *Proceedings of CASCON '93*, IBM Centre for Advanced Studies, Toronto, October 1993.

"AAA: A Modeling Language for Software Production Environments", C.B. Seaman, *Proceedings of CASCON '92*, IBM Centre for Advanced Studies, Toronto, October 1992.

"Data Modeling: Order Out of Chaos", C.B. Seaman, *ACM Computer Science Conference*, Atlanta, February 1988.

Other Publications

"Technical Debt: A Research Roadmap Report on the Eighth Workshop on Managing Technical Debt (MTD 2016)". Clemente Izurieta, Ipek Ozkaya, Carolyn Seaman, and Will Snipes. *ACM SIGSOFT Software Engineering Notes*, 42(1):28-31, January 2017.

"Technical Debt: Beyond Definition to Understanding, Report on the Sixth International Workshop on Managing Technical Debt". Carolyn Seaman, Robert Nord, Philippe Kruchten, and Ipek Ozkaya. *ACM SIGSOFT Software Engineering Notes*, 40(2):32-4, March 2015.

Shull, F., Falessi, D., Carolyn, S., Diep, M., Layman, L. (2013). Technical Debt: Showing the Way for Better Transfer of Empirical Results. In J. Muench and K. Schmid (Ed.), *Perspectives on the Future of Software Engineering* (pp. 12). Berlin: Springer Verlag.

"Qualitative research in software engineering". Tore Dybå, Rafael Prikladnicki, Kari Rönkkö, Carolyn B. Seaman, and Jonathan Sillito. Special Issue introduction. *Empirical Software Engineering* 16(4): 425-429, 2011.

"Measuring and Monitoring Technical Debt". Seaman, C., and Guo, Yuepu. In *ADVANCES IN COMPUTERS* (Vol. 82, pp. 25–46). Elsevier. 2011.

"The potential role of ISERN in the promotion of qualitative research in software engineering," Carolyn Seaman. *Qualitative Research in Software Engineering Workshop*, Vancouver, Canada, May 2009.

"STC and Software Defect Proneness," Carolyn Seaman, A. Güneş Koru, and Sreedevi Sampath. *Workshop on Socio-Technical Congruence*, Vancouver, Canada, May 2009.

"An Empirical Characterization of Scientific Software Development Projects According to the Boehm and Turner Model: a Progress Report," Carlton A. Crabtree, A. Güneş Koru, Carolyn Seaman, and Hakan Erdogmus. Workshop on *Software Engineering for Computational Science and Engineering (SECSE 09)*, Vancouver, Canada, May 2009.

"Discovering Determinants of High Volatility Software," Carolyn Seaman, A. Güneş Koru, and Sreedevi Sampath. Workshop on *Cooperative and Human Aspects of Software Engineering (CHASE 09),* Vancouver, Canada, May 2009.

"Informing Design of a Search Tool for Bioinformatics," Medha Umarji and Carolyn Seaman. *First International Workshop on Software Engineering for Computational Science and Engineering (SECSE),* Leipzig, Germany, May 2008.

"Teaching Software Engineering to End Users," Medha Umarji, Mark Pohl, Carolyn Seaman, , A. Güneş Koru, and Hongfang Liu. *Fourth Workshop on End-User Software Engineering (WEUSE IV),* Leipzig, Germany, May 2008.

"Understanding Documentation Value in Software Maintenance," Sumita Das, Wayne G. Lutters, and Carolyn B. Seaman. UMBC Review, pp. 174-189, April 2008.

Review of *Software Maintenance: Concepts and Practice*, by Penny Grubb and Armstrong Takang, reviewed by Carolyn Seaman. *Journal of Software Maintenance and Evolution: Research and Practice*, [in press], 2008.

"Inspecting the History of Inspections: An Example of Evidence-Based Technology Diffusion", Forrest Shull and Carolyn Seaman. *IEEE Software* (invited column), 25(1):88-90, January/February 2008.

"Chapter 2: Qualitative Methods", Carolyn Seaman. In *Guide to Advanced Empirical Software Engineering*, Forrest Shull, Janice Singer, and Dag I.K. Sjoberg, eds. Springer 2008.

Review of *Managing Corporate Information Systems Evolution and Maintenance*, Edited by Khaled M. Khan and Yan Zhang, reviewed by Carolyn Seaman. *Journal of Software Maintenance and Evolution: Research and Practice*, 18:307-309, 2006.

"Software Maintenance and Support: Identifying Routine Work Artifacts as Boundary Objects Across Time", Wayne G. Lutters and Carolyn Seaman. Workshop: Identifying Gaps between HCI, Software

Engineering and Design, and Boundary Objects to Bridge Them, *ACM Conference on Human Factors in Computing Systems (CHI)*, 2004. [IFIP 7.2 hosted @ www.se-hci.org/bridging/chi2004/]

Review of *Advances in Software Maintenance Management: Technologies and Solutions*, edited by Macario Polo, Mario Piattini, and Francisco Ruiz, reviewed by Carolyn Seaman. *Journal of Software Maintenance: Research and Practice*, 15(5):375-377, September/October 2003.

"Lessons-Learned Repository for COTS-Based SW Development", Victor Basili, Mikael Lindvall, Ioana Rus, Carolyn Seaman, and Barry Boehm. *Software Technology Newsletter*, 5(3), September 2002, available at http://www.dacs.dtic.mil/awareness/newsletters/stn5-3/.

"A Web Repository of Lessons Learned from COTS-based Software Development", Ioana Rus, Carolyn Seaman, Mikael Lindvall, Victor Basili, and Barry Boehm. *Crosstalk*, 15(9):25, September 2002.

Review of *Software Maintenance: Concepts and Practice* by Armstrong A. Takang and Penny A. Grubb, reviewed by Carolyn Seaman. *Journal of Software Maintenance: Research and Practice*, 13(1):143-7, January 2001.

Review of *Practical Software Maintenance* by Thomas M. Pigoski, reviewed by Carolyn B. Seaman. *Journal of Software Maintenance: Research and Practice*, 12(3):249-253, May 2000.

Professional Activities

Review papers regularly *for IEEE Transactions on Software Engineering, IEEE Software, ACM Transactions on Software Engineering and Methodology, Empirical Software Engineering Journal, Journal of Systems and Software*, and others.

Serve regularly on proposal review panels for the National Science Foundation.

Serve regularly on the program committees of the *TechDebt*, *ICSE*, *ESEM, Profes, ICSM, Agile, XP, EASE* conferences.

Serve as the Chair of the Steering Committee of the International Conference on Technical Debt, starting May 2023.

Organizer for the International Doctoral Symposium on Empirical Software Engineering (IDoESE) 2023

Coach/mentor for CSGrad4US, Fall 2023

EASE 2023 Workshops and Tutorials Co-Chair

Served as an Associate Editor of the *IEEE Transactions on Software Engineering*, 2017-2022.

Serve on the Editorial Board of the *Information and Software Technology Journal*, published by Elsevier, starting 2012.

Organized the Dagstuhl Seminar on Technical Debt Research, April 2016.

Chair of the Steering Committee of the TechDebt conference.

Serve on the Steering Committee of the International Software Engineering Research Network.

Served as Program co-Chair of *the International Conference on Technical Debt (TechDebt)*, Madrid, Spain (virtual), 2021

Served as Student Volunteers co-Chair of the *International Conference on Software Engineering (ICSE)*, Madrid, Spain (virtual), 2021.

Served as General Chair of the *International Workshop on Managing Technical Debt (MTD)*, Victoria, Canada, 2014.

Served as co-General Chair of the *International Symposium on Empirical Software Engineering and Measurement (ESEM)*, Maryland, USA, 2013.

Invited to give a keynote talk at the *Empirical Software Engineering Latin America Conference*, Montevideo, Uruguay, April 2013.

Invited to give a keynote talk at the *Brazilian Software Quality Symposium*, Salvador, Brazil, July 2013.

Served as Associate Editor of the *Information and Software Technology Journal*, published by Elsevier,

2008-2012.

Served as guest editor of a special issue of the *Journal of Empirical Software Engineering* on Qualitative Research in Software Engineering, published 2011.

Invited to give a keynote talk at the *Empirical Software Engineering Latin America Conference*, São Carlos, Brazil, November 2009.

Organized the *International Doctoral Symposium on Empirical Software Engineering*, Lake Buena Vista, USA, October 2009.

Served as Supervisor for the *International Doctoral Symposium on Empirical Software Engineering*, Kaiserslautern, Germany, October 2008.

Invited participant in the Dagstuhl Seminars on Empirical Software Engineering, Dagstuhl, Germany, June 2006 and March 2010.

Served as program co-chair for the *International Symposium on Software Metrics*, Italy, September 2005.

Invited to be a panelist on "Empirical Validation – What, Why, When, and How" at the *International Conference on Software Engineering*, Portland, Oregon, May 2003.

Served as guest editor of a special issue of the *Journal of Software Maintenance and Evolution* on "Process Diversity", published December 2002.

Served on the program committee for the *Metrics 2002* conference in Ottawa, Canada, June 2002.

Invited to present on "The Validity of Qualitative Data" at the annual meeting of the *International Software Engineering Network (ISERN)*, Glasgow, Scotland, August 2001.

Invited to chair a session on "Qualitative Research Methods" at the annual meeting of the *International Software Engineering Network (ISERN)*, Honolulu, Hawaii, October 2000.

Invited to present on "Qualitative Methods in Empirical Studies of Software Engineering" at Linkoping University, Sweden, June 2000.

Served on the program committee for the *Beg, Borrow or Steal: Using Multidisciplinary Approaches in Empirical Software Engineering Research* workshop in Limerick, Ireland, June 2000.

Invited to present on "Qualitative Methods in Empirical Studies of Software Engineering" at the *Workshop on Empirical Studies of Software Engineering*, National Research Council Canada, March 1999.

Wrote the solutions manual for *Software Engineering: Theory and Practice* by Shari Lawrence Pfleeger.

Served on the Program Committee for the *Software Engineering Workshop*, NASA/Goddard Space Flight Center, Greenbelt, MD, December 1997.

Presented on "Qualitative Research Methods Borrowed from the Social Sciences" at the annual meeting of the *International Software Engineering Network (ISERN)*, Bari, Italy, October 1997.

Served on the Program Committee for and participated in the *International Workshop on Empirical Studies of Software Maintenance (WESS)*, Bari, Italy, October 1997.

Presented on "Integrating Realistic Metrics and Models" at the Workshop on *Process Modeling and Empirical Studies of Software Evolution (PMESSE)*, Boston, May 1997.

Participated in the *International Workshop on Empirical Studies of Software Maintenance (WESS)*, Monterey, CA, September 1996.

Participated in the annual meeting of the *International Software Engineering Network (ISERN)*, College Park, MD, October 1995.

Participated in the *Int'l Workshop on Software Engineering Data (IWSED)*, College Park, MD, October 1995.

Participated in the *International Software Process Workshop*, Airlie, VA, October 1994.

Participated in the *AAAI Spring Symposium Series: Computational Organizational Design*, Palo Alto, March 1994.

CURRICULUM VITAE

Dr. Jennifer Carter

EDUCATION

D.M. 2009 UMGC, Management
M.S. 1992 Catholic University, Engineering
B.S.E.E. 1984 UMCP, Electrical Engineering

Experience in Higher Education

8/19 - present: University of Maryland Baltimore County. Professor of Practice for Information Systems. Instructor for courses in computer networks, systems analysis and advanced computer programming. Assistant Undergraduate Program Director managing the intern program and supporting the IS department in multiple areas of service.

6/17 – Howard Community College. Adjunct Professor for Computer Science. Teaching Advanced Computer Science classes, focused on C++ programming.

1/16 – 8/19: University of Maryland University College. Adjunct Professor for Information Systems Management. Professor for Information Systems Management, courses include; Foundations of Information Systems Management; Information Systems in Organizations; Telecommunications in Information Systems; and Concepts and Applications of Information Systems.

Accomplishments

Service: Multiple Department and UMBC committees, hiring actions, course leadership, advising for ~180 students, orientation advising, Assistant Undergraduate Program Director duties, faculty panels, external service supporting UMD Info Challenge and AP CSA National Advisory Board for Computer Science.

Creative: Completely updated the IS310 gateway course with new textbooks, course materials and hands-on microprocessor based projects for improved student engagement and success.

Research: Faculty participant supporting the PeerSist research activity to help transfer student successfully complete IS gateway courses.

Experience in Other than Higher Education

3/12 – 9/15 (retired from government service): DISA Component Acquisition Executive. Fort Meade, Maryland. Responsible for management oversight of more than $4B of IT programs and services. Ensured effective and agile delivery of mobile solutions, cloud computing, cybersecurity, and enterprise services with shorter delivery cycles, higher quality of service, agile technology insertion, and cost efficiencies. Established plans for next generation DoD enterprise collaboration services (e-mail, chat, voice, video, messaging, etc.). Senior champion for the program management workforce of over 800, planned and implemented training programs, mentoring, taught program management training sessions, worked with DAU on course development, led management improvements across Defense to include conference presentations. Presented at multiple conferences and media events, to include multiple engagements as keynote speaker.

6/09 – 3/12: Navy ERP Program Manager. Navy, Annapolis, Maryland. Delivered one of the few highly successful, large-scale, DoD Enterprise Resource Planning (ERP) system ($2.4B) providing modern integrated business capabilities to over 60,000 users. Maintained world-class benchmarks for business system operations (system availability of 99.9% and response times<1 second) and high quality 24 x 7 user support. Managed the design, development, delivery and sustainment of a SAP-based system to transform the Navy's business processes. Delivery included user training programs, course materials, knowledge based user tools, and web based training. Managed a $200M annual budget, over 600 personnel. Engaged with the highest levels of Navy leadership to develop a business intelligence capability. Enabled retirement of legacy systems, improved auditability, business process efficiencies, resource and asset visibility. Replaced a decades old system with a modern integrated Single Supply Solution resulting in inventory savings and improved readiness. Transformed Navy business operations on a scale of scope and complexity comparable to major global industry leaders. Guest lecturer at the Defense Acquisition University on Information Technology Management.

5/08 – 6/09: Deputy Director for Resource Management and Investment, National Counterproliferation Center (NCPC). Strengthened management of mission resources across the IC, to include producing the first detailed portfolio summary and long-term investment plan. Modernized NCPC's business practices including establishing an Investment Review Board and evaluation framework to optimize investment decisions. Advanced mission priorities with successful management of the NCPC operating budget and innovation fund. Instrumental in obtaining resources to close critical mission gaps. Established NCPC as mission leader IC resource decisions and an active member of the DNI Programming and Planning Committees. Conducted a community wide study of mission analytic skills, coordinated training programs to address gaps, and established an on-line community of practice.

2/07 – 5/08: Chief of Integration for Resource Management, Director of National Intelligence. Responsible for assessing, justifying, and integrating the overall resource requirements of the National Intelligence Program and developing budget products on behalf of the DNI to the Administration and Congress. Established new processes and led the IC community efforts to design, develop and deliver significantly improved Congressional Budget

2/05 - 2/07: Special Issue Manager for Corporate Business Services and IT Acquisition, National Security Agency, Fort Meade, Maryland. Developed a business process evaluation framework, business portfolio baseline, and outcome oriented balanced scorecard. Leveraged those tools and the Business Enterprise Architecture to establish improvements to Agency business processes. Led the Agency acquisition workforce, Center of Excellence, and improved acquisition management. Streamlined Information Assurance Certification and Accreditation processes and established governance for computing hardware to optimize power, space and cooling.

4/03 – 1/05: Deputy Senior Acquisition Executive for the Intelligence Community. Improved the effectiveness of program and technology management across the IC. Chaired a joint team improving IC/DoD alignment; established and led an IC-wide council to institutionalize earned value management; led cross-agency program integration and analysis to support budget decisions; conducted IC-wide process and policy assessments. Evaluated all major acquisition programs identifying and resolving issues in support of the Director of Central/National Intelligence.

6/01 – 4/03: Chief of Signals Intelligence (SIGINT) Systems Engineering, National Security Agency. Responsible for optimizing the worldwide network of SIGINT collection and analysis systems and institutionalizing an effective systems engineering discipline. Led the SIGINT community in establishing the first comprehensive architecture, capability gap analysis, technology assessment, and integrated capabilities roadmap. Institutionalized systems engineering training, practices and processes across the Agency to include architecture governance, risk, configuration management, requirements management, deployment readiness and technology insertion.

2/98 – 6/01: Program Area Manager for Electromagnetics and Special Programs, Office of Naval Intelligence, Suitland, Maryland. Optimized a portfolio of IT programs for the design and delivery of advanced Electromagnetic Intercept capabilities and multi-function sensor systems. Successfully acquired and deployed numerous advanced intelligence collection systems closing critical mission gaps by addressing new signal types/frequencies. Developed and delivered training modules and courses to train analysts on the collection and analysis of new signal types. Led cutting edge antenna and signal processing research to address future threats. Managed successful transition and modernization of a multi-disciplinary, international program of high Congressional interest to continue critical intelligence capabilities within significant resource constraints.

9/93 – 2/98: Project Manager, Johns Hopkins University Applied Physics Laboratory. Successfully designed and managed a groundbreaking demonstration of flight and payload control of a Predator Unmanned Air Vehicle from a submarine. Achieved results from the concept stage through implementation and testing in less than a year. Led research efforts for multiple projects including; precision targeting, fault tolerant communications, and multiple research projects.

3/83-3/93: Lead Engineer, Naval Surface Warfare Center. Developed software systems for Anti-Submarine Warfare to include engagement control systems and tactical picture software. Led research and development for fault tolerant Autonomous Underwater Vehicle Controller. Designed and implemented automated telemetry test system. Conducted research on advanced underwater sensors and mine recognition software.

Service: The following activities have been part of my service commitment to UMBC and the Department.

- Valedictorian Selection Committee: 2020, 2021
- Multiple hiring/search committees: 2020-2022
- Vision committee: 2021-2022
- CWIT scholarship review: 2019, 2020
- orientation advising: 2019- present
- Undergraduate Committee: 2019 - present
- Postdoc fellowship selection committee: 2021
- CMSC201 to IS247 working group: Spring 2021

CURRICULUM VITAE

CESAR AUGUSTO CASAS

EDUCATION

Graduate Certificate	2024	Harvard University Bok Center, Higher Education Teaching
Ph.D.	2002	Nova Southeastern University, Information Systems
M.B.A.	1992	University of Connecticut, International Business
B.S.	1983	Pontificia Universidad Javeriana, Electrical Engineering

Experience in Higher Education

2020-Present University of Maryland Baltimore County, Lecturer, Information Systems
Teaching instructor in online master's in information systems program. Duties include course development for online delivery, student advising, student retention, and service in academic committees.

2017-2020 University of Connecticut, Associate Professor in Residence, Computer Science
Teaching instructor in Computer Science program. Developed and taught first ever online course in the School of Engineering. Online course was developed in compliance with the Quality Matters (QM) rubric. Taught courses in computer programming, discrete systems, and data structures. Additional activities included student advising and promotion of the CS major in community events.

2014-2017 Berkeley College, Professor, Information Technology Management
Faculty leader of the Information Technology Management major. Responsible for management of the ITM program across campuses in New York and New jersey. Updated ITM curriculum for approval by education departments of New York and New Jersey. Courses taught included Information Technology Management, Systems Analysis and Design, Network Security, Database Management Systems, and Capstone Project.

2002-2014 St Thomas Aquinas College, Associate Professor (Tenured), Computer Science
Professor in Computer Science major. Duties included teaching, student advising, service in academic committees, and research. Courses taught included Software Engineering, Web Programming, Systems Analysis and Design, and Capstone Project. Research focused on applications of artificial intelligence in Investment Management. Received tenure in 2010.

2017-2020 Columbia University, New York University, Adjunct Faculty, Information Systems

2003-2020 Various Online Universities, Online Adjunct faculty
Taught multiple online courses, mostly graduate level, at the following universities: University of Phoenix, DeVry University, Walden University, College for Financial Planning, Kaplan University, and Excelsior College.

Experience in Other than Higher Education

2008-2020, iFIT^2 LTD, Ridgefield, CT, Director
Financial planner and income tax return preparer.

2000-2008, Financial Planning University LLC, Katonah, NY, Director
Worked as an independent financial planner affiliated to the Guardian Insurance Company and MetLife, offering financial planning services to individuals and small businesses. Clients included entrepreneurs in high tech industries.

1998-1999, PaineWebber, Stamford, CT, Financial Advisor
Switched career focus becoming an investment executive with major investment bank. Obtained FINRA series 7 and other security licenses. Advised institutional clients and individual investors on the management of their investing assets.

1994-1997, Bristol Babcock, Watertown, CT, Director Asia/Pacific
1992-1994, Bristol Babcock, Watertown, CT, Director Latin America
Responsible for project development in Latin America (1991-1995) and Asia/Pacific (1995-1997). Worked on the development of supervisory control and data acquisition (SCADA) systems for major oil and gas companies such as Enron (Argentina, Colombia, and Bolivia), Ecopetrol (Colombia), Pemex (Mexico), Saudi Aramco, Petronas (Malaysia), Pertamina (Indonesia), PTT (Thailand). Participated in additional projects outside the gas and oil industry in South Korea, Taiwan, Japan, Chile, Puerto Rico, and Peru.

1990-1992 VBand Corporation, Elmsford, NY, Sales Engineer
Made technical presentations to potential clients and helped them design voice communication systems. Worked with AT&T in the development of an Enhanced 911 response system and participated in the implementation of one of these systems in El paso, TX.

1987-1990 Executone Information Systems, East Hartford, CT Service Engineer
Led the installation of multiple voice communication systems for small, medium, and large businesses, including the design and installation of the voice communication system for thr Maritime Museum in Norwalk, CT.

1985-1986 Ecopetrol, Bogota Colombia, Telecommunications Department Manager
1986-1985 Ecopetrol, Bogota Colombia, Telecommunications Engineer
Designed, developed and implemented telecommunication systems to support the operations of Colombia's national oil company ECOPETROL. In 1986 promoted to manager of the telecommunications department of the Caño Limon-Coveñas Pipeline.

Honors Received

Fulbright Specialist. Awarded in 2022 to travel to Colombia in support of a research project for the Regional Corporate University of the Caribbean.

Research Support and/or Fellowships

- 2011 ($4,000) SC11 International Conference for High Performance Computing, Networking, Storage and Analysis. Broader Engagement Travel grant awarded to attend and participate with one student at international conference in Seattle, WA in November 2011.
- 2011 ($5,000) LittleFe mini cluster. Awarded a Six-Blade, 12-core mini cluster to teach parallel programming and develop parallel programming curriculum at St Thomas Aquinas College. The grant was funded by Intel and the National Computational Science Institute.
- 2011 ($1,000). Blue Waters Internship Grant awarded by the Blue Waters project at the University of Illinois and by Shodor to create an internship position for an undergraduate student at St Thomas Aquinas College during the 2011-2012 academic year. The intern is working on the development of a computer cluster to do simulations in the domains of biology, chemistry and physics and to promote the development of similar computer clusters in local high schools.
- 2010 ($4,000) SC10 International Conference for High Performance Computing, Networking, Storage and Analysis. Broader Engagement Travel grant awarded to attend and participate with three students at international conference in New Orleans, LA in November 2010.
- 2009 ($4,000) SC09 International Conference for High Performance Computing, Networking, Storage and Analysis. Broader Engagement Travel grant awarded to attend and participate with three students at international conference in Portland, Oregon in November 2009.
- 2008 ($4,000) SC08 International Conference for High Performance Computing, Networking, Storage and Analysis. Broader Engagement Travel grant awarded to attend and participate with three students at international conference in Austin, Texas in November 2008.
- 2007 ($1,500) SC07 International Conference for High Performance Computing, Networking, Storage and Analysis. Broader Engagement Travel grant awarded to attend and participate at international conference in Reno, NV in November 2007.
- 2006 ($2,000) St Thomas Aquinas College Faculty Development Grant: (PI) Awarded to conduct research project on college computerized project collaboration system. Summer 2006.

Ph.D. Students

Note: This is just a sample of dissertation committees I chaired in the past.

- *Leadership Influence on End Users' Acceptance of Limited-Scope Finance-Related Information System and Information Technology*. Student: Brandon L. Wells, University of Phoenix, School of Advanced Studies.

- *Managing Virtual Teams within Financial Information Technology Operations: A Qualitative Delphi Study*. Student: David Whitfield Walker, University of Phoenix, School of Advanced Studies.

- *A Delphi Study: The Role of Information Technology during Transformations of Multinational Companies*. Student: Ahmed Al-Saeed, University of Phoenix, School of Advanced Studies.

- *Data Overload Impact on Project Management: How Knowledge Management Systems Can Improve Federal Agencies Effectiveness*. Student: Jacinto Rodriguez, University of Phoenix, School of Advanced Studies.

- *Federal Reserve Effects on U.S. Business Cycle Busts*. Student: Jason J. Hubler, University of Phoenix, School of Advanced Studies.

Master's Students

NA

Undergraduate Students

NA

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Peer-Reviewed Works

Journal Articles

Casas, A. (2018) ***Information Technology Update for the Financial Planning Profession***. Journal of Financial Planning. 31(3)

Pabst, B; Casas, A; Ravi, C. (2016) ***Empirical Lessons from Failure of ERP Systems in Small and Medium Businesses*****.** Southern Business and Economic Journal. 39 (1)

Casas, A. (2008) ***Informatics: Proposing a New Information Technology Discipline for Financial Planning.*** Journal of Financial Planning. 21(4). 62-68.

Academic Conference Presentations

Casas, A. (2016) ***Why Financial Planning Informatics***? Proceedings of the 2016 Annual Meeting of the Academy for Financial Services. Las Vegas, NV, October 20-22, 2016.

Casas, A. (2014) ***Financial Planner's Participation in US Tax Court Decisions***. Proceedings of the 2014 Annual Meeting of the Academy for Financial Services. Nashville, TN, October 11-13, 2014.

Casas, A. (2012) ***Parallelization of Artificial Neural Network Training Algorithms: A Financial Forecasting Application.*** Proceedings of the 2012 IEEE Conference on Computational Intelligence and Financial Engineering (CiFER). New York, NY, March 29-30, 2012.

Casas, A. (2010) ***Factors determining attitudes toward the use of technology to plan for retirement: an empirical analysis***. Proceedings of the 2010 Meeting of Academy for Financial Services. Denver, CO, October 9-10, 2010.

Casas, A. (2008) ***High Performance Artificial Neural Networks: A Computational Finance Application.*** 2008 International Conference on High Performance Computing, Networking, Storage and Analysis - Poster Presentation. Austin, TX, November 15021, 2008

Casas, A. (2007) ***Online Collaborative Notes-Taking System.*** eScience Workshop – Poster Presentation. University of North Carolina at Chapel Hill, September 21-23, 2007.

Casas, A. (2005). ***Applications of artificial neural networks to reduce investment portfolio volatility.*** Proceedings of the IASTED International Conference on Artificial Intelligence. Lynbrook, Austria, February 12-16, 2005.

Casas, A. (2002). ***Tactical asset allocation: An artificial neural network-based model.*** Proceedings of the IEEE/INNS International Joint Conference on Neural Networks IJCNN'01. Washington D.C., July 2001.

Casas, A. (2001). ***Tactical asset allocation with artificial neural networks***. Proceedings of the 2001 Conference on Computational Intelligence: Methods and Applications. Bangor, U.K., June 2001.

Presentations

Presentations at Conferences

Casas, A. (2021) *The Online Discussion Forum: The 21st Century Classroom.* Online Learning Consortium Accelerate Conference. October 2020. Gaylord Convention Center, Maryland.

Creative Achievements
NA

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service in Academic Committees:

University of Maryland Baltimore County
2023-2024
- Online MSIS committee
- Graduate Professional Programs Committee
- Graduate IS Admissions Committee
- Professional Development Award for non-Tenure Track faculty committee

2022-2023
- Online MSIS committee
- Professional Development Award Committee Latinx and Hispanic Faculty Association LFHA
- USM MACC Cyber/CompSci/IT Affinity Group

2020-2021
- Department of Information Systems Graduate Committee
- Faculty Search Committee

Berkeley College
2014-2017
- Curriculum Committee
- Middle States Accreditation Committee

St Thomas Aquinas College
2002-2014
- Academic Computing Committee
- Program Review Committee
- Middle States Accreditation Committee
- Institutional Assessment Committee
- Curriculum Committee

Service Outside Academic Institutions

- SC'11 Broader Engagement Committee. Serve as coordinator for all accommodation needs of participants at the 2011 Supercomputing conference in Seattle attending under a broader engagement grant.

- Panel Reviewer. Served as proposal reviewer for the National Science Foundation in grant award process.

- Senior Reviewer. Serving the College Board through the Educational Policy Improvement Center at the University of Oregon as senior reviewer in the AP Computer Science courses' audit process.

- AP Exam Reader. Served the Educational Testing Service (ETS) in the reading and grading of Computer Science A and AB Advanced Placement exams.

- Book Reviewer. Conducted book reviews in the fields of computer and information science prior to publication for Prentice Hall, McGraw-Hill and Cengage

- New York Academy of Sciences Technology Fair Judge. Served annually as a judge at the New York Science and Technology fair from 1999 to 2014.

CURRICULUM VITAE

MD OSMAN GANI

EDUCATION

Ph.D.	2017	Marquette University, WI, Computational Sciences
M.Sc.	2013	Marquette University, WI, Computational Sciences
B.Sc.	2009	Military Institute of Science and Technology, Bangladesh, Computer Science and Engineering

Experience in Higher Education

2020 –	University of Maryland, Baltimore County, MD, Assistant Professor, Information Systems
2020 –	Causal Artificial Intelligence Lab, Director, UMBC
2021 –	Rehabilitation Research Design & Disability (R2D2) Center, University of Wisconsin - Milwaukee, WI, Faculty Affiliate, AI and Rehabilitation
2018 –	Regenstrief Center for Healthcare Engineering, Purdue University, IN, Faculty Affiliate, AI and Healthcare
2017 – 2020	Miami University, OH, Visiting Assistant Professor, Computer Science and Software Engineering
2011 – 2017	Marquette University, WI, Instructor and Graduate Assistant, Mathematics, Statistics and Computer Science
2009 – 2011	Military Institute of Science and Technology (MIST), Bangladesh, Lecturer, Computer Science and Engineering

Experience in Other than Higher Education

Honors Received

2016	NSF Travel Grant, ACM HotMobile, St. Augustine, FL
2015	Best Research Poster, Forward Thinking Poster Session, Marquette University, WI
2015	Summer Research Fellowship, Marquette University, WI
2013	Summer Research Fellowship, Marquette University, WI
2012	Summer Research Fellowship, Marquette University, WI
2011	National Digital Innovation Award – Runner Up, Bangladesh Government
2011	Champion, IT Innovation Search Programme, Bangladesh Association of Software and Information Services
2008	7th Place, International Collegiate Programming Competition, Asia Regional, Dhaka
2008	10th Place, National Collegiate Programming Competition, Dhaka, Bangladesh
2008	1st Place, MIST Programming Competition, Dhaka, Bangladesh

Research Support and/or Fellowships

2024 – 2029	$3,394,663, The Development, Implementation, and Evaluation of a Social Engagement Support System, National Institutes of Health, Co-Investigator.
2022 – 2026	$13,000,000, HDR Institute: HARP- Harnessing Data and Model Revolution in the Polar Regions, National Science Foundation (NSF), Senior Personnel.
2022 – 2023	$25,000, A Causal Inference Framework to Translate COVID-19 Observational Data to New Knowledge, Strategic Awards for Research Transitions (START), UMBC, PI.
2021 – 2024	$600,000, Accessible Routing Using Smart Crowd-Sensed Surface Classification for Wheelchair Users, National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), UMBC-PI.
2018	$5400, Summer Research Fund for Undergraduate Students, Miami University, PI

Ph.D. Students

Muhammad Hasan Ferdous	2021 – Present	Chair
Uzma Hasan	2021 – Present	Chair
Emam Hossain	2022 – Present	Chair
Sancharee Hom Chowdhury	2024 – Present	Member
Maloy Kumar Devnath	2024 – Present	Member
Tashnim Chowdhury	2022 – 2024	Member
Avijoy Chakma	2022 – 2024	Member
Debvrat Varshney	2022 – 2024	Member
Argho Sarkar	2022 – 2024	Member
Sahara Ali	2022 – 2024	Member
Munshi Mahbubur Rahman	2022 – Present	Member
Masud Ahmed	2022 – 2024	Member
Catherine Ordun	2022 – 2023	Member
Rashidul Islam	2021 – 2022	Member

Master's Students

ASM Mobarak Hossain	2024 – Present	Chair
Md Fourkanul Islam	2022 – Present	Chair
Rohan Salvi	2022 – Present	Member
Valeria Mokrenko	08/14/2020	Member, Miami University
Shrawani Silwal	05/16/2020	Member, Miami University

Undergraduate Students

Kenny Chen	2021 – 2022	Undergraduate Research, Advisor
Nancy Nguyen	2021 – 2022	Undergraduate Research, Advisor
John Hata	2018 – 2019	Senior Design Project, Advisor, Miami University
Nick Wayne	2018 – 2019	Senior Design Project, Advisor, Miami University
Nick Jarvis	2018 – 2019	Senior Design Project, Advisor, Miami University
Austin Gee	2018 – 2019	Senior Design Project, Advisor, Miami University
Yiping He	2018 – 2019	Senior Design Project, Advisor, Miami University
Xiting Liang	2018 – 2019	Senior Design Project, Advisor, Miami University
Amit Kumar Saha	2011	Undergraduate Thesis, Advisor, MIST
Taskina Fayezeen	2011	Undergraduate Thesis, Advisor, MIST
Abdullah Al-Mamun	2011	Undergraduate Thesis, Advisor, MIST
Nafia Malik	2010	Undergraduate Thesis, Advisor, MIST
Sarah Ashraf	2010	Undergraduate Thesis, Advisor, MIST

Bushra Hossain	2010	Undergraduate Thesis, Advisor, MIST

High School Students

Zafira Wasma	2024 – 2024	Research, Advisor, Boiling Springs High School, SC
Aileen Sharma	2023 – 2023	Research, Advisor, Poolesville High School, MD
Nabiha Sharif	2023 – 2023	Research, Advisor, Taft High School, CA
Alexander Dickens	2022 – 2022	Research, Advisor, Ingenuity Project, MD

TEACHING

Courses Taught

- Fall 2020
  1. IS/HCC 636 – Structured Systems Analysis and Design
- Spring 2021
  1. IS 698/800 – Causal Inference in AI and ML
- Fall 2021
  1. IS 428 – Data Mining
- Spring 2022
  1. IS 733 – Data Mining
- Fall 2022
  1. IS 428 – Data Mining
  2. IS 733 – Data Mining
- Spring 2023
  1. IS 790 – Causal Artificial Intelligence
- Fall 2023
  1. IS 709/809 – Computational Methods for IS Research
- Spring 2024
  1. IS 790 – Causal Artificial Intelligence
  2. IS 733 – Data Mining
- Fall 2024
  1. No courses taught
- Spring 2025
  1. IS 410/610 – Introduction to Data Design

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Student advisees are underlined

Peer-Reviewed Works

- Journal Articles
  1. Devon Dunmire, Aneesh Subramanian, Emam Hossain, Md Osman Gani, Alison Banwell, Hammad Younas, Brendan M Myers, "Greenland Ice Sheet wide supraglacial lake evolution and dynamics: insights from the 2018 and 2019 melt seasons," Earth and Space Science, Accepted for publication, December, 2024.
  2. Uzma Hasan, Emam Hossain, Md Osman Gani, "A Survey on Causal Discovery Methods for IID and Time Series Data," Transactions on Machine Learning Research (TMLR), Sept 2023, https://openreview.net/pdf?id=YdMrdhGx9y.

3. Md Osman Gani, Shravan Kethireddy, Riddhiman Adib, Uzma Hasan, Paul Griffin, and Mohammad Adibuzzaman. "Structural causal model with expert augmented knowledge to estimate the effect of oxygen therapy on mortality in the ICU." Artificial Intelligence in Medicine 137 (2023): 102493.
4. Haoxiang Yu, Vaskar Raychoudhury, Snehanshu Saha, Janick Edinger, Roger O. Smith and Md Osman Gani, "Automated Surface Classification System using Vibration Patterns - A Case Study with Wheelchairs," in IEEE Transactions on Artificial Intelligence, 2022, Pages 1-11, doi: 10.1109/TAI.2022.3190828.
5. Md Osman Gani, Taskina Fayezeen, Richard J. Povinelli, Roger O. Smith, Muhammad Arif, Ahmed J. Kattan, Sheikh Iqbal Ahamed, "A light weight smartphone based human activity recognition system with high accuracy", Journal of Network and Computer Applications, Elsevier, Volume 141, Pages 59-72, September 1, 2019.
6. N. Johnson, O. Bree, E. Lalley, K. Rettler, Md Osman Gani, S. Ahamed, "Effect of a Social Script iPad Application for Children with Autism Going to Imaging", Journal of Pediatric Nursing, Volume 29, Issue 6, Pages 651-659, 2014.
7. Md Osman Gani, Hasan Sarwar, Chowdhury Mofizur Rahman "Prediction of state of wireless network using Markov and Hidden Markov Model", Journal of Networks, Volume 4, Issue 10, Pages 976-984, 2009.

- Chapters in Books
  1. Williams Drew, Md Osman Gani, Ivor D, AKM Jahangir Alam Majumder, Chandana P Tamma, Mong-Te Wang, Chih-Hung Chang, Sheikh Iqbal Ahamed, Cheng-Chung Chu. "Challenges in Developing Applications for Aging Populations", Optimizing Assistive Technologies for Aging Populations, Pages 1-21, 2015, IGI Global.
- Conference Proceedings
  1. Emam Hossain, Md Osman Gani, Devon Dunmire, Aneesh Subramanian, Hammad Younas, "Time Series Classification of Supraglacial Lakes Evolution over Greenland Ice Sheet", 23rd International Conference on Machine Learning and Applications, 2024.
  2. Rochishnu Banerjee, Ethan Han, Longze Li, Haoxiang Yu, Md Osman Gani, Vaskar Raychoudhury, Roger O Smith, "FedAccess: Federated Learning-Based Built Surface Recognition for Wheelchair Routing," IEEE 48th Annual Computers, Software, and Applications Conference (COMPSAC), 2024
  3. Sahara Ali, Omar Faruque, Yiyi Huang, Md Osman Gani, Aneesh Subramanian, Nicole-Jeanne Schlegel, Jianwu Wang, "Quantifying causes of arctic amplification via deep learning based time-series causal inference," 24th International Conference on Machine Learning and Applications (ICMLA), 2025.
  4. Muhammad Hasan Ferdous, Uzma Hasan, Md Osman Gani, "CDANs: Temporal Causal Discovery from Autocorrelated and Non-Stationary Time Series Data," Machine Learning for Healthcare Conference, Proceedings of Machine Learning Research, Volume 219, Pages 186-207, 2023.
  5. Uzma Hasan, and Md Osman Gani, "KCRL: A Prior Knowledge based Causal Discovery Framework with Reinforcement Learning.", Machine Learning for Healthcare Conference, Proceedings of Machine Learning Research, Volume 182, Pages 1-24, 2022.
  6. Rochishnu Banerjee, Md Fourkanul Islam, Shaswati Saha, Vaskar Raychoudhury, and Md Osman Gani. "Surface Recognition from Wheelchair-induced Noisy Vibration Data: A Tale of Many Cities." In 2022 18th International Conference on Mobility, Sensing and Networking (MSN), pp. 619-626. IEEE Computer Society, 2022.
  7. Shaswati Saha, Lauren A. Selingo, Hanna M. Noyce, Emily M. Olejniczak, Roger O. Smith, Vaskar Raychoudhury, and Md Osman Gani, MyPath: Accessible Routing for Wheelchair Users, RESNA Conference, 2022.
  8. Hanna M. Noyce, Emily M. Olejniczak, Lauren A. Selingo, Roger O. Smith, Vaskar Raychoudhury, Shaswati Saha, and Md Osman Gani, Community Accessibility for Wheelchair Users as Seen Through the Lens of I-Corps Interviews, RESNA Conference, 2022.
  9. Valeria Mokrenko, Haoxiang Yu, Vaskar Raychoudhury, Janick Edinger, Roger O. Smith and Md Osman Gani, "A Transfer Learning Approach to Surface Detection for Accessible Routing for Wheelchair Users,"

2021 IEEE 45th Annual Computers, Software, and Applications Conference (COMPSAC), 2021, pp. 794-803, doi: 10.1109/COMPSAC51774.2021.00112.

10. Shrawani Silwal, Vaskar Raychoudhury, Snehanshu Saha, Md Osman Gani, "A Dynamic Taxi Ride Sharing System Using Particle Swarm Optimization", Proceedings of the IEEE 17th International Conference on Mobile Ad Hoc and Sensor Systems (MASS), Pages 112-120, December 10-13, 2020.
11. Marvi Bikak, Shravan Kethireddy, Md Osman Gani, Mohammad Adibuzzaman. Structural causal model with expert augmented knowledge to estimate the effect of oxygen therapy. CHEST, 158(4):A636, 2020.
12. Md Osman Gani, Vaskar Raychoudhury, Janick Edinger, Valeria Mokrenko, Zheng Cao, Ce Zhang, "Smart Surface Classification for Accessible Routing through Built Environment - A Crowd-sourced Approach", Proceedings of the ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, Pages 11-20, November 13, 2019.
13. Md Osman Gani, G M T Ahsan, Amit Kumar Saha, Sheikh Iqbal Ahamed, Roger O. Smith, "A Novel Framework to Recognize Complex Activity", Proceedings of the IEEE 41st Annual Computer Software and Applications Conference, Pages 948-956, July 2017.
14. Amit Kumar Saha, GMT Ahsan, Md Osman Gani, Sheikh Iqbal Ahamed, "Personalized Pain Study Platform using Evidence-based Continuous Learning Tool", Proceedings of the IEEE 41st Annual Computer Software and Applications Conference Workshops, Pages 490-495, July 2019.
15. Nicholas Jarvis, John Hata, Nicholas Wayne, Vaskar Raychoudhury, Md Osman Gani, "MiamiMapper: Crowd Analysis using Active and Passive Indoor Localization through Wi-Fi Probe Monitoring", Proceedings of the 15th ACM Symposium on QoS and Security for Wireless and Mobile Networks, Pages 1-10, November 2019.
16. Shrawani Shilwal, Vaskar Roychoudhury, Md Osman Gani, "A Survey of Taxi Ride Sharing System Architectures", Proceedings of the IEEE International Conference on Smart Computing (SMARTCOMP) Workshop, Pages 144-149, June 2019.
17. Manh Nguyen, Md Osman Gani, Vaskar Roychoudhury, "Yours Truly? Accessibility of Our Personal Data in the Connected World", Proceedings of the IEEE International Conference on Pervasive Computing and Communications Workshops, Pages 292-297, March 2019.
18. G M T Ahsan, Md Osman Gani, MD K Hasan, Sheikh I Ahamed, W Chu, Mohammad Adibuzzaman, Joshua Field, "A Novel Real-Time Non-Invasive Hemoglobin Level Detection Using Video Images from Smartphone Camera", In proceeding of the IEEE 41st Annual Computer Software and Applications Conference Workshop, Pages 967-972, July 2017.
19. Md Osman Gani, Golam Mushih Tanimul Ahsan, Duc Do, Drew Williams, Mohammed Balfas, Sheikh Iqbal Ahamed, Muhammad Arif, Ahmed J. Kattan, "A Novel Approach for localization in crowded area without GPS", In proceedings of the IEEE Healthcom, Pages 1-6, 2016.
20. Md Osman Gani, Taskina Fayezeen, Sheikh Iqbal Ahamed, Dennis B. Tomashek, Roger O. Smith, "Simple Activity Recognition Using Smartphone Technologies For In-Home Rehabilitation", In proceedings of the RESNA Annual Conference, Paper ID 151, 2015. [Online library, does not maintain page number]
21. Md Osman Gani, Sheikh Iqbal Ahamed, Samantha Ann Davis, Roger O. Smith, An Approach to Complex Functional Activity Recognition using Smartphone Technologies, In proceedings of the RESNA Annual Conference, Paper ID 152, 2014. [Online library, does not maintain page number]
22. F Rahman, Md Osman Gani, G M T Ahsan, and S I Ahamed, "Seeing beyond visibility: A Four Way Fusion of User Authentication for Efficient Usable Security on Mobile Devices", In proceedings of the IEEE 8th International Conf. on Software Security and Reliability-Companion, Pages 121-129, 2014.
23. Md Osman Gani, Casey O'Brien, S I Ahamed, Roger O Smith, "RSSI based Indoor Localization for Smartphone using Fixed and Mobile Wireless Node", In proceedings of the IEEE 37th Annual Computer Software and Applications Conference, Pages 110-117, 2013.
24. S I Ahamed, C S Hasan, M M Haque, Md Osman Gani, "Towards TTP-Free Lightweight Solution for Location Privacy Using Location-Based Anonymity Prediction", In proceedings of the ACM Research in Applied Computation Symposium, Pages 293-297, 2011.

25. Md Osman Gani, SIB Ashraf, N Malik, B Hossain, MA Hossain, H Sarwar "Recursive implementation of Markov Model, A new approach". In proceedings of the 25th IEEE International Conference on Advanced Information Networking and Applications Workshop, Pages 216-220, 2011.
26. FM Mahbub-ul-Islam, Md Osman Gani, Samiul Azam, Ahmed Imtiaz Khan, and SA Hossain, "Computational Model for Bangla Text to Braille Translation", In proceedings of the International Conference on Computer Processing of Bangla, Paper ID 23, 2011, Bangladesh. [Online library, does not maintain page number]
27. Ahmed Imtiaz Khan, Samiul Azam, Md Osman Gani, FM Mahbub-ul-Islam and SA Hossain. "Architecture & Implementation of Bangla Text to Braille Translation", In proceedings of the International Conference on Computer Processing of Bangla, Paper ID 24, 2011, Bangladesh. [Online library, does not maintain page number]
28. Md Osman Gani, Iftekhar Jahan Mehedi, Mehnaz Seraj, Hasan Sarwar, and Chowdhury Mofizur Rahman. "Prediction of the density of the Active Wireless device using Markov Model", In proceedings of the IEEE International Conference on Computer and Information Technology, Pages 691-695, 2008.

Non-Peer-Reviewed Works

- Articles
  1. Sahara Ali, Uzma Hasan, Xingyan Li, Omar Faruque, Akila Sampath, Yiyi Huang, Md Osman Gani, Jianwu Wang, "Causality for Earth Science--A Review on Time-series and Spatiotemporal Causality Methods," arXiv preprint arXiv:2404.05746, 2024
  2. Uzma Hasan, and Md Osman Gani. "KGS: Optimizing Data-driven Causal Discovery Using Knowledge-guided Search," arXiv preprint arXiv:2304.05493, 2023.
  3. Adib, Riddhiman, Md Osman Gani, Sheikh Iqbal Ahamed, and Mohammad Adibuzzaman. "Causal Discovery on the Effect of Antipsychotic Drugs on Delirium Patients in the ICU using Large EHR Dataset." arXiv preprint arXiv:2205.01057, 2022.
  4. Adib, Riddhiman, Md Mobasshir Arshed Naved, Chih-Hao Fang, Md Osman Gani, Ananth Grama, Paul Griffin, Sheikh Iqbal Ahamed, and Mohammad Adibuzzaman. "CKH: Causal Knowledge Hierarchy for Estimating Structural Causal Models from Data and Priors." arXiv preprint arXiv:2204.13775, 2022.

Works Submitted or In Preparation

- Articles
  1. Uzma Hasan, and Md Osman Gani, "DKC: Data-driven and Knowledge-guided Causal Discovery using a Tailored Scoring Criterion", 4th Conference on Causal Learning and Reasoning (CLeaR), Under review.
  2. Hanna Noyce, Emily Olejniczak, Vaskar Raychoudhury, Roger O. Smith, Md Osman Gani, "Understanding Community Accessibility Requirements of Wheelchair Users - Interviews, Discussion, and Modeling", ACM CHI Conference on Human Factors in Computing Systems, 2023 (**Revising to resubmit**)
  3. Haoxiang Yu, Raychoudhury, V., Saha, S., Gani, Md Osman Gani, "SharePredict: A Comprehensive System for Distributed Taxi Ride-Sharing via Demand Forecasting and Localized Communication". IEEE Transactions on Systems, Man, and Cybernetics**. (Revising to resubmit).**
  4. Riddhiman Adib, Sajid Hasan Apon, Md Osman Gani, Michael Heinz, Hari Bharadwaj, Mohammad Adibuzzaman, "Exploring Pathophysiology of Hearing Loss through Transportability of Causal Knowledge from Animal to Human Studies", ACM Conference on Health, Inference, and Learning (CHIL), 2023 (**In-Preparation**).
  5. Adib, Riddhiman, Md Osman Gani, Sheikh Iqbal Ahamed, and Mohammad Adibuzzaman. "Causal Discovery on the Effect of Antipsychotic Drugs on Delirium Patients in the ICU using Large EHR Dataset" AI in Medicine Journal, 2023 (**In-Preparation**).

Presentations

Conference/Poster Presentations (Juried/Refereed)

1. Emam Hossain, Sahara Ali, Yiyi Huang, Nicole-Jeanne Schlegel, Jianwu Wang, Aneesh Subramanian, Md Osman Gani, "Incorporating Causality with Deep Learning in Predicting Short-Term and Seasonal Sea Ice." AMS Annual Meeting, 2024
2. Aneesh Subramanian, Devon Dunmire, Emam Hossain, Md Osman Gani, Alison Banwell, Brendan M Myers, "The fate of Greenland Ice Sheet supraglacial lakes in a warm and cool year." EGU General Assembly Conference, April 2024.
3. Muhammad Hasan Ferdous, Uzma Hasan, Md Osman Gani, "eCDANs: Efficient Temporal Causal Discovery from Autocorrelated and Non-stationary Data", AAAI Student Abstract, Washington DC, 2023.
4. Sourajit Saha, Shaswati Saha, Md Osman Gani, Tim Oates, and David Chapman. "RFC-Net: Learning High Resolution Global Features for Medical Image Segmentation on a Computational Budget.", AAAI Student Abstract, Washington DC, 2023.
5. Shaswati Saha, Md Fourkanul Islam, Roger O. Smith, Vaskar Raychoudhury, and Md Osman Gani "Redefining Wheelchair Accessibility through Cross-Domain Knowledge Transfer (WheelTransfer)", Occupational Therapy Summit, Madison, WI 2022.
6. Uzma Hasan, Md Osman Gani. "Towards Developing an Explainable Healthcare Framework With AI-Human Collaboration - A Causal Perspective", Student Research Competition, IEEE International Conference on Digital Health, 2021.
7. John Hata, Md Osman Gani, and Vaskar Raychoudhury. "CARE: Campus-wide Accessible Route Estimation through Surface Analysis", In Proceedings of the 20th ACM International Workshop on Mobile Computing Systems and Applications, Pages 173-173, 2019.
8. Md Osman Gani, Taskina Fayezeen, Sheikh Iqbal Ahamed, Richard J. Povinelli, "Computationally Efficient Human Activity Modelling and Its Application as a Service in Android Framework", ACM HotMobile, 2016, FL, USA.
9. Md Osman Gani, GMT Ahsan, Amit K. Saha, Sheikh Ahamed, "Smart Spectacle Clip to Train and Prevent Fall", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2016.
10. Taskina Fayezeen, Md Osman Gani, Sheikha Iqbal Ahamed, "mHealth System for the Patients with Arthritis", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2015.
11. Md Osman Gani, Duc Do, Balfas, Drew Williams, G M Tanimul, Sheikha Iqbal Ahamed, "Ubitrack: Locating lost pilgrims in the crowded area of Makkah during Hajj", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2014.
12. Piyush Saxena, Md Osman Gani, Sheikh Iqbal Ahamed, Stephen Yau, "Situation-Aware Cyber-Human Environments for Enriched Assisted Living", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2014.
13. Johnson, N., Kabobel, O., Lalley, E., Retler, K., Grande, P., Unetesch, R., Coffey, M., Haberlin, S., Gani, Md O., & Ahamed, S.I. Effect of an IPAD Application for Medical Imaging Procedure Preparation for Children with Autism Spectrum Disorder. International Family Nursing Conference. Minneapolis, June 19–22, 2013.
14. Johnson, N., Kabobel, O., Lalley, E., Retler, K., Grande, P., Unetesch, R., Coffey, M., Haberlin, S., Gani, Md O., & Ahamed, S.I. Effect of an IPAD Application for Medical Imaging Procedure Preparation for Children with Autism Spectrum Disorder. The Fly-In Research Conference at Children's Hospital of Wisconsin. Milwaukee, Wisconsin, May 23-24, 2013.
15. N K Johnson, E O Lalley, Md Osman Gani, S I Ahamed. Medical Imaging Procedure Preparation for children with Autism with an IPad App Social Script. Building Bridges Conference, Milwaukee, Wisconsin, May 15, 2013.

16. N K Johnson, Md Osman Gani, S I Ahamed, IPAD Application for Imaging Preparation Compared to Regular Care: Two Case Studies of Children with Autism. Midwest Nursing Research Society Conference, Chicago, Illinois, March 7-10, 2013.
17. Md Osman Gani, S I Ahamed, Towards Fall Prevention Using Human Activity Genome on Smartphones, Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2011, pp26
18. M Adibuzzaman, F A Kawsar, M M Haque, Md O Gani, N Steinhafel, S I Ahamed, Multimodal Ubiquitous Affect Detection for Social Network, Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, November 2011, pp22.

Creative Achievements

Project Proposal Submitted or Works in Progress

1. CAREER: Causal AI for Healthcare: Knowledge-Guided Discovery and Inference, National Science Foundation, Under review (PI).
2. SCC-IRG Track 2: MyPath: Personalized Accessible Routing for the Wheelchair Community through Smart Integration of User and Surface Characteristics, National Science Foundation, $1,500,000, Under review (PI).
3. RI: Medium: Causality for Language Models, Language Models for Causality: Interpretability, Fairness, and COVID-19 Racism, National Science Foundation, $1,200,000, Revising to Submit (PI).
4. ArtISAN: Artificial Intelligence Powered Safe and Accessible Navigation Framework for Vulnerable Road Users, Federal Highway Administration (FHWA), US Department of Transportation, $220,000, Under Review (co-PI).
5. MyPath NextGen: Smart Mapping of Crowd-Sensed Path Barrier Information for Personalized Navigation, National Institute on Disability, Independent Living, and Rehabilitation Research, Under Review, $600,000 (co-PI).

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Community and Profession

1. 2024 – Present, Reviewer, International Conference on Learning Representations (ICLR)
2. 2024 – Present, Publication Chair, IEEE International Conference on Pervasive Computing and Communications (PerCom) 2025.
3. 2023 – Present, Reviewer, International Conference on Artificial Intelligence and Statistics (AISTATS)
4. 2021 – Present, Reviewer, Machine Learning for Healthcare (MLHC) Conference
5. 2021 – Present, Reviewer, Machine Learning for Health (ML4H) Symposium
6. 2022 – Present, National Science Foundation Panelist
7. 2021 – 2023, Program Committee Member, IEEE International Conference on Digital Health (ICDH)
8. 2017 – 2024, Program Committee Member, IEEE Computer Software and Applications Conference (COMPSAC)
9. 2021, Workshop Co-Chair, EAI MobiQuitous 2021 - 18th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services
10. 2021, Co-Chair, Student Research Symposium, IEEE Computer Society Signature Conference on Computers, Software, and Applications Conference (COMPSAC)
11. 2021, Co-chair, IEEE International Workshop on Pervasive Context-Aware Smart Cities and Intelligent Transportation Systems, PerCom
12. 2021, Program Committee Member, IEEE International Conference on Digital Health (ICDH)

13. 2021, Program Committee Member, IEEE International Conference on Mobility, Sensing and Networking
14. 2020, Program Committee Member, 2020 IEEE International Digital Health as a Service Symposium
15. 2020, Reviewer, 21st International Conference on Distributed Computing and Networking
16. 2020, Artifacts Co-chair, IEEE International Conference on Pervasive Computing and Communications (PerCom).
17. 2020, Reviewer, IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS)
18. 2019, Co-chair, IEEE International Workshop on Integrated Smart Healthcare (WISH), COMPSAC
19. 2019, Reviewer, IEEE International Conference on Pervasive Computing and Communications
20. 2018, 2024, Reviewer, International Conference on Networking, Systems and Security (NSysS)
21. 2017 – 2019, Program Committee Member, ACM Symposium on Applied Computing (SAC)
22. 2016, Judge, ACM Marquette University Programming Competition for High School
23. 2010, Chief Judge and Problem Setter, MIST Programming Contest, Bangladesh
24. 2009 – 2011, Coach, Programming Contest Team, MIST, Bangladesh

Service to the Department

1. 2022 – Present, Research Seminar Coordinator
2. 2022 – Present, Member, Research Committee
3. 2022 – Present, Member, Graduate: IS on Campus
4. 2021 - 2022, Member, Faculty Search Committee
5. 2021 – Present, Volunteer, Center for Women in IT, UMBC
6. 2021, Judge, Student Research Poster Session, IS, UMBC

Service to the University

1. 2023 – Present, Faculty Member, Academic Conduct Committee

CURRICULUM VITAE

NIRMALYA ROY

EDUCATION

Ph.D.	2008	University of Texas at Arlington, Computer Science and Engineering
M.S.	2004	University of Texas at Arlington, Computer Science and Engineering
B.E.	2001	Jadavpur University, Computer Science and Engineering

Experience in Higher Education

2024 – present Director, Center for Use-Inspired Cyber Physical Systems (CYPRESS), UMBC
2024 – present University of Maryland Baltimore County, Associate Chair, Information Systems
2022 – present University of Maryland Baltimore County, Professor, Information Systems (early promotion)
2021 – present Associate Director, Center for Real-time Distributed Sensing and Autonomy (CARDS), UMBC
2020 – 2021 University of Maryland Baltimore County, Research Liaison, Information Systems
2019 – 2020 University of Maryland Baltimore County, Graduate Program Director, Information Systems
2018 – 2022 University of Maryland Baltimore County, Associate Professor, Information Systems (early tenure)
2013 – 2018 University of Maryland Baltimore County, Assistant Professor, Information Systems
2012 – 2013 Washington State University, Clinical Assistant Professor, Electrical Engg. & Computer Science
2010 – 2011 Institute for Infocomm Research (I2R), Research Scientist, Networking Protocols Department
2008 – 2009 University of Texas at Austin, Postdoctoral Research Fellow, Electrical & Computer Engineering

Experience in Other than Higher Education

2007 Motorola Research Lab, Research Intern
2006 Sun MicroSystem (Oracle now), Research Intern

Honors Received

2024 Best Reviewed Papers of Research Track, ACM CODS-COMAD 2024
2023 Best Paper Award, IEEE SmartComp 2023, DCOSS 2023
2022 Best Paper Award, IEEE SmartComp 2022, SPIE 2022
2022 Mid-Career Faculty Excellence Award, College of Engineering & Information Technology, UMBC
2021 Best Paper Award, IEEE/ACM CHASE 2021
2020 Best Paper Award, Elsevier's Pervasive and Mobile Computing 2020, IGSC 2020
2020 Top Cited Article, WIREs DMKD 2020
2019 University President's Nominee for Blavatnik Young Scientist Award
2019 - 2021 University Nominee for UMD Board of Regents' Faculty Awards
2018 NSF CAREER Award
2018 Best Paper Nomination, IEEE SmartComp 2018
2017 - 2023 UMBC Sponsored Research Appointment (SRA)
2014 UMB-UMBC Research & Innovation Partnership Grant Winner
2014 UMBC 2014 Summer Faculty Fellowship
2011 Best Research Paper, Institute for Infocomm Research (I2R), Singapore
2011 Best Paper Nomination, IEEE PerCom 2011
2009 Best Paper Award, QShine 2009
2009 NSF Travel Grant Recipient: MobiHoc 2009, MobiSys 2008, PerCom 2008, PETRA 2008
2008 Finalist: IBM PhD Fellowship 2008
2007 Best Intern Apprentice Award, Motorola

2007 Outstanding Graduate Teaching Assistant Award, University of Texas
2006 Mark Weiser Best Paper Award, IEEE PerCom 2006
2005 1st place at UTA Graduate Research Competition – IDEAZ 2005
2007 STEM Doctoral Fellowship
2004 – 2007 Dean's Fellowship
2004 – 2006 TexTec Scholarship
2003 Nokia Scholarship

Research Support and/or Fellowships
Current Research Support

External: Total for UMBC: **$25,945,163** (My share: **$8,711,953**)
Disclaimer: Project costs reflect total award amount including the total amount for collaborative grants. Acceptance rate is presented where available. Total external funding raised during my tenure at UMBC is ~$25.9 million with my share ~$8.7 million only.

- **PI,** MAGNUS: Advancing AI, Robotics, and Networking Research through a Multi-Domain Testbed for Defense Innovation, Department of Defense, **$799,588,** 09/2024 -- 09/2025
- **PI,** CNS: Collaborative Research: Conference: NSF/TIH PI Meeting and Workshop for Indo-US Research Collaboration, National Science Foundation, **$15,852,** 6/2023 -- 11/2023
- **PI,** ArtIAMAS MIPS Project: Virtual Physical Co-Simulations and Real-Time Collaborative Decision Making using Ground and Aerial Robots, Army Research Lab, **$310,000**, 05/01/2023 -- 04/30/2024 (Subaward $154,468 to Stormfish Scientific Corporation) (UMBC portion: **$141.907**)
- **PI,** Building Robust Deep Learning Models for Securing the Multi-domain Interactions of Autonomous Cyber-Physical Systems, Office of Naval Research, **$582,596**, 1/01/2023 -- 12/31/2025
- **PI,** EAGER: CNS: RobSenCom: A Middleware to Improve the Connectivity between Heterogeneous Robots and IoT, National Science Foundation, **$307.694**, 10/01/2022 -- 03/31/2025
- **PI,** Student Travel Grant for 2023 IEEE International Conference on Pervasive Computing and Communications (PerCom), National Science Foundation, **$25,000**, 12/06/2022 -- 10/05/2023
- **PI,** US-India Collaborative: Research Supplement CNS: Detecting Behavioral Health Disorders of Older Adults using Self-supervised Learning and Causal Reasoning, National Science Foundation, **$100,000**, 10/01/2022 -- 09/30/2023
- **PI,** Detecting Landmines in Contested Environment using Unmanned Ground Vehicles, ArtIAMAS-MIPS, Army Research Lab, **$68,500,** 05/01/2022 -- 04/30/2023 in partnership with Prophecy Sensors LLC
- **Co-PI,** AI and Autonomy for Multi-Agent Systems (ArtIAMAS Cooperative Research Agreement), Army Research Lab, **$20,468,724,** 05/12/2021 -- 05/11/2026 (PI: Aryya Gangopadhyay) My academic share (20%): **$4,093,744**
- **PI,** CNS REU Site: Research Experiences for Undergraduates in Smart Computing and Communications, National Science Foundation, **$402,234**, 03/01/2021 -- 02/29/2025 (Past Co-PI: Dmitri Perkins, Current Co-PI: Anupam Joshi)
- **Co-PI,** HDR DSC: Collaborative Research: Creating and Integrating Data Science Corps to Improve the Quality of Life in Urban Areas, National Science Foundation, **$858,229**, 10/01/2019 -- 09/30/2022 (PI: Aryya Gangopadhyay)
- **PI,** Optically networked semiconductor spin qubits via liquid crystal mediated ordering, Office of Naval Research, **$219,901**, 09/01/2018 - 02/28/2022 [Co-Investigator: Todd Pitman, James Franson]

- **PI,** CAREER: Scalable and Adaptable Cross-Domain Autonomous Health Assessment, National Science Foundation, **$550,316**, 05/01/2018- 04/30/2025
- **PI,** Functional and Cognitive Health Assessment of Older Adults with Dementia, Alzheimer's Association Research Grant, **$150,000**, 01/01/2018- 12/31/2021 [Co-PI: Elizabeth Galik (UMB), Aryya Gangopadhyay]
- **PI,** CNS 1640625: Distributed Data Analytics for Real-Time Monitoring and Detection of Flash Floods in Smart City, National Science Foundation, **$225,000**, 09/01/2016 – 08/31/2020 [Co-PI: Aryya Gangopadhyay]
- **PI,** Energy Education through Green Buildings, Constellation, **$25,000**, 01/01/2016 - 12/31/2016, [Co-PI: Nilanjan Banerjee, Aryya Gangopadhyay, George Karabatis]
- **PI,** I-Corps Teams: A Sensor Technology Box for Smart Health, National Science Foundation, **$50,000**, 11/01/2015 - 04/30/2017, [Co-PI: George Karabatis]
- **PI,** CNS 1544687, CPS: Breakthrough: Low-cost Continuous Virtual Energy Audits in Cyber-Physical Building Envelope, National Science Foundation, **$498,117**, 09/16/2015 – 08/31/2020 [Co-PI: Nilanjan Banerjee, Ryan Robucci] [acceptance rate < 8%]
- **PI,** A hybrid semiconductor-soft matter device as a route to a scalable, self-assembled spin register for optical quantum error correction, Office of Naval Research, **$331,387**, 01/01/2015 - 03/31/2019 [Co-Investigator: Todd Pitman, James Franson]
- **PI,** Energy Education through Green Buildings, Constellation, **$45,000**, 01/01/2015 - 12/31/2015, [Co-PI: Aryya Gangopadhyay, George Karabatis]
- **PI,** REU Supplements, EAGER: Design and Implementation of a Fine-Grained Appliance Energy Profiling System for Green Building, National Science Foundation, **$16,000**, 05/01/2015 - 12/31/2015
- **PI,** Energy Education through Green Buildings, Constellation, **$45,000**, 01/01/2014 - 12/31/2014, [Co-PI: Aryya Gangopadhyay, George Karabatis]
- **PI,** REU Supplements, EAGER: Design and Implementation of a Fine-Grained Appliance Energy Profiling System for Green Building, National Science Foundation, **$16,000**, 05/01/2014 - 12/31/2014
- **PI,** EAGER: Design and Implementation of a Fine-Grained Appliance Energy Profiling System for Green Building, National Science Foundation, **$258,040**, 09/01/2013 - 12/31/2015 [Co-PI: Behrooz Shirazi (WSU)]

Internal Research Support: Total: **$210,000** (My share: **$170,000**)

- **PI, AI CoExist,** UMBC Technology Catalyst Fund (TCF), **$20,000**, 1/2025 - 1/2026
- **PI, Invisible AI Fence,** UMBC Faculty Entrepreneurship AcceleraTor Fund (FEAT), **$15,000,** 4/2024 – 3/2025
- **PI,** COEIT Server Upgrade, **$25,000**, 03/01/2024
- **PI,** COEIT Server for NSF REU Students, **$20,000**, 03/01/2023
- **PI,** COEIT Laptop for NSF REU Students, **$15,000**, 03/01/2022
- **PI,** COEIT Lab Equipment Upgrade, **$6,500**, 04/01/2021
- **PI,** COEIT Lab Equipment Upgrade, **$5,000**, 02/01/2020
- **PI,** COEIT Lab Equipment Upgrade, **$5,000**, 04/01/2018
- **Co-PI**, Research Infrastructure Enabling PCB Manufacturing Capabilities in COEIT, UMBC College of Engineering and Information Technology, **$40,000**, 1/1/2016 – 12/31/2017 [Chintan Patel (PI), Co-PI: Nilanjan Banerjee, Ryan Robucci, Yordan Kostov, Ting Zhu, Charles LaBerge, Cynthia Matuszek]
- **PI**, Automated Functional and Behavioral Health Assessment of Older Adults with Dementia, UMB-UMBC

Research and Innovation Partnership Grant, **$50,000**, 03/01/2015 - 5/31/2016 [Co-PI: Aryya Gangopadhyay, Elizabeth Galik (UMB)] [acceptance rate: 19%]

- **PI**, Energy Disaggregation Algorithms for Green Building Technologies, Summer Faculty Fellowships (SFF), University of Maryland, Baltimore County, **$5,000**, 6/1/2014 – 8/31/2014
- **PI**, Smart Home in a Box Toolkit, Washington State University Gift, **$3,500**, (in-kind), 9/1/2013 – 12/31/2013

Ph.D. Students

Ph.D. Research Completed

Primary Advisor:

- Ph.D. dissertation advisor, Mohammad Arif Ul Alam. Dissertation Title: Context-Aware Multi-Inhabitant Functional and Physiological Health Assessment in Smart Home Environments. Graduated: December 2017. (First Employment: Research Staff Member, **IBM Research – MIT/IBM Watson AI Lab Cambridge, Massachusetts**) 2nd Employment: Assistant professor, **Univ of Massachusetts, Lowell**
- Ph.D. dissertation advisor, Md Abdullah Al Hafiz Khan. Dissertation Title: Cross-Domain Scalable Activity Recognition Models in Smart Environments. Graduating, Ph.D. dissertation defense: Feb 2019. (First Employment: Research Scientist: **Artificial Intelligence Lab, Philips Research North America, Cambridge, Massachusetts**) 2nd Employment: Assistant professor, **Kennesaw State University, Georgia**
- Ph.D. dissertation advisor, H M Sajjad Hossain. Dissertation Title: Active Activity Recognition with Context-aware Annotator Selection. Graduated: April 2019. (First Employment: Research Scientist: **Microsoft Research, Cambridge, Massachusetts**)
- Ph.D. dissertation advisor, Nilavra Pathak. Dissertation Title: Analysis of Energy Disaggregation for Sustainable Building Applications. Graduated: April 2019. (First Employment: Data Scientist: **Expedia Group, Seattle, Washington State**)
- Ph.D. dissertation advisor, Neha Singh. Dissertation Title: A Scalable Holistic Physical and Social Sensing Framework for Disaster Management. Graduated Summer 2022 (co-supervisor: Aryya Gangopadhyay) (First Employment: Lecturer: **Washington University, St Louis**)
- Ph.D. dissertation advisor, Bipen Basnyat. Dissertation Title: Vision and AI Enabled Flood Detection Systems in Urban Environment. Graduated: Spring 2022 (co-supervisor: Aryya Gangopadhyay) (First Employment: Data Scientist: **Deloitte, Washington D.C**)
- Ph.D. dissertation advisor, Sreenivasan Ramasamy Ramamurthy. Dissertation Title: A Counterfactual Verified Semi-Supervised Learning Framework for Older Adults' Functional and Cognitive Health Assessment, Graduated Summer 2022, (First Employment: Assistant professor, **Bowie State University, Maryland)**
- Ph.D. dissertation advisor, Abu Zaher Md Faridee. Building Robust Human Activity Recognition from Unlabeled Data. Graduated: Summer 2022 (First Employment: Applied Scientist: **Amazon, Seattle**)
- Ph.D. dissertation advisor, Avijoy Chakma. Dissertation Title: Towards Developing Scalable Activity Recognition Approach in IoT, Graduated Summer 2023 (First Employment: Assistant professor, **Bowie State University, Maryland)**
- Ph.D. dissertation advisor, Naima Khan. Dissertation Title: An IoT Assisted Machine Learning Framework for Monitoring the Thermal Variation on Building Envelope. Graduated Fall 2023 (First Employment: Research Fellow in the Center for Devices & Radiological Health at **FDA**)
- Ph.D. dissertation advisor, Zahid Hasan. Dissertation Title: Learning View-invariant and Novel Spatio-temporal Features Under Uncertainty from Video Data, Graduated Summer 2024 (First Employment: Postdoctoral Research Fellow, **University of Maryland Baltimore County**)

Committee Member:

- Mohammad S. Alodadi, Ph.D. dissertation Advisor, Vandana Janeja, 2020. Dissertation title: *Knowledge Discovery Through Linking Multiple Heterogeneous, Unstructured Data Streams: A Case of Clinical Notes Mining*
- Mahbubur Rahman, Ph.D. dissertation Advisor, Nilanjan Banerjee, 2019. Dissertation title: *Human-Machine Intelligence: A Design Paradigm*
- Amrita Anam, Ph.D. dissertation Advisor, Aryya Gangopadhyay, 2019. Dissertation title: *Tracking the evolution of physical events from social media posts using signal processing*
- Iyanuoluwa Emmanuel Odebode, Ph.D. dissertation Advisor, Aryya Gangopadhyay, 2019. Dissertation title: *Network Analytics towards Drug Repositioning using PIM Substrates*
- Galina Madjaroff, Ph.D. dissertation Advisor, Helena Mentis & Judah Ronch, 2018. Dissertation title: *Supporting Caregivers and Care Recipients after the Onset of Cognitive Impairment with Home Based Technology*
- David Lachut, Ph.D. dissertation Advisor, Nilanjan Banerjee, 2018. Dissertation title: *Holistic Home Energy Management: From Sensing to Data Analytics*
- Ahmad I. Alaiad, Ph.D. dissertation Advisor, Lina Zhou, 2015. Dissertation title: *A Model of Adoption of Emerging Home Healthcare Information Technology*
- Hsien-ming Chou, Ph.D. dissertation Advisor Dongsong Zhang, 2017. Dissertation title: *Context-Aware Call Management for Mobile Phones*

Ph.D. Research in Progress
Primary Advisor:

- Ph.D. dissertation advisor, Emon Dey. Research area: Machine Learning on Embedded Systems. Started Ph.D.: Fall 2019. Expected Completion: Spring 2025
- Ph.D. dissertation advisor, Indrajeet Ghosh. Research area: Human Activity Recognition. Started Ph.D.: Fall 2020. Expected Completion: Spring 2025
- Ph.D. dissertation advisor, David Welsh. Research area: Gunshot Detection and Assessment. Started Ph.D.: Fall 2017. Expected Completion: Fall 2025
- Ph.D. dissertation advisor, Masud Ahmed. Research area: Vision Models for Unmanned Ground Vehicles. Started Ph.D.: Spring 2020. Expected Completion: Spring 2025
- Ph.D. dissertation advisor, Jumman Hossain. Research area: Autonomy and Learning in Contested Environment. Started Ph.D.: Fall 2021. Expected Completion: Fall 2026
- Ph.D. dissertation advisor, Mohammad Saeid Anwar. Research area: Self-Organizing Wireless Sensor Networks. Started Ph.D.: Spring 2022. Expected Completion: Spring 2027
- Ph.D. dissertation advisor, Shadman Sakib. Research area: Contactless Physiological Health Sensing. Started Ph.D.: Spring 2024. Expected Completion: Spring 2029
- Ph.D. dissertation advisor, Gaurav Shinde. Research area: Federated Learning. Started Ph.D.: Fall 2024. Expected Completion: Fall 2029

Committee Member:

- Ph.D. comprehensive exam committee member, Argho Sarkar (UMBC) (Maryam Rahnemoonfar, advisor). Fall 2021
- Ph.D. comprehensive exam committee member, Pretom Roy Ovi (UMBC) (Aryya Gangopadhyay, advisor). Fall 2021
- Ph.D. comprehensive exam committee member, Md Mahmudur Rahman (UMBC) (Sanjay Purushotham, advisor). Spring 2021
- Ph.D. comprehensive exam committee member, Fatema Hasan (UMBC) (Shimei Pan, advisor). Fall 2020
- Ph.D. comprehensive exam committee member, Rohan Putatunda (UMBC) (Aryya Gangopadhyay, advisor). Fall 2020

- Ph.D. comprehensive exam committee member, Varun Mandalapu (UMBC) (Jiaqi Gong, advisor). Fall 2019
- Ph.D. comprehensive exam committee member, Peichang Shi (UMBC) (Aryya Gangopadhyay, advisor). Spring 2018
- Ph.D. comprehensive exam committee member, Arpita Roy (UMBC) (Shimei Pan, advisor). Spring 2018
- Ph.D. comprehensive exam committee member, Onimi Jademi (UMBC) (Gunes Koru, advisor). Spring 2017
- Ph.D. proposal defense committee member, Anamika Paul (UMBC) (Aryya Gangopadhyay, advisor). Proposal title: Detecting illicit retail networks from social media using deep learning, Fall 2020
- Ph.D. proposal defense committee member, Ajayi Oluwagbemiga (UMBC) (Aryya Gangopadhyay, advisor). Proposal title: Developing Adaptive Intrusion Detection Systems, Fall 2020
- Ph.D. proposal defense committee member, Pooja Parameshwarappa (UMBC) (Zhiyuan Chen, advisor). Proposal title: Clustering Approaches for anonymizing large-scale sequential physical activity data, Spring 2018
- Ph.D. proposal defense committee member, Iyanuoluwa Emmanuel Odebode (UMBC) (Aryya Gangopadhyay, advisor). Proposal title: Network Analytics towards Drug Repositioning using PIM Substrates, Fall 2017
- Ph.D. proposal defense committee member, Amrita Anam (UMBC) (Aryya Gangopadhyay, advisor). Proposal title: Tracking the evolution of physical events from social media posts using signal processing, Fall 2017

Master's Students

Master's Research Completed

Primary Advisor:

- M.S. thesis advisor, Indrajeet Ghosh (UMBC). Thesis title: IoT for Sports Analytics, Graduation date: May 2020
- M.S. thesis advisor, Fatimah Alqurmti (UMBC). Thesis title: Detecting Makeup Activities using Internet-of-Things, Graduation date: Summer 2019
- M.S. thesis advisor, Vishak Iyer (UMBC). Thesis title: Identifying User location and Activity recognition using low energy RSSI-based Bluetooth data. Graduation date: December 2016
- M.S. thesis advisor, Bipen Basnyat (UMBC). Thesis title: Design and Feasibility Study of Wireless Sensor Networks (WSN) based Cyber-Physical Systems in Flash Flood Forecasting. Graduation date: May 2017 (co-advisor: Aryya Gangopadhyay)
- M.S. thesis advisor, Sarthak Pathak (UMBC). Thesis title: A Holistic Cyber-Physical System to Detect Anomalies in Smart Home Appliances. Graduation date: May 2017

Master's Research in Progress

Primary Advisor:

- None

Committee Member:

- M.S. thesis committee member, Vikramaditya Battina (UMBC) (Nilanjan Banerjee). Thesis title: Inferring Autonomic Arousals using Periodic Leg Movements during Sleep. October 2018
- M.S. thesis committee member, Xiaoxia Zheng (UMBC) (Nilanjan Banerjee). Thesis title: Multi-sensor Periodic Leg Movements Detection by Characterizing Leg Movements During Sleep. September 2018
- M.S. thesis committee member, Pranav Chauthaiwale (UMBC) (Nilanjan Banerjee). Thesis title: Estimation of Systolic and Diastolic Blood Pressure using Photoplethysmography and Machine Learning. July 2018

- M.S. thesis committee member, Anoop Bhatti (UMBC) (Nilanjan Banerjee). Thesis title: Classifying Arousals in Sleep Using Deep Neural Networks. November 2017
- M.S. thesis committee member, Siddharth Utgikar (UMBC) (Nilanjan Banerjee). Thesis title: Sleep position Detection Using Wearable Ankle bands. September 2017
- M.S. thesis committee member, Rishi Sankineni (UMBC) (Jianwu Wang). Thesis title: Parallel feature selection of multiple class datasets using apache spark, April 2017
- M.S. thesis committee member, Piyush Waradpande (UMBC) (Nilanjan Banerjee). Thesis title: Activity Recognition using Radars. June 2015
- M.S. thesis committee member, Chinonso Ugwu (UMBC) (Nilanjan Banerjee). Thesis title: Scalability and Reliability of using Capacitive Sensor Arrays for Occupancy Detection. October 2015

Undergraduate Students

Undergraduate Research Completed

- Zobia Khan (UMBC NSF REU) (Research Project: A Resource Efficient Quantized Federated Learning Model for Brain Tumor Segmentation). Summer 2021, Advisor
- Matthew Ivler (UMBC NSF REU) (Research Project: SpecTextor: Dense Automated Text Generator for Sports News Articles). Summer 2021, Advisor
- Deepanjali Chowdhury (UMBC NSF REU) (Research Project: CHARLIE: A User-Friendly Health Chatbot that Analyzes Daily Activities to Determine Efficient Diets and Fitness Plans). Summer 2021, Advisor
- Nhan Nguyen (UMBC NSF REU) (Research Project: Study of Domain Adaptation Opportunities in Respiratory Symptom Detection Using Earables). Summer 2021, Advisor
- Ivan Neto (UMBC NSF REU) (Research Project: Unseen Travel Mode Identification using Transfer Learning). Summer 2021, Advisor
- Joshua Joseph (Independent Study) Cybersecurity of the Federal Government, Summer 2017, Advisor
- Joseph Taylor (UMBC NSF REU) (Research Project: Smart Home in a Retail Box: Modifying Inexpensive, Off-The-Shelf Hardware to Aid Cutting-Edge Research), Summer 2015, Advisor
- Joseph Taylor (UMBC NSF REU) (Research Project: A Survey of Embedded Power Line Communications Solutions for Sensor Network Applications), Summer 2014, Advisor
- Sheung Lu (UMBC NSF REU) (Research Project: A Microphone Sensor based System for Green Building Applications), Summer 2014, Advisor
- Joseph Taylor (WSU NSF REU) (Research Project: A Hardware Prototype for Power Consumption Telemetry Over Existing Mains Wiring), Summer 2013, Advisor
- Vignesh Ramachandran (WSU NSF REU) (Research Project: Determining Power Consumption of Consumer Appliances Using NILM), Summer 2013, Advisor
- Rachel King (WSU NSF REU) (Research Project: Activity Recognition in Smart Home Environments through Micro Activity Classifications), Spring 2013, Advisor
- Brooks Kindle (WSU NSF REU) (Research Project: Monitoring Patient Recovery using Wireless Physiotherapy Devices). Summer 2013, Advisor
- Catherine Hornback (WSU NSF REU) (Research Project: A Smartphone Based Activity Recognition Framework). Summer 2013, Advisor
- Joshua Joseph (Independent Study, Junior) (Research Project: Multi-angular View representation Learning from Few Labels). Fall 2021, Advisor
- Arooj Zia (Independent Study, Junior) (Research Project: Image Annotation for Chatbots (Question Answering & Scene Parsing)). Fall 2021, Advisor

Undergraduate Research in Progress

- Jared Lewis (Research Project: Efficient Communication over Lossy Channels). Fall 2024, Advisor
- Elijah Polyakov (Research Project: Software-Hardware Architecture for Audio Sensor Integration on Edge for Animal Deterrence). Fall 2024, Advisor

Independent Study Students

Independent Study Research Completed

- Indrajeet Ghosh (IS PhD) (Research Project: Active Learning Guided Self-Supervised Learning for Efficient Image Annotation). Fall 2021, Advisor
- Abu Zaher Md Faridee (IS PhD) Towards Building a Generalizable Human Motion Model with Hyperbolic Domain and Conditional Label Embedding. Spring 2021, Advisor
- Masud Ahmed (IS PhD) RGB-D based semantic segmentation for autonomous driving. Spring 2021, Advisor
- Zahid Hasan (IS PhD) Remote Photoplethysmogram (rPPG) System learning from large unlabeled data utilizing self-supervised representation learning. Spring 2021, Advisor
- Masud Ahmed (IS PhD) RGB and thermal data fusion for better object detection. Fall 2020, Advisor
- Zahid Hasan (IS PhD) Implementation of Remote Photoplethysmogram (rPPG) System in Low-Cost resource-constrained devices. Fall 2020, Advisor
- Emon Dey (IS Ph.D.) Accelerating Transfer Learning Models Through Minimizing Negative Transfer. Fall 2020, Advisor
- Avijoy Chakma (IS Ph.D.) Recent Trends and Future Opportunities in Time Series Domain Adaptation, Fall 2019, Advisor
- Emon Dey (IS Ph.D.) Deep learning into resource-constrained devices: A comprehensive study. Spring 2020, Advisor
- Wouter Popelier (IS MS) (Research Project: Automating the Request of Backup for Law Enforcement Officers during a Gunshot Event). Spring 2019
- Sreenivasan Ramasamy Ramamurthy (IS PhD) UiAR: User Invariant Activity Recognition for Older Adults, Fall 2018, Advisor
- Sreenivasan Ramasamy Ramamurthy (IS PhD) Mitigating Deployment Challenges in Activity Recognition for Older Adults and Scaling it using Self-Taught Learning, Spring 2018, Advisor
- Naima Khan (IS PhD) Developing Unsupervised Predictive Model for Indoor Built Environment Monitoring, Fall 2018, Advisor
- Neha Singh (IS PhD) Flood Detection Framework Fusing The Physical Sensing & Social Sensing, Fall 2018, Advisor
- Lingge Suo (IS PhD) (Research Project: Effect of Smartphone LED on Human Eye). Fall 2017, Spring 2018
- Linta Thomas (IS MS) (Research Project: CleanStain – Laundry Service at your door). Spring 2018
- Charu Saklecha (IS MS) (Research Project: A Survey on Dynamic Pricing Schemes for Evolving Smart Service Systems Applications). Fall 2017
- Hussein Hazazi (IS MS) (Research Project: Lakshmana Rekha: Keeping the Movements of the College Students Safe at the University Campuses). Fall 2017
- Parikshitha Sampigecool Manjunath (IS MS) (Research Project: A Resilient Service Demand Model for First Responders). Spring 2017
- David Welsh (IS MS) (Research Project: Gunshot detection). Spring 2017, Advisor
- Mohammad Arif Ul Alam (IS PhD) (Research Project: Stress Detection of Older Adults). Fall 2015, Advisor
- Md Abdullah Al Hafiz Khan IS PhD) (Research Project: Transfer Learning for Activity Recognition). Fall 2015, Advisor
- H M Sajjad Hossain (IS PhD) (Research Project: Scalable Crowd Sourcing). Fall 2015, Advisor
- Joseph Christou (IS MS) (Research Project: Smart Home Monitoring using IP Cameras). Summer 2015
- Nivedeeta Kale (IS MS) (Research Project: Ground Truth Data Collection for Activity Recognition using Wireless Sensor Networks: Methodologies, Challenges and Opportunities). Summer 2015
- Mohammad Arif Ul Alam (IS PhD) (Research Project: Hierarchical ADL Recognition Framework). Spring 2015
- Md Abdullah Al Hafiz Khan (IS PhD) (Research Project: Collaborative Opportunistic Crowd Sensing for Large Scale Human Activity Recognition). Spring 2015
- Nilavra Pathak (IS PhD) (Research Project: Scalable Non-Intrusive Load Monitoring Algorithms). Spring 2015
- H M Sajjad Hossain (IS PhD) (Research Project: Active Crowd Sourcing: Active Learning for Crowd

Sourcing). Spring 2015
- Nilavra Pathak (IS PhD) (Research Project: A Multi-modal Energy Disaggregation Framework for Non-Intrusive Load Monitoring). Spring 2014

Independent Study Research in Progress
- Snehalraj Chugh (MPS MS) (Research Project: Multimodal Soil Segmentation Using Vision-Language Models and Reinforcement Learning). Fall 2024

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications [h-index: 33, i-index: 97, Total Citations: 3989]

Note: In computer science the top-ranked, highly selective conferences are viewed as equally (if not more) important publications than journal papers. They are indicated as "Selective" conference papers in the publications list below. Acceptance rates (AR) are indicated when they were made publicly available. It is the convention in computer science for the primary author's name to appear first. If the authors contributed equally, then names are typically listed in alphabetical order. My standard practice is when the work was joint work with a student is to list the student's name(s) first. All citations are based on Google scholar.

The most recent Google scholar profile can be found at
http://scholar.google.com/citations?hl=en&user=6KQI1ekAAAAJ&view_op=list_works

Peer-Reviewed Works

Journal & Magazine Papers

- Mohammad Saeid Anwar, Anuradha Ravi, Emon Dey, Indrajeet Ghosh, Masud Ahmed, Nirmalya Roy, Jade Freeman, Timothy Gregory, Carl Busart. "MobHeteroCAS: Mobility-Aware DNN Task Scheduling in Heterogeneous Collaborative Autonomous Systems", ACM Transactions on Autonomous and Adaptive Systems (ACM TAAS), 2024 (under review, major revision)

- Lavanya Elluri, Varun Mandalapu, Piyush Vyas, Nirmalya Roy. "Recent Advancements in Machine Learning for Cybercrime Prediction", Journal of Computer Information Systems, 1-15. 2023

- Varun Mandalapu, Lavanya Elluri, Piyush Vyas, Nirmalya Roy. "Crime Prediction Using Machine Learning and Deep Learning: A Systematic Review and Future Directions", IEEE Access, 2023

- Indrajeet Ghosh, Avijoy Chakma, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy. "Sports Analytics Review: AI Applications, Emerging Technologies and Algorithmic Perspective", WIREs Data Mining and Knowledge Discovery (DMKD), 2023 [**Impact factor (2021): 7.558**]

- Sreenivasan Ramasamy Ramamurthy, Indrajeet Ghosh, Aryya Gangopadhyay, Elizabeth Galik, Nirmalya Roy. "STAR-Lite: A Light-weight Scalable Self-taught Learning Framework for Older Adults' Activity Recognition", Pervasive and Mobile Computing (PMC) Journal, Elsevier 2022

- Indrajeet Ghosh, Sreenivasan Ramasamy Ramamurthy, Avijoy Chakma and Nirmalya Roy. "DeCoach: Deep Learning-based Coaching for Badminton Player Assessment", Pervasive and Mobile Computing (PMC) Journal, Elsevier 2022

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Selective Conferences and Workshops

2025

- Emon Dey, Anuradha Ravi, Jared Lewis, Vinay Kumar, Jade Freeman, Timothy Gregory, Niranjan Suri, Carl Busart, Nirmalya Roy. "DACC-Comm: DNN-Powered Adaptive Compression and Flow Control for Robust Communication in Network-Constrained Environment", In Proceedings of the17th International Conference on COMmunication Systems & NETworkS (COMSNETS), Bengaluru, India, Jan 2025

2024

- Indrajeet Ghosh, Kasthuri Jayarajah, Nicholas Waytowich, Nirmalya Roy, "EEGAmp+: Investigating the Efficacy of Functional Connectivity for Detecting Events in Low-Resolution EEG", In Proceedings of the 21st EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Oslo, Norway, Nov 2024

- Indrajeet Ghosh, Garvit Chugh, Abu Zaher Md Faridee, Nirmalya Roy. "Unsupervised Domain Adaptation for Action Recognition via Self-Ensembling and Conditional Embedding Alignment", In Proceedings of the 24th IEEE International Conference on Data Mining (ICDM), Abu Dhabi, UAE, Dec 2024 [19.5% acceptance rate out of 604 submissions]

- Indrajeet Ghosh, Garvit Chugh, Kasthuri Jayarajah, Nirmalya Roy. "β-Decode: Attention-based Decoding Temporal Artifacts via Unsupervised β-Variational Autoencoder", In Proceedings of the ACM 8th Joint International Conference on Data Science & Management of Data (12th ACM IKDD CODS and 30th COMAD), IIT Jodhpur, India, Dec 2024 Best Reviewed Papers of Research Track

- Zahid Hasan, Masud Ahmed, Abu Zaher Md Faridee, Sanjay Purushotham, Hyungtae Lee, Heesung Kwon, and Nirmalya Roy. "VIVAR: Learning View-Invariant Embedding for Video Action Recognition", In Proceedings of the SPIE 8th International Conference on Video and Image Processing (ICVIP), Kuala Lumpur, Malaysia, Dec 2024

- Jumman Hossain, Abu-Zaher Faridee, Nirmalya Roy, Jade Freeman, Timothy Gregory and Theron T. Trout. "TopoNav: Topological Navigation for Efficient Exploration in Sparse Reward Environments", In Proceedings of the 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Abu Dhabi, Oct 2024

- Jumman Hossain, Abu-Zaher Faridee, Nirmalya Roy, Derrik E. Asher, Jade Freeman, Timothy Gregory and Theron T. Trout. "EnCoMP: Enhanced Covert Maneuver Planning with Adaptive Target-Aware Visibility Estimation using Offline Reinforcement Learning", In Proceedings of the IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS), Aarhus, Denmark, Sept 2024

- Avijoy Chakma, Anirban Das, Abu Zaher Md Faridee, Suchetana Chakraborty, Sandip Chakraborty, Nirmalya Roy. "AcouDL: Context-Aware Daily Activity Recognition from Natural Acoustic Signals", in Proceedings of the 8th IEEE International Workshop on Smart Service Systems (SmartSys), co-located with IEEE SMARTCOMP 2024, Osaka, Japan, June 2024

- Francesca Righetti, Carlo Vallati, Nirmalya Roy and Giuseppe Anastasi "Is Edge Computing Always Suitable for Image Analysis? An Experimental Analysis", In Proceedings of the IEEE 25th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM) workshop, Perth, Australia, June 2024

- Masud Ahmed, Zahid Hasan, Abu Zaher Md Faridee, Mohammad Saeid Anwar, Kasthuri Jayarajah, Sanjay Purushotham, Suya You, and Nirmalya Roy. ARSFineTune: On-the-Fly Tuning of Vision Models for Unmanned Ground Vehicles, in Proceedings of the 20th Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2024), Abu Dhabi, UAE, April 2024

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- Jumman Hossain, Abu-Zaher Faridee, Nirmalya Roy, Anjan Basak and Derrik E. Asher, "CoverNav: Cover Following Navigation Planning in Unstructured Outdoor Environment with Deep Reinforcement Learning", In Proceedings of the IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS), Toronto, Canada, Sept 2023

- Mohammad Saeid Anwar, Emon Dey, Maloy Kumar Devnath, Indrajeet Ghosh, Naima Khan, Jade Freeman, Timothy Gregory, Niranjan Suri, Kasthuri Jayaraja, Sreenivasan Ramasamy Ramamurthy, and Nirmalya Roy. "HeteroEdge: Addressing Asymmetry in Heterogeneous Collaborative Autonomous Systems." In Proceedings of the 20th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS 2023), Toronto, Canada, Sept 2023

- Zahid Hasan, Masud Hasan, Abu Zaher Md Faridee, Sanjay Purushotham, Heesung Kwon, Hyungtae Lee, Nirmalya Roy. "NEV-NCD: Negative Learning, Entropy, and Variance regularization based novel action categories discovery", In Proceedings of the 2023 IEEE International Conference on Image Processing (ICIP), Kuala Lumpur, Malaysia, Oct 2023

- Avijoy Chakma, Abu Zaher Md Faridee, Indrajeet Ghosh, Nirmalya Roy, "Domain Adaptation for Inertial Measurement Unit-based Human Activity Recognition: A Survey", in arXiv preprint, April 2023

- Naima Khan, Md Abdullah Al Hafiz Khan, Nirmalya Roy, "Unsupervised spatio-temporal anomalous thermal behavior monitoring of inside-built environments", in Proceedings of the 19th Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2023), Coral Bay, Pafos, Cyprus, June 2023 Best Paper Award

- Maloy Kumar Devnath, Avijoy Chakma, Mohammad Saeid Anwar, Emon Dey, Zahid Hasan, Marc Conn, Biplab Pal, Nirmalya Roy, "A Systematic Study on Object Recognition Using Millimeter-wave Radar", in

Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023

- Zahid Hasan, Abu Zaher Md Faridee, Masud Ahmed, Nirmalya Roy. "SrPPG: Semi-Supervised Adversarial Learning for Remote Photoplethysmography with Noisy Data", in Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023 Best Paper Award

- Masud Ahmed, Zahid Hasan, Tim Yingling, Eric O'Leary, Sanjay Purushotham, Suya You, Nirmalya Roy, "An Online Continuous Semantic Segmentation Framework with Minimal Labeling Efforts", in Proceedings of the 9th IEEE International Conference on Smart Computing (SmartComp), Nashville, Tennessee, USA, June 2023

- Emon Dey, Mikolaj Walczak, Mohammad Saeid Anwar, Nirmalya Roy, Jade Freeman, Timothy Gregory, Niranjan Suri, Carl Busart, "A Novel ROS2 QoS Policy-enabled Synchronizing Middleware for Co-simulation of Heterogeneous Multi-Robot Systems", in Proceedings of the 32nd IEEE International Conference on Computer Communications and Networks (ICCCN), Honolulu, HI, USA, July 2023

- Indrajeet Ghosh, Adam Goldstein, Avijoy Chakma, Jade Freeman, Timothy Gregory, Niranjan Suri, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy. HeteroSys: Heterogeneous and Collaborative Sensing in the Wild, in Proceedings of the 9th IEEE International Workshop on Sensors and Smart Cities (SSC), co-located with IEEE SmartComp, Nashville, Tennessee, USA, June 2023

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- Avi Spector, Wanying Zhu, Jumman Hossain, Nirmalya Roy, "Simulated Forest Environment and Robot Control Framework for Integration with Cover Detection Algorithms", in Proceedings of Symposium for Undergraduate Research in Data Science, Systems, and Security (REU Symposium 2022) co-located with 9th IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT'22), Vancouver, Washington, USA December 2022

- Indrajeet Ghosh, Avijoy Chakma, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy. "PerMTL: A Multi-Task Learning Framework for Skilled Human Performance Assessment", in Proceedings of the 21st IEEE International Conference on Machine Learning and Applications (IEEE ICMLA'22), Bahamas, Caribbean December 2022

- Zahid Hasan, Abu Zaher Md Faridee, Masud Ahmed, Nirmalya Roy. "Self-rPPG: Learning the Optical and Physiological Mechanics of Remote Photoplethysmography with Self -Supervision", in Proceedings of the IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), Washington D.C. Nov 2022

- Francesca Righetti, Carlo Vallati, Andrea Tubak, Nirmalya Roy, Bipendra Basnyat, Giuseppe Anastasi, "Assessing the Feasibility of Exploiting Edge Computing for Real-Time Monitoring of Flash Floods", in Proceedings of the 8th IEEE International Workshop on Sensor and Smart Cities (SSC) co-located with IEEE SMARTCOMP 2022, Espoo, Finland, June 2022

- Indrajeet Ghosh, Matthew Ivler, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy, "SpecTextor: End-to-End Attention-based Mechanism for Dense Text Generation in Sports Journalism", in Proceedings of the 7th IEEE International Workshop on Smart Service Systems (SmartSys), co-located with IEEE SMARTCOMP 2022, Espoo, Finland, June 2022

- Masud Ahmed, Naima Khan, Pretom Roy Ovi, Nirmalya Roy, Aryya Gangopadhyay, Sanjay Purushotham, and Suya You, "GADAN: Generative Adversarial Domain Adaptation Network for Debris Detection Using Drone", IEEE 4th International Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT'22) co-located with IEEE DCOSS 2022, Marina Del Rey, LA, California, US June 2022

- Emon Dey, Jumman Hossain, Nirmalya Roy, Carl Busart, "SynchroSim: An Integrated Co-Simulation Middleware for Heterogeneous Multi-Robot System", in Proceedings of 6th IEEE International Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE'22) co-located with IEEE DCOSS 2022, Marina Del Rey, LA, California, USA, June 2022

- Zahid Hasan, Emon Dey, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy, Archan Misra, "RhythmEdge: Enabling Contactless Heart Rate Estimation on the Edge", in Proceedings of the 8th IEEE International Conference on Smart Computing (SmartComp), Espoo, Finland, June 2022 Best Paper Award

- Abu Zaher Md Faridee, Avijoy Chakma, Zahid Hasan, Nirmalya Roy, Archan Misra, "CoDEm: Conditional Domain Embeddings for Scalable Human Activity Recognition", in Proceedings of the 8th IEEE International Conference on Smart Computing (SmartComp), Espoo, Finland, June 2022

- Md Abdullah Al Hafiz Khan and Nirmalya Roy, "Cross-Domain Unseen Activity Recognition Using Transfer Learning", in Proceedings of IEEE Computers, Software, and Applications Conference (COMPSAC), June 2022

- Avijoy Chakma, Abu Zaher Md Faridee, Nirmalya Roy and Raghuveer Rao, "Semi-supervised Multi-source Domain Adaptation in Wearable Activity Recognition", in Proceedings of 18th International Conference on Distributed Computing in Sensor Systems (DCOSS), Marina Del Rey, LA, California, June 2022

- Bipendra Basnyat, Nirmalya Roy, Aryya Gangopadhyay, Adrienne Raglin, "Environmental Sound Classification for Flood Event Detection", in Proceedings of IEEE International Conference on Intelligent Environments (IE), June 2022

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- Pretom Roy Ovi, Emon Dey, Nirmalya Roy, Aryya Gangopadhyay, "Towards developing data security aware Federated Training framework in the multi-modal battlefield environment", In Proceedings of SPIE Defense + Commercial Sensing, April 2022

- Sreenivasan Ramasamy Ramamurthy, Soumyajit Chatterjee, Elizabeth Galik, Aryya Gangopadhyay, Sandip Chakraborty, Bivas Mitra, Nirmalya Roy. "CogAx: Early Assessment of Cognitive and Functional Impairment from Accelerometry". in Proceedings of the 20th IEEE International Conference on Pervasive Computing and Communications (PerCom), Pisa, Italy, March 2022

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- Naima Khan, Nirmalya Roy. "Monitoring Thermal Condition inside Built Environment with Longitudinal Thermal Images", in Proceedings of the 20th IEEE International Conference on Machine Learning and Applications (ICMLA), December 2021

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- Zahid Hasan, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy. "CamSense: A Camera-Based Contact-less Heart Activity Monitoring", in Proceedings of the IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), Washington D.C. December 2021

- Nhan Nguyen, Avijoy Chakma, Nirmalya Roy. "A Scalable and Domain Adaptive Respiratory Symptoms Detection Framework using Earables", in Proceedings of the National Symposium for NSF REU Research in Data Science, Systems, and Security in conjunction with IEEE Big Data Conference, Dec 2021

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- David Welsh, Abu Zaher Faridee, Nirmalya Roy. "Hybrid Distance-Based Framework for Classification of Embedded Firearm Recoil Data", in Proceedings of the 17th Workshop on Context and Activity Modeling and Recognition (CoMoRea'21), co-located with IEEE PerCom, Kassel, Germany, March 2021

- Bipendra Basnyat, Nirmalya Roy, Aryya Gangopadhyay. "Flood Detection using Semantic Segmentation and Multimodal Data Fusion", in Proceedings of the 6th Workshop on Pervasive Context-Aware Smart Cities and Intelligent Transportation Systems (PerAwareCity'21), co-located with IEEE PerCom, Kassel, Germany, March 2021

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- Bipendra Basnyat, Neha Singh, Nirmalya Roy, Aryya Gangopadhyay. "Vision Powered Conversational AI for Easy Human Dialogue Systems", in Proceedings of the IEEE 17th International Conference on Mobile Ad Hoc and Sensor Systems (MASS), Delhi NCR, December 2020

- Soumyajit Chatterjee, Avijoy Chakma, Aryya Gangopadhyay, Nirmalya Roy, Bivas Mitra, Sandip Chakraborty, "LASO: Exploiting Locomotive and Acoustic Signatures over the Edge to Annotate IMU Data for Human Activity Recognition", in Proceedings of the 22nd ACM International Conference on Multimodal Interaction (ICMI), Netherlands, October 2020

- Emon Dey and Nirmalya Roy, "OMAD: On-device Mental Anomaly Detection for Substance and Non-Substance Users", in Proceedings of the 20th IEEE International Conference on Bioinformatics and Bioengineering (BIBE), October 2020

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- Neha Singh, Bipendra Basnyat, Nirmalya Roy, Aryya Gangopadhyay, "Flood Detection Framework Fusing the Physical Sensing and Social Sensing", in Proceedings of the 6th IEEE International Workshop on Sensors and Smart Cities (SSC) co-located with SmartComp, Bologna, Italy, September 2020

- Bipendra Basnyat, Nirmalya Roy, Aryya Gangopadhyay, "Towards AI Conversing: FloodBot using Deep Learning Model Stacks", in Proceedings of the 6th IEEE International Conference on Smart Computing (SmartComp), Bologna, Italy, September 2020

- Naima Khan and Nirmalya Roy, "Water Quality Assessment with Thermal Images", in Proceedings of the 6th IEEE International Conference on Smart Computing (SmartComp), Bologna, Italy, September 2020

- Avijoy Chakma, Abu Zaher Md Faridee, Nirmalya Roy, H M Sajjad Hossain, "Shoot Like Ronaldo: Predict Soccer Penalty Outcome with Wearables", in Proceedings of the 6th IEEE International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), co-located with PerCom, pp., Austin March 2020.

- Indrajeet Ghosh, Sreenivasan Ramasamy Ramamurthy, Nirmalya Roy, "StanceScorer: A Data Driven Approach to Score Badminton Player", in Proceedings of the 6th IEEE International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), co-located with PerCom, pp., Austin, March 2020.

- Naima Khan and Nirmalya Roy, "Cooking Event Detection from Temporal Thermal Condition of Residential Home", in Proceedings of the 4th IEEE PerCom International Workshop on Pervasive Smart Living Spaces (PerLS), co-located with PerCom, pp., Austin, March 2020.

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- Abu Zaher Md Faridee, Md Abdullah Al Hafiz Khan, Nilavra Pathak, Nirmalya Roy, "AugToAct: Scaling Complex Human Activity Recognition with Few Labels", 16th ACM/EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Houston, Nov 2019

- Neha Singh, Nirmalya Roy, and Aryya Gangopadhyay, "Localized Flood Detection with Minimal Labeled Social Media Data Using Transfer Learning", in Proceedings of the Association for the Advancement of Artificial Intelligence - AAAI Fall Symposium, AI for Social Good, Arlington, Virginia, Nov 2019

- H M Sajjad Hossain and Nirmalya Roy, "Active Deep Learning for Activity Recognition with Context Aware Annotator Selection", in proceedings of the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Anchorage, Alaska, August 2019

- Amrita Anam, Aryya Gangopadhyay and Nirmalya Roy, "Event Characterization and Separation using Wavelet Signatures", in proceedings of the 5th workshop on Mining and Learning from Time Series (MiLeTS) in conjunction with 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Anchorage, Alaska, August 2019

- Naima Khan, Nilavra Pathak and Nirmalya Roy. "Detecting Common Insulation Problems in Built Environments using Thermal Images", in Proceedings of the 5th IEEE International Conference on Smart Computing (SmartComp), Washington D.C., June 2019

- Varun Mandalapu, Lavanya Elluri and Nirmalya Roy. "Developing Machine Learning based Predictive Models for Smart Policing", in Proceedings of the 1st IEEE International Students Workshop on Smart Computing (SmartStudents), co-located with SmartComp, pp. 1-6, Washington D.C., June 2019

- Amrita Anam, Aryya Gangopadhyay, Nirmalya Roy. "Identifying the Context of Hurricane Posts on Twitter using Wavelet Features", in Proceedings of the 5th IEEE International Conference on Smart Computing (SmartComp), Washington D.C., June 2019

- Nilavra Pathak, Jimmy Foulds, Nirmalya Roy, Nilanjan Banerjee and Ryan Robucci. "A Bayesian Data Analytics Approach to Buildings' Thermal Parameter Estimation", in Proceedings of the 10th ACM International Conference on Future Energy Systems (ACM e-Energy), June 2019

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- H M Sajjad Hossain and Nirmalya Roy, "SocialAnnotator: Annotator Selection by Exploiting Social Relationships in Activity Recognition", in Proceedings of the IEEE AAAI 2018 Fall Symposium, Oct 2018

- Bipendra Basnyat, Nirmalya Roy and Aryya Gangopadhyay, "A Flash Flood Categorization System using Scene-Text Recognition", in Proceedings of the 4th IEEE International Conference on Smart Computing (SmartComp), Sicily, Italy, June 2018

- Amrita Anam, Aryya Gangopadhyay and Nirmalya Roy, "Evaluating Disaster Time-line from Social Media using Wavelet Analysis", in Proceedings of the 4th IEEE International Conference on Smart Computing (SmartComp), Sicily, Italy, June 2018

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- Md Abdullah Al Hafiz Khan and Nirmalya Roy, "UnTran: Recognizing Unseen Activities with Unlabeled data using Transfer Learning", ACM/IEEE International Conference on Internet-of-Things Design and Implementation (IoTDI), April 2018

- Md Abdullah Al Hafiz Khan, Nirmalya Roy, and Archan Misra, "Scaling Human Activity Recognition via Deep Learning-based Domain Adaptation", in Proceedings of the IEEE International Conference on Pervasive Computing and Communications (PerCom), March 2018

- Md Abdullah Al Hafiz Khan, David Welsh, and Nirmalya Roy, "Firearm Detection Using Wrist Worn Tri-Axis Accelerometer Signals", in Proceedings of the 4th Workshop on sensing systems and applications using wrist worn smart devices (WristSense'18), co-located with PerCom, March 2018

- Abu Zaher Md Faridee, Sreenivasan Ramasamy Ramamurthy, H M Sajjad Hossain, and Nirmalya Roy "HappyFeet: Recognizing and Assessing Dance on the Floor", in Proceedings of the ACM 19th International Workshop on Mobile Computing Systems and Applications (HotMobile), Feb. 2018

- Nilavra Pathak, David Lachut, Nilanjan Banerjee, Nirmalya Roy, and Ryan Robucci, "Non-Intrusive Air Leakage Detection from Residential Homes", ACM 19th International Conference on Distributed Computing and Networking (ICDCN), Varanasi, India, Jan 2018 (invited)

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- David Lachut, Nilavra Pathak, Nilanjan Banerjee, Nirmalya Roy, and Ryan Robucci "Longitudinal Energy Waste Detection with Visualization", in Proceedings of the 4th ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys), Delft, The Netherlands, November 2017

- Bipendra Basnyat, Amrita Anam, Neha Singh, Aryya Gangopadhyay, and Nirmalya Roy, "Analyzing Social Media Texts and Images to Assess the Impact of Flash Floods in Cities", in Proceedings of the 2nd IEEE International Workshop on Smart Service Systems (SmartSys), co-located with SmartComp, pp. 1-6, May 2017

- Mohammad Arif Ul Alam and Nirmalya Roy, "Unseen Activity Recognition: A Hierarchical Active Transfer Learning Approach", in Proceedings of the 37th IEEE International Conference on Distributed Computing (ICDCS 2017), pp. 436-446. June 2017 (**17% acceptance rate**)

- Md Abdullah Al Hafiz Khan, Nirmalya Roy, and H M Sajjad Hossain, "COAR: Collaborative and Opportunistic Human Activity Recognition", in Proceedings of the 13th International Conference on Distributed Computing in Sensor Systems (DCOSS), June 2017

- H M Sajjad Hossain, Md Abdullah Al Hafiz Khan, and Nirmalya Roy. "SoccerMate: A Personal Soccer Attribute Profiler using Wearables", in Proceedings of the 1st IEEE PerCom International Workshop on Behavioral Implications of Contextual Analytics (BICA), co-located with PerCom, pp. 164-169. March 2017.

- Mohammad Arif Ul Alam and Nirmalya Roy, "Single Wearable Sensor Based Multi-Label Diversity Activity Recognition", in Proceedings of the 3rd IEEE International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), co-located with PerCom, pp. 691-696, March 2017.

- Md Abdullah Al Hafiz Khan and Nirmalya Roy, "TransAct: Transfer learning Enabled Activity Recognition", in Proceedings of the 1st IEEE PerCom International Workshop on Pervasive Smart Living Spaces (PerLS), co-located with PerCom, pp. 545-550, March 2017.

- David Welsh and Nirmalya Roy, "Smartphone-based Mobile Gunshot Detection", In Proceedings of the 13th Workshop on Context and Activity Modeling and Recognition (CoMoRea'17), co-located with PerCom, pp. 244-249, March 2017.

- Joseph Taylor, H M Sajjad Hossain, Mohammad Arif Ul Alam, Md Abdullah Al Hafiz Khan, Nirmalya Roy, Elizabeth Galik, and Aryya Gangopadhyay. "Demo: SenseBox: A Low-Cost Smart Home System", in Proceedings of the IEEE International Conference on Pervasive Computing and Communications Demonstrations (PerCom), March 2017.

2016

- Mohammad Arif Ul Alam, Nirmalya Roy, Michelle Petruska, and Andrea Zemp, "Smart-Energy Group Anomaly Based Behavioral Abnormality Detection", in Proceedings of the IEEE Wireless Health 2016, pp. 1-8, Washington D.C. October 2016.

- Mohammad Arif Ul Alam, Nirmalya Roy, Archan Misra, Joseph Taylor, "CACE: Exploiting Behavioral Interactions for Improved Activity Recognition in Multi-Inhabitant Smart Homes", in Proc. 36th IEEE International Conference on Distributed Computing Systems (ICDCS) Nara, Japan, pp. 539-548, June 2016. (**17% acceptance rate**)

- Mohammad Arif Ul Alam, Nirmalya Roy, Sarah Holmes, Aryya Gangopadhyay, Elizabeth Galik, "Automated Functional and Behavioral Health Assessment of Older Adults with Dementia", in Proc. First IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), pp. 140-149, Washington D.C. June 2016.

- Md Abdullah Al Hafiz Khan, Ruthvik Kukkapalli, Piyush Waradpande, Sekar Kulandaivel, Nilanjan Banerjee, Nirmalya Roy, Ryan Robucci, "RAM: Radar based Activity Monitor", in Proc. IEEE International Conference on Computer Communications (INFOCOM), pp. 1-9, April 2016. (**18% acceptance rate**)

- H M Sajjad Hossain, Nirmalya Roy, Md Abdullah Al Hafiz Khan, "Active Learning Enabled Activity Recognition", in Proceedings of the IEEE International Conference on Pervasive Computing and Communications (PerCom), pp. 1-9, March 2016. (**15% acceptance rate**)

2015

- Nilavra Pathak, Nirmalya Roy, and Animikh Biswas "Iterative Signal Separation Assisted Energy Disaggregation", in Proceedings of the IEEE 6th International Green and Sustainable Computing Conference (IGSC 2015), pp. 1-8, Dec 2015. Las Vegas, USA (**27% acceptance rate**)

- Mohammad Arif Ul Alam, Nilavra Pathak, Nirmalya Roy, "Mobeacon: An iBeacon-Assisted Smartphone-based Real Time Activity Recognition Framework", in Proceedings of the 12th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Pages 130-139, July 2015. (**27% acceptance rate**)

- Md. Abdullah Al Hafiz Khan, Sajjad Hossain, and Nirmalya Roy "Infrastructure-less Occupancy Detection and Semantic Localization in Smart Environments", in Proceedings of the 12th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Pages 51-60, July 2015. (27% **acceptance rate**)

- Nilavra Pathak, Md. Abdullah Al Hafiz Khan, and Nirmalya Roy, "Acoustic based appliance state identifications for fine grained energy analytics", in Proceedings of the IEEE International Conference on Pervasive Computing and Communications (PerCom), pp. 63-70, March 2015. (**15% acceptance rate)**

- Nirmalya Roy, Nilavra Pathak, and Archan Misra, "AARPA: Combining Mobile and Power-line Sensing

for Fine-grained Appliance Usage and Energy Monitoring", in Proceedings of the IEEE International Conference on Mobile Data Management (MDM), pp. 213-218, May 2015. (**25% acceptance rate**)

- Md. Abdullah Al Hafiz Khan, Sajjad Hossain, and Nirmalya Roy, "SensePresence: Infrastructure-less Occupancy Detection for Opportunistic Sensing Applications", in Proc. International Workshop on Human Mobility Computing and Privacy (HuMoComP), co-located with MDM, pp. 56-61, May 2015.

- Sajjad Hossain, Nirmalya Roy, and Hafiz Khan, "Sleep Well: A Sound Sleep Monitoring Framework for Community Scaling", in Proceedings of the IEEE International Conference on Mobile Data Management, (MDM), pp. 44-53, June 2015. (**25% acceptance rate**)

2014

- Nirmalya Roy and Christine Julien, "Immersive physiotherapy: Challenges for smart living environments and inclusive communities", in Proceedings of the 12th International Conference on Smart Homes and Health Telematics (ICOST), pp 242-248, Denver, USA, June 2014.

- Nirmalya Roy and Brooks Reed Kindle, "Monitoring patient recovery using wireless physiotherapy devices", in Proceedings of the 12th International Conference on Smart Homes and Health Telematics (ICOST), pp 71-79, Denver, USA, June 2014.

- Mohammad Arif Ul Alam and Nirmalya Roy, "Gesmart: A gestural activity recognition model for predicting behavioral health", in Proceedings of the IEEE International Conference on Smart Computing (SmartComp), pp. 193-200, Hong Kong, China, November 2014.

2013 – 2004

- Nirmalya Roy, David Kleinschmidt, Joseph Taylor and Behrooz Shirazi, "Performance of the Latest Generation Powerline Networking for Green Building Applications," in Proceedings of the 5th ACM Workshop on Embedded Systems for Energy-Efficient Buildings, (BuildSys), Pages 1-8, Rome, Italy, 2013

- Nirmalya Roy, Archan Misra, and Diane Cook, "Infrastructure-Assisted Smartphone-based ADL Recognition in Multi-Inhabitant Smart Environments", in Proceedings of the IEEE International Conference on Pervasive Computing (PerCom), pp. 38-46, March 2013. (**11% acceptance rate**)

- Neda Edalat, Wendong Xiao, Nirmalya Roy, Sajal K. Das and Mehul Motani, "Combinatorial Auction-Based Task Allocation in Multi-Application Wireless Sensor Networks", in Proceedings of the IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC), pp. 174-181, October 2011.

- Nirmalya Roy, Archan Misra, Christine Julien, Sajal K. Das, and Jit Biswas, "An Energy Efficient Quality Adaptive Multi-Modal Sensor Framework for Context Recognition," in Proceedings of the IEEE Int'l Conf. on Pervasive Computing (PerCom), pp. 63-73, Seattle, USA, Mar 2011. (**11% acceptance rate**) Nominated for Mark Weiser Best Paper Award

- Agoston Petz, Taesoo Jun, Nirmalya Roy, Chien-Liang Fok, and Christine Julien, "Passive Network-Awareness for Dynamic Resource-Constrained Networks," in Proceedings of the 11th IFIP International Conference on Distributed Applications and Interoperable Systems, (DAIS 2011), pp. 106-121, June 2011.

- Taesoo Jun, Nirmalya Roy and Christine Julien, "Modeling Delivery Delay for Flooding in Mobile Ad Hoc Networks," in Proceedings of the IEEE International Conference on Communications (ICC) 2010.

- Nirmalya Roy, Vasanth Rajamani, and Christine Julien, "Supporting Multi-Fidelity-Aware Concurrent Applications in Dynamic Sensor Networks," in Proceedings of the 2nd International Workshop on Information Quality and Quality of Service for Pervasive Computing (IQ2S), co-located with PerCom, pp. 43-49, March 2010.

- Nirmalya Roy, Kevin Brooks, and Christine Julien, "Usability of Semantic Web for Enhancing Digital Living Experience," in Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC), pp. 1-6, January 2010.

- Nirmalya Roy, Christine Julien and Sajal K. Das, "Resource-Optimized Quality -Assured Ambiguous Context Mediation in Pervasive Environments," in Proceedings of the International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine), pp 232-248, Vol. 22, November 2009. Best Paper Award

- Nirmalya Roy, Archan Misra, Sajal K. Das, and Christine Julien, "Quality-of-Inference (QoINF)-Aware Context Determination in Assisted Living Environments", in Proceedings of ACM SIGMOBILE Workshop on Medical-Grade Wireless Networks (WiMD), co-located with MobiHoc, Pages 27-32, May 2009.

- Nirmalya Roy, Archan Misra and Sajal K. Das, "Efficient Long-Term Quality-of-Inference (QoINF)-Aware Context Determination in Pervasive Care Environments," in Proceedings of ACM SIGMOBILE Workshop on Systems and Networking Support for Healthcare and Assisted Living Environments (HealthNet), co-located with MobiSys, June 2008.

- Nirmalya Roy, Gautham Pallapa, and Sajal K. Das, "An Ontology-Driven Ambiguous Contexts Mediation Framework for Smart Healthcare Applications", in Proceedings of the IEEE International Conference on PErvasive Technologies Related to Assistive Environments (PETRA), pp. 1-8, July 2008.

- Gautham Pallapa, Nirmalya Roy, and Sajal K. Das, "A Scheme for Quantizing Context Privacy in Context-aware Ubiquitous Computing", in Proceedings of the IEEE International Conference on Intelligent Environments (IE), pp. 1-8, July 2008.

- Nirmalya Roy, Gautham Pallapa, and Sajal K. Das, "A Middleware Framework for Ambiguous Context Mediation in Smart Home Healthcare Application," in Proceedings of the IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), pp. 72-80, October 2007. (**26% acceptance rate**)

- Gautham Pallapa, Nirmalya Roy, and Sajal K. Das, "Precision: Privacy Enhanced Context-Aware Information Fusion in Ubiquitous Healthcare," in Proceeding of the First Workshop on Software Engineering of Pervasive Computing Applications, Systems and Environments (SEPCASE '07), co-located with ICSE, pp. 10-17, May 2007. (**29% acceptance rate**)

- Preetam Ghosh, Nirmalya Roy, Kalyan Basu, Sajal K. Das, Paul. Wilson, and Prabir Das, "A Case Study-based Performance Evaluation Framework for CSCF Processes on a Blade-Server," in Proceedings of the IEEE International Conference on Networking and Services (ICNS), June 2007. (**38% acceptance rate**)

- Nirmalya Roy, Abhishek Roy, and Sajal K. Das, "Context-Aware Resource Management in Multi Inhabitant Smart Homes: A Nash H-learning based Approach", in Proceedings of the IEEE International Conference on Pervasive Computing (PerCom 2006), pp.148-158, Pisa, Italy, Mar 2006 (**8% acceptance rate**) Mark Weiser Best Paper Award

- Nirmalya Roy, Abhishek Roy, Kalyan Basu, and Sajal K. Das, "A Cooperative Learning Framework for

Mobility- Aware Resource Management in Multi-Inhabitant Smart Homes", in Proceedings of the IEEE International Conference on Mobile and Ubiquitous Systems: Networking and Services (MobiQuitous 2005), San Diego, California, USA, pp. 393-403, July 2005 [**acceptance rate: 35%**]

- Nirmalya Roy, Sajal K. Das, Kalyan Basu, and Mohan Kumar, "Enhancing Availability of Grid Computational Services to Ubiquitous Computing Applications", in Proceedings of the IEEE International Conference on Parallel and Distributed Processing Symposium (IPDPS'2005), pp. 92-102, Denver, Colorado, USA, April 2005 (**12% acceptance rate**)

- Preetam Ghosh, Nirmalya Roy, Sajal K.Das and Kalyan Basu, "A Game Theory based Pricing Strategy For Job Allocation in Mobile Grid," in Proceedings of the IEEE International Conference on Parallel and Distributed Processing Symposium (IPDPS'2004), pp. 82-92, Santa Fe, New Mexico, USA, April 2004 (**32% acceptance rate**)

- Prateek Shah, Nirmalya Roy, Abhishek Roy, Kalyan Basu, and Sajal K Das, "Design of PON using VQ - Based Fiber Optimization", in Proceedings of the 11th IEEE International Conference on Telecommunications, pp. 1303-1309, vol. 3124, Aug 2004 (**25% acceptance rate**)

Book Chapters and Editorials

- Mohammad Arif Ul Alam, Nirmalya Roy, Aryya Gangopadhyay, and Elizabeth Galik, "Infrequent Non-Speech Gestural Activity Recognition using Smart Jewelry: Challenges and Opportunities for Large Scale Adaptation," in Handbook of Large-scale Distributed Computing in Smart Healthcare, S. U. Khan, A. Y. Zomaya, and A. Abbas, Eds., pp. 443-471, Springer-Verlag, New York, USA, 2017
- Nirmalya Roy, Parisa Rashidi, Larry Holder, Liming Chen, Special issue on data mining in pervasive environments, Pervasive and Mobile Computing, pp. 151-152, Elsevier 2014
- Nirmalya Roy, Sajal K. Das and Christine Julien, "Resolving and Mediating Ambiguous Context in Pervasive Healthcare Environments", Smart Healthcare Applications and Services, Carsten Röcker et al (editors), Idea Group Publishing, IRM Press, 2010
- Nirmalya Roy and Sajal K. Das, "Managing Context Uncertainty in Smart Pervasive Environments", Designing Solutions-Based Ubiquitous and Pervasive Computing: New Issues and Trends, Milton Mendes et al (editors), Idea Group Publishing, IRM Press, 2009
- Sajal K. Das and Nirmalya Roy, "Learning, Prediction and Mediation of Context Uncertainty in Smart Pervasive Environments", OnTheMove to the Meaningful Internet Systems, R. Meersman et al (editors), Lecture Notes in Computer Science 5333, Nov. 2008, pp. 820-829
- Nirmalya Roy, Abhishek Roy, Kalyan Basu and Sajal K. Das "A Reinforcement Learning Framework for Location-Aware Resource Management in Multi-Inhabitant Smart Homes", From Smart Homes to Smart Care, Sylvain Giroux et al(editors), IOS Press, July 2005, pp.180-187

Other Refereed Conferences and Workshops

- Md. Abdullah Al Hafiz Khan, Sheung Lu, Nirmalya Roy, and Nilavra Pathak, "Demo Abstract: A Microphone Sensor based System for Green Building Applications", in Proc. IEEE International Conference on Pervasive Computing and Communications (PerCom), Saint Louis, USA March 2015.

- Joseph Taylor, Nirmalya Roy, David Kleinschmidt, and Behrooz Shirazi, "Demo Abstract: Performance of the Latest Generation Powerline Networking for Green Building Applications," in Proceedings of the 5th ACM Workshop on Embedded Systems for Energy-Efficient Buildings, (BuildSys), Rome, Italy, November 2013

- Nirmalya Roy, Christine Julien, Archan Misra and Sajal K. Das, "A Prototype for Resource Optimized Context Determination in Pervasive Care Environments," in Proceedings of the International Conference on Mobile Computing, Applications, and Services (MobiCASE: Demonstrations Track), October 2009.

- Nirmalya Roy, Christine Julien and Sajal K. Das, "Resolving and Mediating Ambiguous Contexts for Pervasive Care Environments," in Proceedings of the IEEE International Conference on Mobile and Ubiquitous Systems: Networking and Services (MobiQuitous 2009: Poster Paper), July 2009.

- Nirmalya Roy and Sajal K. Das, "Context-aware Learning, Prediction and Resource Management in Smart Pervasive Environments", in Proceedings of the IEEE International Conference on Pervasive Computing (PerCom 2008: Google PhD Forum), March 2008.

- Nirmalya Roy and Sajal K. Das, "A Context-Aware Learning, Prediction and Mediation Framework for Resource Management in Pervasive Environments", in Proceedings of the ACM SIGMOBILE USENIX International Conference on Mobile Systems, Applications and Services (MobiSys: PhD Forum), Colorado, June 2008.

- Nirmalya Roy and Sajal K. Das, "Quality-Assured Ambiguous Contexts Mediation Framework for Smart Healthcare Applications", in Proceedings of the ACM SIGMOBILE USENIX International Conference on Mobile Systems, Applications, and Services (MobiSys: WIP Session), Colorado, June 2008.

- Preetam Ghosh, Nirmalya Roy, and Sajal K. Das "Mobility-based Cost-effective Job Scheduling in an IEEE 802.11 Mobile Grid Architecture," in Proceeding of the First International Workshop on Context-Awareness and Mobility in Grid Computing (WCAMG), co-located with CCGrid'2007 (**34% acceptance rate**)

Non-Peer-Reviewed Works

- Nirmalya Roy, "A Cross-Domain Machine Learning Framework for Pervasive Sensing", IEEE PerCom 4th International Workshop on Mobile and Pervasive Internet of Things (PerIoT), March 2020 (**Keynote talk**)
- Nirmalya Roy, "Wearable & IoT for Cognitive Health Assessment: Significance and Challenges", IEEE PerCom Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), March 2017 (**Keynote talk**)
- Nirmalya Roy, "Green Building Energy Analytics: Challenges and Opportunities", IEEE PerCom Workshop on Pervasive Energy Services (PerEnergy), 292-292, March 2015 (**Keynote talk**)
- Nirmalya Roy, "Scalable Activity Recognition for Smart Health", NSF Smart and Connected Health (SCH) Aspiring Investigators Workshop, June 2015
- Nirmalya Roy, "Automated Functional and Behavioral Health Assessment of Older Adults with Dementia", NSF CISE Career 2015 workshop, March 2015
- Nirmalya Roy, Parisa Rashidi, Larry Holder, and Liming Chen. Editorial: Special Issue on Data Mining in Pervasive Environments, Pervasive and Mobile Computing, 151-152, Elsevier 2014
- Nirmalya Roy and Kevin Brooks "Usability of Semantic Web for Enhancing Digital Living Experience" Motorola Technical Report 2007

Patents and Entrepreneurship

- Nirmalya Roy, Sajjad Hossain and Arif Alam, "Scalable Activity Recognition for Independent Living Applications" UMBC Ref. No. 2015-004
- NSF I-Corps Grant Winner, Fall 2015

Presentations

Conference/Workshop/Poster Presentations

- Contactless Physiological Health Sensing: Challenges, Solutions & Opportunities, UMD RoboScout DTC Selfish Workshop, Jan 2024
- RobSenCom: A Middleware to Improve the Connectivity between Heterogeneous Robots and IoT, NSF CSR PI Meeting, Durham, NC, USA Oct 2023
- Unsupervised spatio-temporal anomalous thermal behavior monitoring of inside-built environments, IEEE DCOSS-IoT, Cyprus, June 2023
- (Invited Talk) A Cross-Domain Machine Learning Framework for Scalable Human Activity and Behavior Recognition, 12th ACM/IEEE International Conference on COMmunication Systems & NETworkS (COMSNETS), Bangalore, India, January 2020
- "CAREER: Scalable and Adaptable Cross-Domain Autonomous Health Assessment" NSF Computer Systems Research PI Meeting, November 2019
- "Automated Functional and Behavioral Health Assessment of Older Adults" NSF Smart and Connected Health PI Meeting, September 2018
- Automated Functional and Behavioral Health Assessment of Older Adults: Challenges in the Field/Deployment, Mini-Workshop: Exploring New Uses for Unobtrusive Environmental Sensors in Healthcare, NSF Smart and Connected Health PI Meeting, September 2018
- "AI + IoT + ML for Innovative Smart Computing Applications", George Mason University, September 2018
- "A Cross-Domain IoT Framework for Human Activity and Behavior Recognition", ACM 7th International Workshop on Computing and Networking for IoT and Beyond (ComNet-IoT 2018), Varanasi, India, Jan 2018
- "Physiological Health Assessment", DARPA Proposer Day, Arlington, Virginia, June 2017
- "COAR: Collaborative and Opportunistic Human Activity Recognition", IEEE DCOSS, Ottawa, Canada, June 2017
- "Distributed Data Analytics for Real-Time Monitoring and Detection of Flash Floods in Smart City", NSF CSR PI Meeting, Orlando, June 2017
- "Scaling Human Activity Recognition Via Deep Transfer Learning", UMBC-USNA Research Symposium, Annapolis, MD, April 2017
- "TransAct: Transfer learning enabled activity recognition", IEEE First International Workshop on Pervasive Smart Living Spaces (PerLS), Hawaii, USA, March 2017
- "Wearable & IoT for Cognitive Health Assessment", Invited Speaker & Panelist, Technology and Dementia Pre-Conference Event, Alzheimer's Association International Conference (AAIC), Toronto, July 2016
- "CACE: Exploiting Behavioral Interactions for Improved Activity Recognition in Multi-Inhabitant Smart Homes", IEEE ICDCS, Nara, Japan, June 2016
- "Automated Functional and Behavioral Health Assessment of Older Adults with Dementia", UMBC-UMB Partnership Symposium, UMB's downtown Baltimore Campus, June 2016
- IEEE SmartSys 2016 workshop Co-Chair & Keynote Session Chair, St. Louis, USA, May 2016
- IEEE PerCom 2016 PhD Forum Panelist, Sydney, Australia, March 2016
- "AARPA: Combining Mobile and Power-line Sensing for Fine-grained Appliance Usage and Energy Monitoring", IEEE MDM, Pittsburgh, May 2015

- "Monitoring Patient Recovery using Wireless Physiotherapy Devices", ICOST 2014, Denver, CO, June 2014
- "Immersive Physiotherapy: Challenges for Smart Living Environments and Inclusive Communities" ICOST 2014, Denver, CO, June 2014
- "An Energy-Efficient Quality Adaptive Framework for Multi-Modal Sensor Context Recognition", PerCom 2011, Seattle, USA
- "Quality-of-Inference Aware Context Determination", IEEE PerCom 2009, PhD forum, Galveston, USA
- "A Context-Aware Learning, Prediction and Mediation Framework for Resource Management in Smart Pervasive Environments", ACM MobiSys 2008, Colorado, USA
- "Context-Aware Learning, Prediction and Resource Management in Smart Pervasive Environments", IEEE PerCom 2008, Hong Kong, China
- "A Reinforcement Learning Framework for Location-Aware Resource Management in Multi-Inhabitant Smart Homes", ICOST 2005, Quebec, Canada
- "A Cooperative Learning Framework for Mobility-Aware Resource Management in Multi-Inhabitant Smart Homes", Mobiquitous 2005, San Diego, CA
- "Enhancing Availability of Grid Computational Services to Ubiquitous Computing Applications", IPDPS 2005, Denver, CO

Other Professional Presentations

Lectures

- Tutorial: Contactless Physiological Health Sensing: Challenges, Solutions and Opportunities, IEEE SmartComp2024, Osaka, Japan, June 2024
- "AI + IoT + ML for Innovative Smart Computing Applications", Colorado School of Mines, August 2021
- "Multi-modal Sensing, Cross-Domain Modeling and Community Deployments in Smart Environments", Army Research Lab Seminar, Adelphi, MD July 23, 2020
- "IoT for Longitudinal Health Monitoring and Assessment", THINK GLOBALLY ACT LOCALLY UMBC-Italy Cooperation Meeting, UMBC, April 2018
- "Journey of my CAREER Award", UMBC CAREER workshop for Junior Faculty, March 2018
- "Deep Data Analytics for Detecting Abnormal Human Behavior in Public Spaces" DARPA Proposer Day, Arlington, Virginia, July 2015
- "Scalable Smart Home Activity Recognition Technologies", bwtech@UMBC, Technology Catalyst Fund, May 2015
- "Job Search Resources and Tips", Information Systems Department, UMBC, April 2015
- "AI/KM PhD Student Research Seminar", Information Systems Department, UMBC, October 2014
- "Energy Education through Green Buildings", Constellation Visit, UMBC, January 2014
- "Usability of Semantic Web for Enhancing Digital Living Experience", Motorola Labs (Lowell, MA), Aug 2007
- "PhD Research Goals and Challenges" Sun Microsystem (Santa Clara, CA), September 2006

Keynotes & Invited Talks

- Invited Talk: "Developing a Robust Data-Driven System for Contactless Physiological Health Sensing under Stochastic Data Noises", School of Mobile Computing and Communication, Jadavpur University, Kolkata, India, March 2024
- Invited Talk: "A Self-Orchestration Framework for Resilient Sensing, Communication & Autonomy in Contested Environments", IEEE/ACM NSySs. December 2021, Dhaka, Bangladesh

- Keynote Talk: "A Cross-Domain Machine Learning Framework for Pervasive Sensing", IEEE PerIoT, March 2020, Austin, USA
- Keynote Talk: "Wearable & IoT for Cognitive Health Assessment: Significance and Challenges", IEEE WristSense, March 2017, Hawaii, USA
- Keynote Talk: "May I live Independently with IoT and Machine learning?", IEEE ICCTIDE 2016, National Engineering College, Kovilpatti, Tamil Nadu, India, January 2016
- Keynote Talk: "Green Building Energy Analytics: Opportunities and Challenges", IEEE PerEnergy 2015 workshop in conjunction with IEEE PerCom 2015, Saint Louis, Missouri, USA, March 2015
- Keynote Talk: "Green Building Energy Analytics", ICECCS 2014, NITK Surathkal, Mangalore, India December 2014

Colloquia

- "A Cross-Domain IoT Framework for Human Activity and Behavior Recognition", National Institute of Technology, Durgapur, India, July 2018
- "May I live Independently with IoT and Machine learning?", TCS Innovation Research Lab, Kolkata, India, January 2016
- "May I live Independently with IoT and Machine learning?", Indian Statistical Institute (ISI), Kolkata, India, January 2016
- "Quality- and Energy-Sensitive Determination of Multiple Contexts in Pervasive Computing Environments", IIT Kharagpur, India, May 2013
- "Quality Adaptive Models and Middleware for Situation Recognition in Pervasive Healthcare: Data Analytics Tools and Techniques", Rochester Institute of Technology, March 2013
- "Quality Adaptive Models and Middleware for Situation Recognition in Pervasive Healthcare: Data Analytics Tools and Techniques", University of Maryland at Baltimore County, March 2013
- "Quality- and Energy-Sensitive Determination of Multiple Contexts in Pervasive Computing Environments", Colorado School of Mines, Feb 2013
- "Quality Adaptive Models and Middleware for Situation Recognition in Pervasive Healthcare: Data Analytics Tools and Techniques", University of North Carolina at Charlotte, Feb 2013
- "An Energy Efficient Quality Adaptive Multi-Modal Sensor Framework for Context Recognition", IEEE Calcutta Section, India October 2011
- "Resolving and Mediating Ambiguous Contexts in Pervasive Health Care Environments: Computational Tools and Techniques", University of Texas El Paso, ECE Department, March 2011
- "Resolving and Mediating Ambiguous Contexts in Pervasive Health Care Environments: Computational Tools and Techniques", Institute for Infocomm Research (I2R), Singapore April 2010
- "Resolving and Mediating Ambiguous Contexts in Pervasive Health Care Environments: Computational Tools and Techniques", Michigan Technological University, May 2009
- "Resolving and Mediating Ambiguous Contexts for Pervasive Health Care Environments", Korean Advanced Institute of Science and Technology (KAIST), April 2009
- "Resolving and Mediating Ambiguous Contexts for Pervasive Health Care Environments", University of Southern Mississippi, April 2009
- "Resolving and Mediating Ambiguous Contexts for Pervasive Health Care Environments", University of Alberta, Feb 2009
- "A Mathematical Framework for Managing Context Uncertainty in Smart Pervasive Environments", ExxonMobil Research & Engineering, New Jersey, Aug 2008
- "A Middleware Framework for Ambiguous Context Determination and Mediation in Pervasive Care Environments", University of Texas at Austin, ECE Department, June 2008

- "A Framework for Ambiguous Context Determination and Mediation in Pervasive Health Care Environments", Kansas State University (KSU), May 2008

Media Activities

- "Mobile, Pervasive and Sensor Computing (MPSC) Lab Research Overview", Deloitte Delegates, UMBC October 2013 [Interview excerpts were published in the Wall Street Journal, July 2014]

Media Coverage

- **WJZ TV News.** Maryland Schools Working with Army on The Future Of AI**,** May 26, 2021
- **Baltimore Business Journal News.** U.S. Army Research Lab and two Md. universities launch $68M robotics and AI partnership, May 26, 2021
- **UMBC News.** UMBC to partner with UMD, Army Research Lab to advance AI and autonomy through $68M collaboration, May 26, 2021
- **Maryland Today News.** UMD, UMBC, Army Research Lab Announce $68M Cooperative Agreement to Accelerate AI, Autonomy, May 26, 2021
- **UMBC News.** UMBC offers new Research Experiences for Undergraduates in smart computing, big data, March 25, 2021
- **Earth.com News.** Floodbot uses social media to issue flash flood warnings, September 23, 2020
- **Yahoo News.** Flood Bot Program Uses Social Media to Alert Ellicott City Residents to Potential Flooding, September 21, 2020
- **WJZ-TV -- CBS Baltimore News**. Flood Bot Program Uses Social Media to Alert Ellicott City Residents to Potential Flooding, September 21, 2020
- **NSF's Tweet.** FloodBot, Sept 19, 2020
- **NSF Science Now video release.** FloodBot: Using sensors and social media to alert residents of dangerous flash floods September 16, 2020
- **NSF Research News.** Flood Bot: Scientists develop new flood warning sensors July 13, 2020
- **UMBC News.** Flood Bot: UMBC researchers expand flood warning work in Ellicott City, June 30, 2020
- Automated dance teacher tells you when your moves are wrong, **New Scientist**, March 2, 2018
- **The White House Press** Release on Smart Cities Initiative (NSF sponsored GCTC project on Flash Flood Monitoring in Maryland), September 26, 2016
- NSF commits more than $60 million to Smart Cities Initiative (Global City Team Challenge project on Flash Flood Monitoring in Maryland), September 26, 2016
- UMBC prof from Ellicott City developing flood-warning system, **The Daily Record**, Maryland News, September 9, 2016
- UMBC researchers will combine sensors and social media to develop new flash flood alert system, Research at **UMBC News**, September 6, 2016
- UMBC Formalizes Research Partnership with U.S. Naval Academy, Research at UMBC News, May 2015
- Constellation Awards E2 Energy to Educate Grant to UMBC's Information Systems Department, UMBC's Giving Blog, April 21, 2015
- UMBC-UMB Partnership Awards a Catalyst for Collaboration, Research at UMBC News, Feb 17, 2015
- UMBC and UMB celebrate research partnerships with symposium and innovation grants, UMBC News, Feb 12, 2015

- Using Sensor Technology to Lower Elder Care Costs, **The Wall Street Journal**, July 28, 2014
- COEIT Uses Constellation Energy's Education Award For Undergraduate Research, UMBC Insights, March 27, 2014
- **CNBC News** on Constellation Energy Education project, Exploring new ways of reducing power demand in household appliances. Several other press releases available at Campus Technology News; Yahoo Finance; Electric Energy Online; Broadwayworld; Business Wire; Market Watch News etc. Nov. 2013
- Movement sensor's feedback acts as physical therapist, **WSU News**, July 30, 2013
- WSU Smart Environments Summer REU Explores Green Living and Healthcare Applications, WSU News, July 11, 2013
- Undergrad researchers succeed with the smart plug work, WSU News, August 12, 2013
- WSU Smart Environments Summer REU Explores Green Living and Healthcare Applications, WSU News, July 11, 2013

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITE AND PROFESSION

Departmental Service

- Graduate: IS on campus
  - 2021-22
  - 2022-23
- Mentoring and Retention Roundtable
  - 2021-22
  - 2022-23
- Liaison for Research Innovation, IS, UMBC
  - 2020-21
- Department Graduate Program Director, IS, UMBC
  - 2019-2020
- Departmental Faculty Search Committee, UMBC
  - 2015-16 (AI & KM)
  - 2016-17 (AI & KM)
  - 2017-18 (Health IT)
  - 2018-19 (AI & KM, Open Rank)
  - 2023-24 (HCC, AI, Data Science, Software Engineering, Computer Education, Open Rank)
  - 2024-25 (HCC, Business Analytics, Open Rank (2))
- Departmental Research Committee, UMBC
  - 2014-15
  - 2016-17
  - 2017-18
- Departmental Research Committee Chair, UMBC
  - 2018-19
  - 2020-21
- Department Merit Review Committee
  - 2018-19

University Service

- Graduate Council. 2022-25
- P&T Reconsideration Faculty Review Committee. 2019-21
- UMBC IS Department Chair Search Committee, 2018-19

- UMBC Climate Action Advisory Group, UMBC, 2015-16
- UMB-UMBC Review Panel

Professional Service

General Chair

- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2025**

Program chair

- Special Session 9: REU Symposium for Undergraduate Research in Data Science, Systems, and Security with IEEE ICMLA 2023 conference: **2023**
- NSF/TIH PI Meeting and Workshop for Indo-US Research Collaboration, Baltimore, May 22-23, **2023**
- ACM International Conference on Distributed Computing and Networking (ICDCN): **2022**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2020**
- IEEE National Symposium for NSF REU Research in Data Science, Systems, and Security with IEEE BigData conference: **2021**
- Special Session on NSF Funding Opportunities in Smart Service Systems and other Innovation Programs in conjunction with First IEEE Workshop on Smart Service Systems (SmartSys 2016), May **2016**
- Special Session on Green Building Energy Analytics 2014 in conjunction with International Green Computing Conference (IGCC), November **2014**

Program co- chair

- ACM First International Workshop on Smart Sensing: From IoT to Ambient (SmartSensing) 2020 co-located with ACM ICDCN 2020
- IEEE PerCom Workshop 2019
- ACM ICDCN Workshop 2018, 2019
- Minitrack: Multi-criteria Decision Analysis and Support Systems under Decision Analytics, Mobile Services and Service Science, Hawaii International Conference on System Sciences – HICSS-52, Jan **2019**
- 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC), October **2018**
- Fourth IEEE Workshop on Smart Service Systems (SmartSys) in conjunction with International Conference on Smart Computing (SmartComp), June **2019**
- Third IEEE Workshop on Smart Service Systems (SmartSys) in conjunction with International Conference on Smart Computing (SmartComp), June **2018**
- Second IEEE Workshop on Smart Service Systems (SmartSys) in conjunction with International Conference on Smart Computing (SmartComp), May **2017**
- First IEEE Workshop on Smart Service Systems (SmartSys) in conjunction with International Conference on Smart Computing (SmartComp), May **2016**

Program vice-chair

- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2024**
- Green Communications and Computations track in 11th IEEE Consumer Communications and Networking Conference (CCNC), Jan. **2014**

Publicity Chair

- IEEE International Conference on Wearable and Implantable Body Sensor Networks (BSN): **2018**
- ACM International Conference on Distributed Computing and Networking (ICDCN): **2017**
- IEEE International Green and Sustainable Computing Conference (IGSC): **2016**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2016**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2016**
- ACM International Conference on Distributed Computing and Networking (ICDCN): **2016**

- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2015**
- IEEE International Green and Sustainable Computing Conference (IGSC): **2015**
- IEEE International Green Computing Conference (IGCC): **2014**
- IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM): **2013**
- ACM International Conference on Distributed Computing and Networking (ICDCN): **2013**
- IEEE International Workshop on Cyber Physical Systems: Integration of Cloud, Mobility and Sensing (CaPSICuMS): **2011**

Program Committees (Main Conference, workshop, poster, and demo session)

- IEEE International Conference on Communications (ICC): **2024**
- IEEE/ACM Conference on Connected Health: Applications, Systems & Engineering Technologies (CHASE): **2022, 2023, 2024**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2024**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2024**
- IEEE Consumer Communications and Networking Conference (CCNC): **2024**
- The 8th National Workshop for REU Research in Networking and Systems (REUNS): **2023**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2023**
- 19th International Conference on Intelligent Environments (IE): **2023, 2024**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2023**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2022**
- IEEE International Conference on Wearable and Implantable Body Sensor Networks (BSN): **2022**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2022**
- 18th International Conference on Intelligent Environments (IE): **2022**
- IEEE Consumer Communications and Networking Conference (CCNC): **2022**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2021**
- IEEE 7th International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), **2021**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2021**
- IEEE 6th International workshop on Pervasive Health Technologies (PerHealth): **2021**
- IEEE International Workshop on Context and Activity Modeling and Recognition (CoMoRea): **2021**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2020**
- IEEE 7th International Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense), **2020**
- IEEE First International Workshop on Distributed and Intelligent Computing at the Edge (DICE) co-located with DCOSS 2020
- IEEE First International Workshop on Pervasive Smart Living Spaces (PerLS): **2019**
- IEEE International Workshop on Context and Activity Modeling and Recognition (CoMoRea): **2019**
- ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys): **2019**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2019**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2019**
- IEEE International Conference on Wearable and Implantable Body Sensor Networks (BSN): **2019**
- ACM International Conference on Distributed Computing and Networking (ICDCN), Workshop Co-Chair: **2019**
- ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys): **2018**
- IEEE International Green and Sustainable Computing Conference (IGSC): **2018**
- 14th International Conference on Intelligent Environments (IE): **2018**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2018**
- IEEE International Conference on Computer Communication and Networks (ICCCN), Track: Social Networks and Computing: **2018**
- IEEE International Workshop on Pervasive Flow of Things (PerFoT): **2018**
- IEEE International Workshop on Context and Activity Modeling and Recognition (CoMoRea): **2018**

- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2018**
- IEEE International Conference on Wearable and Implantable Body Sensor Networks (BSN): **2018**
- ACM International Conference on Distributed Computing and Networking (ICDCN), Workshop Co-Chair: **2018**
- ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys): **2017**
- IEEE International Conference on Computer Communication and Networks (ICCCN), Track: Social Networks and Computing: **2017**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2017**
- IEEE International Conference on Mobile Data Management (MDM): **2017**
- IEEE Workshop on the Internet of Things: Smart Objects and Services (IoT-SoS): **2017**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2017**
- IEEE First International Workshop on Pervasive Smart Living Spaces (PerLS): **2017**
- IEEE Third International Workshop on Pervasive Energy Services (PerEnergy): **2017**
- 14th International Conference on Mobile Systems and Pervasive Computing (MobiSPC): Track Smart Communities and Ubiquitous Systems, **2017**
- ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys): **2016**
- ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys Poster & Demo): **2016**
- IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS): **2016**
- IEEE International Conference on Smart Computing (SMARTCOMP): **2016**
- IEEE International Conference on Mobile Data Management (MDM): **2016**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2016**
- IEEE International Workshop on Managing Ubiquitous Communications and Services (MUCS): **2016**
- IEEE Workshop on Pervasive Energy Services (PerEnergy): **2016**
- IEEE International Conference on Pervasive Computing and Communications Demonstrations (PerCom Demos): **2016**
- IEEE International Workshop on Smart Environments: Closing the Loop (SmartE): **2015**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2015**
- International Conference on Digital Health co-located with World Wide Web Conference (WWW): **2015**
- International Conference on Orange Technologies (ICOT): **2015**
- 24th International World Wide Web Conference Poster Session (WWW): **2015**
- International Workshop on Smart Medical Devices - from Lab to Clinical Practice (SmartMedDev): **2015**
- IEEE Workshop on. Managing Ubiquitous Communications and Services (MUCS): **2015**
- IEEE International Green and Sustainable Computing Conference (IGSC): **2015**
- IEEE Workshop on the Internet of Things: Smart Objects and Services (IoT-SoS): **2015**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2014**
- IEEE International Green Computing Conference (IGCC): **2014**
- IEEE International Conference on Smart Computing (SmartComp): **2014**
- IEEE Workshop on. Managing Ubiquitous Communications and Services (MUCS): **2014**
- International Conference on Smart Homes, Assistive Technology and Health Telematics: Advances in Cognitive Technologies (ICOST): **2014**
- IEEE International Workshop on Mobility Management and Mobile Middleware (MobiMMWare): **2014**
- ACM UbiComp International Workshop on Smart Health Systems and Applications (SmartHealthSys): **2014**
- IEEE Workshop on the Internet of Things: Smart Objects and Services (IoT-SoS): **2014**
- ACM UbiComp International Workshop on recent advances in behavior prediction and pro-active pervasive computing (AwareCast): **2014**
- Workshop on Complex Network Dynamics: Cross-Disciplinary Tools for Modeling, Analysis, and Design (CoNeD): **2014**
- The 11th International Conference on Mobile Systems and Pervasive Computing (MobiSPC): **2014**
- 9th Workshop on Artificial Intelligence Techniques for Ambient Intelligence (AITAmI): **2014**
- ACM International Workshop on recent advances in behavior prediction and pro-active pervasive computing (AwareCast): **2013**

- IEEE International Conference on Distributed Computing Systems (ICDCS): **2013**
- IEEE International Conference on Green Computing and Communications (GreenCom): **2013**
- 11th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC): **2013**
- International Workshop on Information Quality and Quality of Service for Pervasive Computing: **2012**
- IEEE International Conference on Distributed Computing Systems (ICDCS): **2012**
- IEEE International Conference on Networks (ICON): **2012**
- International Workshop on Computing and Networking for Internet of Things (CoMNet-IoT): **2012**
- International Conference on Intelligent Environments (IE): **2012**
- 6th International Conference on Multimedia and Ubiquitous Engineering (MUE): **2012**
- IEEE International Conference on Advances in Computing, Communications and Informatics (ICACCI): **2012**
- IEEE International Conference on Distributed Computing Systems (ICDCS): **2011**
- IEEE International Conference on High Performance Computing (HiPC): **2011**
- International Conference on Communication Systems and Networks (COMSNET): **2011**
- International Workshop on Information Quality and Quality of Service for Pervasive Computing: **2011**
- IEEE International Conference on Computational Problem-Solving (ICCP): **2011**
- IEEE International Conference on Networks (ICON): **2011**
- International Workshop on Cyber Physical Systems: Integration of Cloud, Mobility and Sensing (CaPSICuMS): **2011**
- International Conference on Pervasive and Embedded Computing and Communication Systems (PECCS): **2011**
- IEEE Consumer Communications and Networking Conference (CCNC): **2011**
- International Conference on Sensor Technologies and Applications (SENSORCOMM): **2011**
- IEEE International Conference on High Performance Computing (HiPC): **2010**
- IEEE International Conference on Pervasive Computing and Communications (PerCom): **2010**
- International Workshop on Information Quality and Quality of Service for Pervasive Computing: **2010**
- International Conference on Sensor Technologies and Applications (SENSORCOMM): **2010**
- IEEE Consumer Communications and Networking Conference (CCNC): **2010**
- IEEE International Workshop on Smart Environments (SmartE): **2010**
- International Conference on Sensor Technologies and Applications (SENSORCOMM): **2009**
- IEEE Consumer Communications and Networking Conference (CCNC): **2009**
- International Conference on Parallel and Distributed Systems (ICPADS): **2009**
- International Conference on Future Information Networks (ICFIN): **2009**
- International Conference on the Latest Advances in Networks (ICLAN): **2009**
- International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM): **2009**
- International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM): **2008**

Session Chair

- IEEE First International Workshop on Pervasive Smart Living Spaces (PerLS): **2017**
- IEEE International Conference on Mobile Data Management (MDM): **2015**
- IEEE International Green Computing Conference (IGCC): **2014**
- IEEE Consumer Communications and Networking Conference (CCNC): **2011**
- IEEE Consumer Communications and Networking Conference (CCNC): **2010**
- IEEE Consumer Communications and Networking Conference (CCNC): **2009**
- ACM Workshop on Medical-grade Wireless Networks (WiMD) co-located with ACM MobiHoc: **2009**

Panel Member & Moderator

- The Need and Research Roadmap for Mission Critical IoTs, Panelist, IEEE MILCOM Workshop on the IoT for Adversarial Environments, Washington DC, Oct 2024

- NSF-JST Workshop on Secure and Resilient Smart Living CPS Panel: Is AI a Blessing or Curse in Creating a Smarter Society? Panel Moderator, Osaka, Japan, June 2024
- Role of AI in Network Health Applications: Trends and Challenges, ACM COMSNETS 2024 NetHealth workshop, Panel Moderator, Bangalore, India, Jan 2024
- MeitY-NSF Panel: International Collaboration: Challenges and Opportunities, Panelist, New Delhi, India, Nov 2023
- MeitY-NSF Research Collaboration workshop Intelligent Transportation Systems, Nov 2023, Session Moderator, New Delhi, India, Nov 2023
- Networking for AI and AI for Networking, Panelist, IEEE MILCOM Workshop on the IoT for Adversarial Environments, Bethesda, Maryland, Dec 2022
- Technology and Dementia at AAIC 2016 Conference, Panel Session: Wearables/Mobile/Internet-of-Things. 2016
- Data Analytics on IoT: Applications, Impacts and Vulnerabilities, ICDCN 2018 Workshop Panel Moderator

Editorial Boards and Guest

Editor

- Guest Editor: Pervasive and Mobile Computing Journal Special Issue on Selected papers from PerCom 2024, Elsevier: **2024**
- Area Editor: Pervasive and Mobile Computing Journal, Elsevier: **2013 to present**
- Guest Editor: Pervasive and Mobile Computing Journal Special Issue on Selected papers from SMARTCOMP 2020, Elsevier: **2021**
- Guest Editor: Pervasive and Mobile Computing Journal Special Issue on Data Mining in Pervasive Environments, Elsevier: **2014**
- Guest Editor: Pervasive and Mobile Computing Journal Special Issue on Big Data Analytics for Smarter Health Care, Elsevier: **2015**
- Guest Editor: IEEE Transactions on Big Data Journal Special Issue on Big Data in Ubiquitous Computing, IEEE: **2017**

External PhD Thesis Reviewer:

- University of Perugia & University of Florence, Dept. of Computer Science & Mathematics, Italy, **Fall 2023**
- University of Milan, Dept. of Computer Science, Italy, **Spring 2023**
- Indian Institute of Technology (IIT) Kanpur: Department of Electrical Engineering, **Fall 2015, Fall 2018**
- Indraprastha Institute of Technology (IIIT) Delhi: Department of Computer Science and Engineering, **Spring 2019**

Additional Reviewer & Participant

- ARL Proposal Reviewer 2023
- CCC US Robotics Roadmap Workshop at University of Pennsylvania, Sept 2023
- Alzheimer's Association Panel, 2018
- NSF Panels: **2013 (CISE), 2014 (CISE), 2015 (CISE), 2016 (CISE + ENG), 2017 (ENG + CISE+ CPS), 2020 (CIVIC), 2021 (CISE Ad hoc), 2022 (TCUP + STC Ad hoc)**
- National Defense Science and Engineering Graduate (NDSEG) Fellowship Panel: **2015, 2017, 2018**
- Conference Reviewer: ACM Mobicom, IEEE VTC, ICDCS, ICON, ICPP, GlobeCom, HiPC, MSWiM, SECON, WoWMoM etc.
- Journal Reviewer: IEEE Transaction on Mobile Computing, Parallel and Distributed Systems, Networking, Elsevier Ad Hoc Networks, Elsevier's Pervasive and Mobile Computing, IEEE Journal of Selected Areas of

Communication (JSAC), Elsevier's Journal of Parallel and Distributed Computing (JPDC), WiNET etc.

Teaching

Teaching at the University of Maryland, Baltimore County

- **IS 709/809: Computational Methods in IS Research** (Fall 2024), Graduate Core

- **Fall 2023: Sabbatical**
- **IS 698/800: Smart Home Health Analytics** (Spring 2023), 10 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2022), 16 students, Graduate Core
- **IS 698/800: Smart Home Health Analytics** (Spring 2022), 9 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2021), 17 students, Graduate Core
- **IS 733: Data Mining** (Spring 2021), 19 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2020), 13 students, Graduate Core
- **IS 698/800: Smart Home Health Analytics** (Spring 2020), 11 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2019), 12 students, Graduate Core
- **IS 698/800: Smart Home Health Analytics** (Spring 2019), 14 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2018), 15 students, Graduate Core
- **IS 698/800: Smart Home Health Analytics** (Spring 2018), 13 students, Graduate Elective

- **IS 709/809: Computational Methods in IS Research** (Fall 2017), 16 students, Graduate Core
- **IS 698/800: Smart Home Health Analytics** (Spring 2017), 30 students, Graduate Elective

- **IS 698/800: Smart Home Health Analytics** (Fall 2016), 21 students, Graduate Elective, *Constellation Energy Education Award 2016: $25,000.00 (End)*
- **IS 709/809: Computational Methods in IS Research** (Spring 2016), 8 students, Graduate Core, *Constellation Energy Education Award 2016: $25,000.00 (Start)*

- **IS 450/650: Data Communication and Networks** (Fall 2015), 40 students, Undergraduate Core and Graduate Elective, *Constellation Energy Education Award 2015: $45,000.00 (End)*
- **IS 450/650: Data Communication and Networks** (Spring 2015), 40 students, Undergraduate Core and Graduate Elective, *Constellation Energy Education Award 2015: $45,000.00 (Start)*

- **IS 450/650: Data Communication and Networks** (Fall 2014), 40 students, Undergraduate coreand Graduate Elective, *Constellation Energy Education Award 2014: $45,000.00 (End)*
- **IS 709/809: Computational Methods in IS Research** (Spring 2014), 16 students, Graduate Core, *Constellation Energy Education Award 2014: $45,000.00 (Start)*

Teaching at Washington State University, Pullman

- **CptS 223: Advanced Data Structures** (Spring 2013), 60 students, Undergraduate Core

- **CptS 555/EE 555: Computer Communication Networks** (Spring 2013), 30 students, Graduate Elective
- **CptS 122: Data Structures** (Fall 2012), 130 students, Undergraduate Core
- **CptS 223: Advanced Data Structures** (Spring 2012), 60 students, Undergraduate Core

Other Teaching Activities

- Graduate Teaching Assistant, 2002 – 2008, University of Texas at Arlington, Best Graduate Teaching Assistant Award 2007

AFFILIATIONS

- Institute of Electrical and Electronic Engineers (IEEE), Member
- Association of Computing Machinery (ACM), Member

CERTIFICATION STATEMENT

This is to certify that the information above is accurate – Nirmalya Roy

Updated: Nov 30, 2024

CURRICULUM VITAE

HOUBING HERBERT SONG

EDUCATION

Ph.D.	2012	University of Virginia, Electrical Engineering
M.S.	2006	University of Texas at El Paso, Civil Engineering
M.S.	2004	Xi'an Jiaotong University, Control Theory and Control Engineering
B.S.	2001	Xi'an Polytechnic University, Automation

Experience in Higher Education

Mar. 2023 – present US National Science Foundation (NSF) Industry-University Cooperative Research Center (IUCRC) for Aviation Big Data Analytics (Planning), Founding Center Director

Feb. 2023 – present US Department of Transportation (DOT) Tire 1 UTC Transportation Cybersecurity Center for Advanced Research and Education (CYBER-CARE), Associate Director (Leadership)

Jan. 2023 – present University of Maryland, Baltimore County, Associate Professor, Information Systems

Jul. – Dec. 2022 Embry-Riddle Aeronautical University, Associate Professor, Electrical Engineering and Computer Science

Aug. 2017 – Jun. 2022 Embry-Riddle Aeronautical University, Assistant Professor, Electrical Engineering and Computer Science

Aug. 2014 – Aug. 2017 West Virginia University, Assistant Professor, Electrical and Computer Engineering

Feb. 2013 – Aug. 2017 West Virginia Center of Excellence for Cyber-Physical Systems, Founding Center Director

Aug. 2012 – Aug. 2014 West Virginia University, Visiting Assistant Professor, Electrical and Computer Engineering

Experience in Other than Higher Education

2025 Co-Editor-in-Chief, IEEE Transactions on Industrial Informatic

2024 Scottish Informatics and Computer Science Alliance (SICSA), Distinguished Visiting Fellow

May – Jul. 2022 Air Force Office of Scientific Research (AFOSR), Summer Faculty Fellow

May – Jul. 2021 Air Force Research Laboratory/Information Directorate (AFRL/RI), Visiting Faculty Research Fellow

Nov. 2019 United States Special Operations Command (USSOCOM), AI and Counter Cyber for Autonomous Unmanned Collective Control Subject Matter Expert (SME)

Jul. – Aug. 2018 Air Force Research Laboratory/Information Directorate (AFRL/RI), Visiting Faculty Research Fellow

Jan. – Aug. 2007 Texas A&M Transportation Institute, Engineering Research Associate

Honors Received

2024 IEEE Computer Society Distinguished Visitor
2024 IEEE Intelligent Transportation Systems Society (ITSS) Distinguished Lecturer
2024 IEEE Communications Society (ComSoc) Distinguished Lecturer
2024 International Artificial Intelligence Industry Alliance (AIIA) Fellow
2024 Research.com Ranking of Best Scientists in Computer Science
2024 Research.com Ranking of Best Scientists in Electronics and Electrical Engineering
2024 AI 2000 Most Influential Scholar Award Honorable Mention in Internet of Things
2023 **Highly Cited Researcher in the field of Computer Science**, Clarivate™
2023 World's Top 2% Scientists for both career-long impact and single year impact (compiled by John P.A. Ioannidis, Stanford University)
2023 Asia-Pacific Artificial Intelligence Association (AAIA) Fellow
2023 IEEE Systems Council Distinguished Lecturer
2023 IEEE Vehicular Technology Society (VTS) Distinguished Lecturer
2023 Research.com Ranking of Best Scientists in Computer Science
2023 Research.com Ranking of Best Scientists in Electronics and Electrical Engineering
2023 AI 2000 Most Influential Scholar Award Honorable Mention in Internet of Things
2023 2021 Harry Rowe Mimno Award, IEEE
2023 **Institute of Electrical and Electronics Engineers (IEEE) Fellow**
2022 **Association for Computing Machinery (ACM) Distinguished Member**
2022 Highly Cited Researcher in the field of Computer Science, Clarivate™
2022 Research.com Rising Star of Science Award
2022 World's Top 2% Scientists for both career-long impact and single year impact (compiled by John P.A. Ioannidis, Stanford University)
2022 Best Paper Award, IEEE INFOCOM 2022 Workshop on AI and Blockchain-Enabled Secure and Privacy-Preserving Air and Ground Smart Vehicular Networks (SVNs)
2022 College of Engineering Outstanding Research Award, Embry-Riddle Aeronautical University
2021 Highly Cited Researcher in the field of Cross-Field, Clarivate™
2021 World's Top 2% Scientists for both career-long impact and single year impact (compiled by John P.A. Ioannidis, Stanford University)
2021 Best EU-US Collaboration Award, NGI Explorers Program
2021 Best Paper Award, IEEE GLOBECOM 2021 Workshop on AI and Blockchain-Enabled Secure and Privacy-Preserving Air and Ground Smart Vehicular Networks (SVNs)
2021 Best of Track (BOT) Award, 40th Digital Avionics Systems Conference (DASC 2021)- Track: Special Topics & Space Systems (STSS)
2021 Best of Session (BOS) (Next Gen Space Systems) Award, 40th Digital Avionics Systems Conference (DASC 2021)
2021 Best of Session (BOS) (Surveillance & Situational Awareness) Award, 40th Digital Avionics Systems Conference (DASC 2021)
2021 IEEE Outstanding Leadership Award, IEEE Technical Committee on Scalable Computing (TCSC)
2021 Certificate of Appreciation, IEEE Communications Society
2020 ACM Distinguished Speaker

2020 World's Top 2% Scientists for both career-long impact and single year impact (compiled by John P.A. Ioannidis, Stanford University)

2020 Best Paper Award, 15th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2020)

2020 Best Paper Award, 6th IEEE International Conference on Cloud and Big Data Computing (CBDCom 2020)

2019 Best Paper Award, 2nd IEEE International Conference on Industrial Internet (ICII 2019)

2019 Best Paper Award, 12th IEEE International Conference on Cyber, Physical and Social Computing (CPSCom-2019)

2019 Best Paper Award, 19th IEEE/AIAA Integrated Communication, Navigation and Surveillance technologies Conference (ICNS 2019)-Cybersecurity Track

2018 Outstanding Service Award, 1st IEEE International Conference on Industrial Internet (ICII 2018)

2016 Golden Bear Scholar Award (the highest campus-wide recognition for research excellence), WVU Institute of Technology

2016 Associate Editor of the Month, IEEE Access

2014 Focus Paper, IEEE Communications Society (ComSoc) Technology News (CTN)

Research Support and/or Fellowships

Since joining UMBC:

May 2024-Apr. 2029 Amount TBD (UMBC Grant), National Aeronautics and Space Administration (NASA), Contract No.: 80HQTR24AA004, NASA Data Analytics and Technical Support Services (DATSS II) Blanket Purchase Agreement (BPA), Subcontract P.I. (Portion of $115,000,000, Prime Contractor: LMI Consulting, LLC)

Sep. 2023-Aug. 2026 $350,000 (UMBC Grant), National Aeronautics and Space Administration (NASA), Grant No.: 80NSSC23M0059, Mobility-Energy-Coordinated Platform for Infrastructure Planning to Support Electric Vertical-Take-Off-and-Landing (eVTOL) Aircraft Operations, Site P.I. (Portion of $6,000,000, PI: Liang Sun, New Mexico State University)

Jul. 2023-Jun. 2028 $1,500,000, Department of Transportation (DOT), Grant No.: 000185939, Transportation Cybersecurity Center for Advanced Research and Education, Site P.I. (Portion of $10,000,000, PI: Yunpeng Zhang, University of Houston)

Apr. 2023-Mar. 2024 $228,198 (UMBC Grant), National Science Foundation (NSF), Grant No.: 2317117, SaTC: EDU: Collaborative: Bolstering UAV Cybersecurity Education through Curriculum Development with Hands-on Laboratory Framework, P.I.

Mar. 2023-Feb. 2024 $20,000, National Science Foundation (NSF), Grant No.: 2231629, IUCRC Planning Grant Embry-Riddle Aeronautical University: Center for Aviation Big Data Analytics [ABDA], P.I.

Jan. 2023-Dec. 2024 $186,000 (UMBC Grant), National Science Foundation (NSF), Grant No.: 2309760, Collaborative Research: CyberTraining: Pilot: Operationalizing AI/Machine Learning for Cybersecurity Training, P.I.

Jan. 2023-Dec. 2024 $117,745 (UMBC Grant), National Science Foundation (NSF), Grant No.: 2229155, FMSG: Cyber: Perceptual and Cognitive Additive Manufacturing (PCAM), Co-P.I. (P.I.: Daewon Kim)

Jan. 2023-Dec. 2025 $65,893 (UMBC Grant), National Science Foundation (NSF), Grant No.: 2229473, Collaborative Research: SWIFT: AI-based Sensing for Improved Resiliency via Spectral Adaptation with Lifelong Learning, Co-P.I. (P.I.: Sirani Mututhanthrige-Perera)

Before joining UMBC:

May 2022-Apr. 2025 $322,866, National Science Foundation (NSF), Grant No.: 2150213, Swarms of Unmanned Aircraft Systems in the Age of AI/Machine Learning, P.I.

May-Aug. 2022 $22,740, Air Force Office of Scientific Research (AFOSR), Contract No.: PIA FA8750-19-3-1000, Coverage-Guided Adversarial Machine Learning in Unknown Environments, P.I.

Jan. 2022-Dec. 2023 $495,000, Federal Aviation Administration (FAA), Grant No.: 15-C-UAS-ERAU-A-32, Investigate Detect and Avoid (DAA) Track Classification and Filtering, Sponsor: Federal Aviation Administration, Co-P.I. (P.I.: Richard Prazenica)

Oct. 2021-Jul. 2023 $330,000, Department of Transportation (DOT), Grant No.: 69A3551747125-270128BB, Improving Air Mobility in Emergency Situations, P.I.

Oct. 2021-Dec. 2023 $397,809, Federal Aviation Administration (FAA), Grant No.: 15-C-UAS-ERAU-A-28, Identify Flight Recorder Requirements for Unmanned Aircraft Systems (UAS) Integration into the National Airspace System (NAS), P.I.

Oct. 2021-Jul. 2023 $208,835, Department of Transportation (DOT), Grant No.: 69A3551747125, Real-time Deep Reinforcement Learning for Evacuation under Emergencies, Co-P.I. (P.I.: Dahai Liu)

May-Aug. 2021 $33,065, Air Force Research Laboratory (AFRL), Contract No.: SA10032021050360, Data-Efficient Machine Learning for Dynamic Targeting, P.I.

Oct. 2020-Dec. 2022 $220,581, Department of Transportation (DOT), Grant No.: 69A3551747125-270128V, Machine Learning for Dynamic Airspace Configuration towards Optimized Mobility in Emergency Situations, P.I.

May 2020-Dec. 2023 $472,060, National Science Foundation (NSF), Grant No.: 1956193, SaTC: EDU: Collaborative: Bolstering UAV Cybersecurity Education through Curriculum Development with Hands-on Laboratory Framework, P.I.

Feb. 2020-Jun. 2020 $232,251, US Department of Defense-Army, Machine Learning for Position, Navigation and Timing (PNT) Without the Global Positioning System (GPS), Co-P.I. (P.I.: Marc Compere)

Feb. 2020-May 2021 $150,000, Department of Transportation (DOT), Grant No.: 69A3551747125-271028P, Multi-scale and Collaborative Disaster Evacuation Planning Framework, Co-P.I. (P.I.: Dahai Liu)

Jul-Aug. 2018 $15,747, AFRL, Contract No.: ICA2018-VFRP-025, Dynamic Stackelberg Game Theoretic Method for Resource Allocation in the Cloud under Imperfect Information, P.I.

Mar. 2013-Feb. 2016 $200,000, West Virginia Higher Education Policy Commission, Research Trust Fund STEM Grant program for State Colleges and Universities, West Virginia Center of Excellence for Cyber-Physical Systems, P.I.

Jan. 2013-Dec. 2014 $80,000, West Virginia Higher Education Policy Commission, Innovation Grants program, Field Test Bed of Connected Vehicle Applications in the Mountainous Terrain of West Virginia, P.I.

Jan. 2013-Dec. 2014 $40,000, West Virginia Higher Education Policy Commission, Instrumentation Grants Program, Experimental Testbed to Investigate Wireless Communication in Underground Coal Mines, Co-P.I.

Dec. 2012-Dec. 2013 $20,000, CONSOL Energy Inc., Research Trust Fund STEM Grant program for State Colleges and Universities, Energy Cyber-Physical Systems, P.I.

Ph.D. Students

Faisal Alrefaei, May 2024, Co-Chair, Embry-Riddle Aeronautical University (ERAU)
Dezsö V. Silagyi, Aug. 2022, Member, ERAU
Jian Wang, Dec. 2021, Chair, ERAU
Abdullah De Jesus El Atrache Ceballos, Dec. 2021, Member, ERAU
Yongxin Liu, Aug. 2021, Chair, ERAU
Shuteng Niu, May 2021, Chair, ERAU
Yifan Tian, Dec. 2019, Member, ERAU

Master's Students

Arwa Alshamikh, May 2022, Chair, ERAU
Norah Ondus, Dec. 2021, Member, ERAU

Hashim H. Alneami, May 2021, Member, ERAU
Jameel Alsulami, May 2021, Member, ERAU
Yupeng Yang, May 2021, Chair, ERAU
Neftali Magallanes, Dec. 2020, Chair, ERAU
Norah J. Alilwit, Dec. 2020, Chair, ERAU
Shikai Gao, Dec. 2020, Chair, ERAU
Guan Wang, Dec. 2020, Chair, ERAU
Dhafer Fayez Alqushayri, May 2020, Chair, ERAU
Bowen Chen, May 2020, Chair, ERAU
Yushan Jiang, May 2020, Chair, ERAU
Fahad Alatmi, May 2020, Chair, ERAU
Ossamah Almotery, May 2020, Chair, ERAU
Moataz A. Hanif, Aug. 2019, Chair, ERAU
Maisa S. Albalawi, May 2019, Chair, ERAU
Faisal Alrefaei, May 2019, Chair, ERAU
Saad H. Alotaibi, May 2019, Chair, ERAU
Shicheng Zhang, Dec. 2018, Chair, ERAU
Tianyuan Zhang, Dec. 2018, Chair, ERAU

Undergraduate Students

Iverson Scarlett (UMBC Student), NSF Research Experiences for Undergraduates (REU), Jan.-May 2024, mentor
David Li, REU, Jan. 2024-present, mentor
Chau Nguyen (UMBC Student), REU, Jun.-Aug. 2023, mentor
Zachary Goodman, REU, Jun.-Aug. 2023, mentor
Ryan D Restivo, REU, Jun.-Aug. 2022, mentor
Laurel C. Dodson, REU, Jun.-Aug. 2022, mentor
William Wang, REU, Jun.-Aug. 2022, mentor
Evan J. Karim, REU, Jun.-Aug. 2022, mentor
Harry Romesburg III, REU, Jun.-Aug. 2021, mentor
Zachary S. Tauscher, REU, Jun.-Aug. 2021, mentor
Riley A. Bates, REU, Jun.-Aug. 2020, mentor
Joshua M. Eason, REU, Jun.-Aug. 2020, mentor
Rainier Delarosa, REU, Jun.-Aug. 2020, mentor
Juan Rios, REU, Jun.-Aug. 2019, mentor
Charles C. Mercenit, REU, Jun.-Aug. 2019, mentor
Emma Chelson Kohm, REU, Jun.-Aug. 2018, mentor
Nicolas Juarez, REU, Jun.-Aug. 2018, mentor

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Authorship Principles: for the research conducted under my supervision, my Ph.D./MS/undergraduate student/postdoc is the first author and I am the last author and the corresponding author; for the research conducted in collaboration with researchers at other universities, the order of authors indicates the level of contribution.
Note: Ph.D./MS/undergraduate student indicated by underlining; Postdoc/visiting Ph.D. student/scholar indicated by italics; Corresponding author indicated by *.

- Peer-Reviewed Works

- Journal Articles (Selected)

Since joining UMBC:

1. K. Acharya(UMBC Student), A. Velasquez and **H. H. Song***, "A Survey on Symbolic Knowledge Distillation of Large Language Models," in IEEE Transactions on Artificial Intelligence (under minor revision).
2. K. Acharya(UMBC Student), W. Raza, *C. Dourado*, A. Velasquez and **H. H. Song***, "Neurosymbolic Reinforcement Learning and Planning: A Survey," in IEEE Transactions on Artificial Intelligence, doi: 10.1109/TAI.2023.3311428.
3. J. Renkhoff(UMBC Student), K. Feng, M. Meier-Doernberg, A. Velasquez and **H. H. Song***, "A Survey on Verification and Validation, Testing and Evaluations of Neurosymbolic Artificial Intelligence," in *IEEE Transactions on Artificial Intelligence*, doi: 10.1109/TAI.2024.3351798.
4. M. Adil*(incoming UMBC student), J. Ali, M. M. Jadoon, S. R. Alotaibi, N. Kumar, A. Farouk, and **H. Song**. 2023. COVID-19: Secure Healthcare Internet of Things Networks, Current Trends and Challenges with Future Research Directions. ACM Trans. Sen. Netw. 19, 3, Article 54 (August 2023), 25 pages. https://doi.org/10.1145/3558519
5. A. Irshad, G. A. Mallah, M. Bilal*, S. A. Chaudhry, M. Shafiq and **H. Song**, "SUSIC: A Secure User Access Control Mechanism for SDN-Enabled IIoT and Cyber–Physical Systems," in IEEE Internet of Things Journal, vol. 10, no. 18, pp. 16504-16515, 15 Sept.15, 2023, doi: 10.1109/JIOT.2023.3268474.
6. A. Ahmed, M. M. Iqbal, S. Jabbar, M. Ibrar, A. Erbad and **H. Song**, "Position-Based Emergency Message Dissemination Schemes in the Internet of Vehicles: A Review," in IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 12, pp. 13548-13572, Dec. 2023, doi: 10.1109/TITS.2023.3304127.
7. M. Adil*(incoming UMBC student), M. K. Khan, M. M. Jadoon, M. Attique, **H. Song** and A. Farouk, "An AI-Enabled Hybrid Lightweight Authentication Scheme for Intelligent IoMT Based Cyber-Physical Systems," in IEEE Transactions on Network Science and Engineering, vol. 10, no. 5, pp. 2719-2730, 1 Sept.-Oct. 2023, doi: 10.1109/TNSE.2022.3159526.
8. T. Safdar Malik, K. R. Malik, A. Afzal, M. Ibrar, L. Wang, **H. Song** and N. Shah, "RL-IoT: Reinforcement Learning-Based Routing Approach for Cognitive Radio-Enabled IoT Communications," in IEEE Internet of Things Journal, vol. 10, no. 2, pp. 1836-1847, 15 Jan.15, 2023, doi: 10.1109/JIOT.2022.3210703.
9. A. Ahmed, S. Jabbar, M. M. Iqbal, M. Ibrar, A. Erbad and **H. Song**, "An Efficient Hierarchical Mobile IPv6 Group-Based BU Scheme for Mobile Nodes in IoT Network," in IEEE Internet of Things Journal, vol. 10, no. 10, pp. 8684-8695, 15 May15, 2023, doi: 10.1109/JIOT.2022.3231989.
10. M. Adil*(incoming UMBC student), V. G. Menon, V. Balasubramanian, S. R. Alotaibi, **H. Song**, Z. Jin and A. Farouk, "Survey: Self-Empowered Wireless Sensor Networks Security Taxonomy, Challenges, and Future Research Directions," in IEEE Sensors Journal, vol. 23, no. 18, pp. 20519-20535, 15 Sept.15, 2023, doi: 10.1109/JSEN.2022.3216824.
11. A. Andreou, *C. X. Mavromoustakis*, E. K. Markakis and **H. Song**, "On the Integration of User Preferences by Using a Hybrid Methodology for Multi-Criteria Decision Making," in IEEE Access, vol. 11, pp. 139157-139170, 2023, doi: 10.1109/ACCESS.2023.3341004.
12. M. Adil*(incoming UMBC student), **H. Song**, A. Farouk and Z. Jin, "Auto-CIoV: Autonomous Connected Internet of Vehicles Security Requirements, Open Challenges with Future Research Directions," in IEEE Network, vol. 37, no. 4, pp. 238-246, July/August 2023, doi: 10.1109/MNET.001.2200629.

Before joining UMBC:

13. *F. Kong*, J. Li*, *B. Jiang*, H. Wang and **H. Song**, "Trajectory Optimization for Drone Logistics Delivery via Attention-Based Pointer Network," in IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 4, pp. 4519-4531, April 2023, doi: 10.1109/TITS.2022.3168987.
14. B. Wang, R. Wang* and **H. Song**, "Toward the Trustworthiness of Industrial Robotics Using Differential Fuzz Testing," in IEEE Transactions on Industrial Informatics, vol. 19, no. 3, pp. 2782-2791, March 2023, doi: 10.1109/TII.2022.3211888.

15. M. Adil*(incoming UMBC student), M. A. Jan, Y. Liu, H. Abulkasim, A. Farouk and **H. Song**, "A Systematic Survey: Security Threats to UAV-Aided IoT Applications, Taxonomy, Current Challenges and Requirements With Future Research Directions," in IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 2, pp. 1437-1455, Feb. 2023, doi: 10.1109/TITS.2022.3220043.
16. *B. Jiang*, J. Li*, H. Wang and **H. Song**, "Privacy-Preserving Federated Learning for Industrial Edge Computing via Hybrid Differential Privacy and Adaptive Compression," in IEEE Transactions on Industrial Informatics, vol. 19, no. 2, pp. 1136-1144, Feb. 2023, doi: 10.1109/TII.2021.3131175.
17. G. Wang, D. Li and **H. Song***, "A Formal Analytical Framework for IoT-Based Plug-And Play Manufacturing System Considering Product Life-Cycle Design Cost," in IEEE Transactions on Industrial Informatics, vol. 19, no. 2, pp. 1647-1654, Feb. 2023, doi: 10.1109/TII.2022.3192681.
18. *A. González-Vidal**, J. Mendoza-Bernal, S. Niu, A. F. Skarmeta and **H. Song**, "A Transfer Learning Framework for Predictive Energy-Related Scenarios in Smart Buildings," in IEEE Transactions on Industry Applications, vol. 59, no. 1, pp. 26-37, Jan.-Feb. 2023, doi: 10.1109/TIA.2022.3179222.
19. M. Adil*(incoming UMBC student), H. Alshahrani, A. Rajab, A. Shaikh, **H. Song** and A. Farouk, "QoS Review: Smart Sensing in Wake of COVID-19, Current Trends and Specifications With Future Research Directions," in IEEE Sensors Journal, vol. 23, no. 2, pp. 865-876, 15 Jan.15, 2023, doi: 10.1109/JSEN.2022.3170055.
20. J. Yang, J. Huo, M. Xi*, J. He, Z. Li and **H. H. Song**, "A Time-Saving Path Planning Scheme for Autonomous Underwater Vehicles With Complex Underwater Conditions," in IEEE Internet of Things Journal, vol. 10, no. 2, pp. 1001-1013, 15 Jan.15, 2023, doi: 10.1109/JIOT.2022.3205685.
21. *F. Kong*, J. Li, *B. Jiang*, H. Wang and **H. Song**, "Integrated Generative Model for Industrial Anomaly Detection via Bidirectional LSTM and Attention Mechanism," in IEEE Transactions on Industrial Informatics, vol. 19, no. 1, pp. 541-550, Jan. 2023, doi: 10.1109/TII.2021.3078192.
22. M. Adil(incoming UMBC student), V. G. Menon, V. Balasubramanian, S. R. Alotaibi, **H. Song**, Z. Jin* and A. Farouk, "Survey: Self-Empowered Wireless Sensor Networks Security Taxonomy, Challenges and Future Research Directions," in IEEE Sensors Journal, 2022, doi: 10.1109/JSEN.2022.3216824.
23. M. Adil*(incoming UMBC student), M. Khurram Khan, M. M. Jadoon, M. Attique, **H. Song** and A. Farouk, "An AI-enabled Hybrid lightweight Authentication Scheme for Intelligent IoMT based Cyber-Physical Systems," in IEEE Transactions on Network Science and Engineering, doi: 10.1109/TNSE.2022.3159526.
24. Y. Yang, J. Yu, D. Liu*, S. -A. Lee, S. Namilae, S. Islam, H. Gou, H. Park and **H. Song**, "Multiagent Collaboration for Emergency Evacuation Using Reinforcement Learning for Transportation Systems," in IEEE Journal on Miniaturization for Air and Space Systems, vol. 3, no. 4, pp. 232-241, Dec. 2022, doi: 10.1109/JMASS.2022.3210531.
25. M. Adil(incoming UMBC student), M. A. Jan*, S. Mastorakis, **H. Song**, M. M. Jadoon, S. Abbas and A. Farouk, "Hash-MAC-DSDV: Mutual Authentication for Intelligent IoT-Based Cyber–Physical Systems," in IEEE Internet of Things Journal, vol. 9, no. 22, pp. 22173-22183, 15 Nov.15, 2022, doi: 10.1109/JIOT.2021.3083731.
26. M. Adil*(incoming UMBC student), M. Attique, M. M. Jadoon, J. Ali, A. Farouk and **H. Song**, "HOPCTP: A Robust Channel Categorization Data Preservation Scheme for Industrial Healthcare Internet of Things," in IEEE Transactions on Industrial Informatics, vol. 18, no. 10, pp. 7151-7161, Oct. 2022, doi: 10.1109/TII.2022.3148287.
27. K. Białas, *M. Kedziora**, R. Chałupnik and **H. H. Song**, "Multifactor Authentication System Using Simplified EEG Brain–Computer Interface," in IEEE Transactions on Human-Machine Systems, vol. 52, no. 5, pp. 867-876, Oct. 2022, doi: 10.1109/THMS.2022.3196142.
28. A. Khan, A. A. Siddiqui, F. Ullah, M. Bilal*, M. J. Piran and **H. Song**, "VP-CAST: Velocity and Position-Based Broadcast Suppression for VANETs," in IEEE Transactions on Intelligent Transportation Systems, vol. 23, no. 10, pp. 18512-18525, Oct. 2022, doi: 10.1109/TITS.2022.3153122.

29. Z. Lv*, C. Cheng and **H. Song**, "Digital Twins Based on Quantum Networking," in IEEE Network, vol. 36, no. 5, pp. 88-93, September/October 2022, doi: 10.1109/MNET.001.2200131.
30. A. U. Khan, G. Abbas, Z. H. Abbas, M. Bilal*, S. C. Shah and **H. Song**, "Reliability Analysis of Cognitive Radio Networks With Reserved Spectrum for 6G-IoT," in IEEE Transactions on Network and Service Management, vol. 19, no. 3, pp. 2726-2737, Sept. 2022, doi: 10.1109/TNSM.2022.3168669.
31. M. Xi, J. Yang*, J. Wen, H. Liu, Y. Li and **H. H. Song**, "Comprehensive Ocean Information-Enabled AUV Path Planning Via Reinforcement Learning," in IEEE Internet of Things Journal, vol. 9, no. 18, pp. 17440-17451, 15 Sept.15, 2022, doi: 10.1109/JIOT.2022.3155697.
32. Z. Lv*, J. Wu, Y. Li and **H. Song**, "Cross-Layer Optimization for Industrial Internet of Things in Real Scene Digital Twins," in IEEE Internet of Things Journal, vol. 9, no. 17, pp. 15618-15629, 1 Sept.1, 2022, doi: 10.1109/JIOT.2022.3152634.
33. M. Adil(incoming UMBC student), **H. Song**, J. Ali, M. A. Jan*, M. Attique, S. Abbas and A. Farouk, "Enhanced-AODV: A Robust Three Phase Priority-Based Traffic Load Balancing Scheme for Internet of Things," in IEEE Internet of Things Journal, vol. 9, no. 16, pp. 14426-14437, 15 Aug.15, 2022, doi: 10.1109/JIOT.2021.3072984.
34. Y. Liu, J. Wang, J. Li, S. Niu, L. Wu and **H. Song***, "Zero-Bias Deep-Learning-Enabled Quickest Abnormal Event Detection in IoT," in IEEE Internet of Things Journal, vol. 9, no. 13, pp. 11385-11395, 1 July1, 2022, doi: 10.1109/JIOT.2021.3126819.
35. S. Zahra, W. Gong, H. A. Khattak*, M. A. Shah and **H. Song**, "Cross-Domain Security and Interoperability in Internet of Things," in IEEE Internet of Things Journal, vol. 9, no. 14, pp. 11993-12000, 15 July15, 2022, doi: 10.1109/JIOT.2021.3132643.
36. Y. Jiang, S. Niu, K. Zhang, B. Chen, C. Xu, D. Liu and **H. Song***, "Spatial–Temporal Graph Data Mining for IoT-Enabled Air Mobility Prediction," in IEEE Internet of Things Journal, vol. 9, no. 12, pp. 9232-9240, 15 June15, 2022, doi: 10.1109/JIOT.2021.3090265.
37. G. Abbas, A. U. Khan, Z. H. Abbas, M. Bilal*, K. S. Kwak and **H. Song**, "FMCPR: Flexible Multiparameter-Based Channel Prediction and Ranking for CR-Enabled Massive IoT," in IEEE Internet of Things Journal, vol. 9, no. 10, pp. 7151-7165, 15 May15, 2022, doi: 10.1109/JIOT.2021.3084677.
38. P. Krishnan, K. Jain, R. Buyya, P. Vijayakumar*, A. Nayyar, M. Bilal and **H. Song**, "MUD-Based Behavioral Profiling Security Framework for Software-Defined IoT Networks," in IEEE Internet of Things Journal, vol. 9, no. 9, pp. 6611-6622, 1 May1, 2022, doi: 10.1109/JIOT.2021.3113577.
39. C. Wang, C. Chen, Q. Pei, N. Lv and **H. Song***, "Popularity Incentive Caching for Vehicular Named Data Networking," in IEEE Transactions on Intelligent Transportation Systems, vol. 23, no. 4, pp. 3640-3653, April 2022, doi: 10.1109/TITS.2020.3038924.
40. S. Niu, Y. Jiang, B. Chen, J. Wang, Y. Liu, and **H. Song***. 2021. Cross-Modality Transfer Learning for Image-Text Information Management. ACM Trans. Manage. Inf. Syst. 13, 1, Article 5 (March 2022), 14 pages. https://doi.org/10.1145/3464324
41. J. Wang, Y. Liu, S. Niu, W. Jing and **H. Song***, "Throughput Optimization in Heterogeneous Swarms of Unmanned Aircraft Systems for Advanced Aerial Mobility," in IEEE Transactions on Intelligent Transportation Systems, vol. 23, no. 3, pp. 2752-2761, March 2022, doi: 10.1109/TITS.2021.3082512.
42. S. H. Alsamhi*, F. A. Almalki, F. Afghah, A. Hawbani, A. V. Shvetsov, B. Lee and **H. Song**, "Drones' Edge Intelligence Over Smart Environments in B5G: Blockchain and Federated Learning Synergy," in IEEE Transactions on Green Communications and Networking, vol. 6, no. 1, pp. 295-312, March 2022, doi: 10.1109/TGCN.2021.3132561.
43. Z. Su, F. Biennier, Z. Lv*, Y. Peng, **H. Song** and J. Miao, "Toward Architectural and Protocol-Level Foundation for End-to-End Trustworthiness in Cloud/Fog Computing," in IEEE Transactions on Big Data, vol. 8, no. 1, pp. 35-47, 1 Feb. 2022, doi: 10.1109/TBDATA.2017.2705418.
44. Y. Liu, J. Wang, J. Li, S. Niu and **H. Song***, "Machine Learning for the Detection and Identification of Internet of Things Devices: A Survey," in IEEE Internet of Things Journal, vol. 9, no. 1, pp. 298-320, 1 Jan.1, 2022, doi: 10.1109/JIOT.2021.3099028.

45. C. Chen, L. Liu, T. Qiu, J. Jiang, Q. Pei and **H. Song***, "Routing With Traffic Awareness and Link Preference in Internet of Vehicles," in IEEE Transactions on Intelligent Transportation Systems, vol. 23, no. 1, pp. 200-214, Jan. 2022, doi: 10.1109/TITS.2020.3009455.
46. Y. Liu, J. Wang, J. Li, S. Niu and **H. Song***, "Class-Incremental Learning for Wireless Device Identification in IoT," in IEEE Internet of Things Journal, vol. 8, no. 23, pp. 17227-17235, 1 Dec.1, 2021, doi: 10.1109/JIOT.2021.3078407.
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49. J. Yang, Z. Bian, J. Liu, *B. Jiang**, W. Lu, X. Gao and **H. Song**, "No-Reference Quality Assessment for Screen Content Images Using Visual Edge Model and AdaBoosting Neural Network," in IEEE Transactions on Image Processing, vol. 30, pp. 6801-6814, 2021, doi: 10.1109/TIP.2021.3098245.
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2. W. Tan (UMBC Student), J. B. Shivakumar, R. S. Govindarajan, N. Reed, D. Kim, E. Rojas, Y. Liu, and **H. Song**, "Explainable Artificial Intelligence for Antenna Sensor Modeling", 2024 IEEE International Mediterranean Conference on Communications and Networking (MeditCom) (accepted)
3. S. B. Hakim (UMBC Student), M. Adil, J. M. Batalla, C. X. Mavromoustakis, and **H. Song**, "Exploring the Frontiers of Firmware Fuzzing: µAFL's Application on Cortex M4 and Unix Programs", 2024 International Wireless Communications and Mobile Computing (IWCMC) (accepted)
4. P. Eslami (UMBC Student) and **H. Song**, "Stability Analysis of Deep Neural Networks under Adversarial Attacks and Noise Perturbations", 2024 International Wireless Communications and Mobile Computing (IWCMC) (accepted)
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Before joining UMBC:

10. Dec. 2022, NSF research to enable smart 3D manufacturing, Aerospace Manufacturing & Design, https://www.aerospacemanufacturinganddesign.com/article/nsf-research-enable-smart-3d-printing/
11. Aug. 2022, How will 6G transform the world? Dell Perspectives magazine, https://www.russbanham.com/2022/08/15/how-will-6g-transform-the-world/
12. Jun. 2022, Revolution of AI Models? CXO Tech Magazine, https://cxotechmagazine.com/revolution-of-ai-models/
13. Jun. 2022, New FAA Grant To Help Embry-Riddle Researchers Improve Drone Safety, ERAU News, https://news.erau.edu/headlines/new-faa-grant-to-help-embry-riddle-researchers-improve-drone-safety
14. Jun. 2022, Undergrads to push drone swarm research forward with aid from Federal Funding, sUAS News, https://www.suasnews.com/2022/06/undergrads-to-push-drone-swarm-research-forward-with-aid-from-federal-funding/
15. Sep. 2021, FAA Awards $2.8 Million in Drone Research Grants to Five Universities, Federal Aviation Administration, https://www.faa.gov/newsroom/faa-awards-28-million-drone-research-grants-five-universities
16. May 2021, 'Rotating' Memories Can Improve Machine Learning, Embry-Riddle Researchers Say, ERAU News, https://news.erau.edu/headlines/rotating-memories-can-improve-machine-learning
17. Jan. 2021, Traffic as Viral Outbreak Predictor: Eagle Researchers Set Sights on New Metric, ERAU News, https://news.erau.edu/headlines/traffic-as-viral-outbreak-predictor-eagle-researchers-set-sights-on-new-metric
18. Oct. 2020, National Science Foundation Funds Development of First-of-Its-Kind Drone Cybersecurity Curriculum at Embry-Riddle, ERAU News, https://news.erau.edu/headlines/national-science-foundation-funds-development-of-first-of-its-kind-drone-cybersecurity-curriculum
19. Nov. 2019, Marie Donlon, Anti-drone laser tech passes Air Force test, IEEE GlobalSpec, https://insights.globalspec.com/article/12983/anti-drone-laser-tech-passes-air-force-test
20. Fall 2019, Drone Control, Lift Alumni Magazine, https://lift.erau.edu/drone-control/
21. Oct. 2019, Is It Possible To Safely and Legally Take Control Of A Rogue Drone? Irish Tech News, https://irishtechnews.ie/safely-and-legally-take-control-of-a-rogue-drone/
22. Sep. 2019, Dronejacker Hacks Rogue Drones, WORLD News Group, https://teen.wng.org/node/5565
23. Jul. 2019, Marie Donlon, New technology 'highjacks' intrusive drones, IEEE GlobalSpec, https://insights.globalspec.com/article/12205/new-technology-highjacks-intrusive-drones

24. Jul. 2019, Fla. Professor Invents Artificial Intelligence Program to Hijack Rogue Drones, Security, the business magazine for security executives, https://www.securitymagazine.com/articles/90473-fla-professor-invents-artificial-intelligence-program-to-hijack-rogue-drones
25. Jul. 2019, Interview with Embry–Riddle & Drone Defense Systems LLC on commercialize counter-drone technology helps prevent unauthorized drones, My Dear Drone, https://mydeardrone.com/interviews/interview-with-embry-riddle-drone-defense-systems-llc/
26. Jun. 2019, Dronejacker: Daytona Professor Invents Intelligent System, U.S. News & World Report, https://www.usnews.com/news/best-states/florida/articles/2019-06-29/dronejacker-daytona-professor-invents-intelligent-system
27. Jun. 2019, Dronejacker: Daytona professor invents intelligent system, The Washington Times, https://m.washingtontimes.com/news/2019/jun/27/dronejacker-daytona-professor-invents-intelligent-/
28. Jun. 2019, Dronejacker: ERAU professor in Daytona invents system to seize control of unmanned aircraft, The Daytona Beach News-Journal, https://www.news-journalonline.com/news/20190619/dronejacker-erau-professor-in-daytona-invents-system-to-seize-control-of-unmanned-aircraft
29. Jun. 2019, Dronejacker: ERAU professor invents system to seize control of unmanned aircraft, AIRMAIL, https://www.floridaairports.org/media/203629/airmail-19-10.pdf
30. May 2019, Embry-Riddle professor develops counter-UAS tech that safely grounds unauthorized UAS, Association for Unmanned Vehicle Systems International (AUVSI), https://www.auvsi.org/industry-news/embry-riddle-professor-develops-counter-uas-tech-safely-grounds-unauthorized-uas
31. May 2019, Counter-Drone Technology to be Commercialized by Embry-Riddle and Drone Defense Systems LLC, USA Today, http://classifieds.usatoday.com/press/counter-drone-technology-to-be-commercialized-by-embry-riddle-and-drone-defense-systems-llc/
32. May 2019, AI system grabs the reins of wayward drones, New Atlas, https://newatlas.com/drone-jamming-system/59703/
33. May 2019, Embry-Riddle start-up develops technology that safely disables rogue drones, Tech Transfer Central, https://techtransfercentral.com/2019/05/22/embry-riddle-start-up-develops-technology-that-safely-disables-rogue-drones/
34. May 2019, Embry-Riddle University “develops, commercialises neural-network counter-UAS system”, Unmanned Airspace, https://www.unmannedairspace.info/counter-uas-systems-and-policies/embry-riddle-university-develops-commercialises-neural-network-counter-uas-system/
35. May 2019, Counter-Drone Technology to be Commercialized by Embry-Riddle and Drone Defense Systems LLC, sUAS News, https://www.suasnews.com/2019/05/counter-drone-technology-to-be-commercialized-by-embry-riddle-and-drone-defense-systems-llc/
36. May 2019, Embry-Riddle to Commercialize ‘Non-Intrusive’ Counter-Drone Technology, Unmanned Aerial Online, https://unmanned-aerial.com/embry-riddle-to-commercialize-non-intrusive-counter-drone-technology
37. May 2019, Embry-Riddle and Drone Defense Systems to Develop Anti-Drone System, DroneBelow, https://dronebelow.com/2019/05/17/embry-riddle-and-drone-defense-systems-to-develop-anti-drone-system/
38. May 2019, Embry-Riddle y Drone Defense Systems presentan su antidrón inteligente, IDS, Defense and Security Information, http://infodron.es/id/2019/05/20/noticia-embryriddle-drone-defense-systems-presentan-antidron-inteligente.html
39. May 2019, The Surprising Key That Will Enable Drones To Change The World, Forbes, https://www.forbes.com/sites/kristykiernan/2019/05/23/the-surprising-key-that-will-enable-drones-to-change-the-world/?sh=5898433441d4
40. May 2019, Embry-Riddle and Drone Defense Systems Launch C-UAV System, Battle Space,https://battle-updates.com/update/radar-eo-ir-night-vision-and-surveillance-update-57/
41. May 2019, Embry-Riddle, Drone Defense Systems to Commercialize CUAS Technology, Defense Daily, https://www.defensedaily.com/tech-developments-196/uncategorized/

42. Nov. 2014, Ubiquitous WSN for Healthcare: Recent Advances and Future Prospects, IEEE ComSoc Technology News, http://www.comsoc.org/blog/ieee-comsoc-technology-news-november-issue-focuses-internet-things
43. May 2013, Unveiling the banner for the new Center of Excellence for Cyber-Physical Systems, Division of Science and Research, WV Higher Education Policy Commission, http://www.wvresearch.org/archives/7169

Presentations

- Media Activities

1. Jun. 2019, Embry-Riddle team develops drone hijacking technology to secure critical airspace, Fox News, http://www.fox35orlando.com/news/local-news/embry-riddle-team-develops-drone-hijacking-technology-to-secure-critical-airspace
2. Aug. 2019, Is there a way to safely and legally take control of a rogue drone? Drone Radio Show, https://droneradioshow.com/is-there-a-way-to-safely-and-legally-take-control-of-a-rogue-drone/

- Keynote Speeches

Since joining UMBC:

1. Neuro-symbolic AI: The Third Wave of AI, 2024 Workshop on Explainable and Responsible AI/GenAI for 6G Networks (6GBRAIN) in conjunction with the 4th IEEE International Mediterranean Conference on Communications and Networking (IEEE MeditCom 2024), Madrid, Spain, Jul. 8, 2024
2. Panelist Speaker, Workshop on AI-Driven Innovations in Transportation: Maritime, Land, and Aerospace, 2024 IEEE Conference on Artificial Intelligence (IEEE CAI 2024), Jun 25, 2024, Singapore
3. AI/Machine Learning for Internet of Dependable and Controllable Things, 2023 Workshop on Advanced Multimedia Computing for Smart Manufacturing and Engineering in conjunction with 31st ACM International Conference on Multimedia (ACM MM), Ottawa, Ontario, Canada, Nov. 2, 2023
4. AI for Cybersecurity and Security of AI, 5th IEEE International Workshop on Data Driven Intelligence for Networks and Systems (DDINS) in conjunction with IEEE ICC 2023, Rome, Italy, Jun. 1, 2023,
5. AI for Cybersecurity and Security of AI, 7th IEEE International Workshop on the Security, Privacy, and Digital Forensics of Mobile Systems and Networks (MobiSec 2023) in conjunction with IEEE INFOCOM 2023, Hoboken, New Jersey, May 20, 2023

Before joining UMBC:

6. AI for Cybersecurity and Security of AI, 12th International Conference on Computer Engineering and Networks (CENet2022), online, Nov. 5, 2022
7. Networked Systems and Security Research in the Age of AI/Machine Learning, 3rd International Workshop on Privacy, Security, and Trust in Computational Intelligence (PSTCI2021) in conjunction with the 30th ACM International Conference on Information and Knowledge Management (CIKM2021), Gold Coast, Australia, Nov. 5, 2021

- Invited Talks

Since joining UMBC:

1. AI for Cybersecurity and Security of AI, Nanyang Technological University (Host: Chau Yuen), Singapore, Jun. 24, 2024
2. Real-Time Machine Learning for Quickest Detection (Host: Mihir Talati), College Park, MD, Feb. 26, 2024
3. AI for Cybersecurity and Security of AI, University of Ottawa (Host: Burak Kantarci), Ottawa, Ontario, Canada, Nov. 3, 2023

4. AI for Cybersecurity and Security of AI, University of Houston (Host: Yunpeng Zhang), Houston, TX, Sep. 25, 2023
5. Wireless Embedded Sensors during AM for Product Qualification and Structural Health Monitoring, DARPA Rapid Part Qualification Workshop, Arlington, VA, Aug. 15, 2023
6. AI for Cybersecurity and Beyond, Johns Hopkins University Applied Physics Laboratory (Host: Tamim I. Sookoor), Laurel, MD, Aug. 14, 2023
7. My Perspective on DA/ML and Industry 4.0, NSF Workshop on Industry 4.0 and Data Analytics/Machine Learning (Host: Sheng-Jen ("Tony"), online, Aug. 10, 2023
8. AI for Cybersecurity and Security of AI, University of Florence (Host: Laura Pierucci), Florence, Italy, May 30, 2023
9. Service-Aware Radio Access towards 6G, Global 6G Conference 2023 (Host: Qi Bi), online, Mar. 22, 2023
10. AI for Cybersecurity and Security of AI, IEEE International Conference on Computing, Networking and Communications (ICNC 2023) (Host: Jian Ren), Honolulu, Hawaii, Feb. 22, 2023

Before joining UMBC:

11. AI for Cybersecurity and Security of AI, Hosei University (Host: Keping Yu), Tokyo, Japan, Dec. 16, 2022
12. Counter-Unmanned Aircraft System(s) (C-UAS): State of the Art, Challenges and Future Trends, New Mexico State University (Host: Liang Sun), Las Cruces, NM, Dec. 2, 2022
13. Networked Systems and Security Research in the Age of AI/Machine Learning, Stevens Institute of Technology (Hosts: Min Song & Xiaojiang Du), Hoboken, NJ, Nov. 2, 2022
14. Secure and Trustworthy Transportation Cyber-Physical Systems, DOT Transportation Innovation Speakers Series (Host: Maranda McBride), online, Oct. 4, 2022
15. Real-Time Machine Learning for Quickest Detection, 2022 International Workshop on "Remote Sensing and Societal Applications", IEEE GRSS Kolkata Chapter (Host: Sambit Bakshi; Umesh Chandra Pati), online, Sep. 29, 2022
16. AI for Cybersecurity and Security of AI, Air Force Research Laboratory's Information Directorate (AFRL/RI) Information Institute (II) (Host: John J. Salerno), Rome, NY, Jun. 30, 2022
17. Lightweight blockchain assisted secure routing of swarm UAS networking, Internet Engineering Task Force (IETF) Workshop on Evolving Routing Security in the Internet (Host: Adrian Farrel), online, Sep. 30, 2021
18. Counter-Unmanned Aircraft System(s) (C-UAS): State of the Art, Challenges and Future Trends, Counter UAS Summit, online, Sep. 1, 2021
19. AI/Machine Learning for Internet of Dependable and Controllable Things, AICTE Sponsored Second International Colloquium on Recent Trends in Computer Science – 2021, online, Jul. 5, 2021
20. Real-Time Machine Learning for Quickest Detection, St. Bonaventure University, online, Apr. 27, 2021
21. Counter-Unmanned Aircraft System(s) (C-UAS): State of the Art, Challenges and Future Trends, Nirma University, online, Feb. 22, 2021
22. Aviation Big Data Analytics, Embry-Riddle Aeronautical University (Host: Ahmed F. Abdelghany), online, Nov. 19, 2020
23. AI-Enabled UAS Detection and Negation: Embry-Riddle Aeronautical University Perspectives, Counter UAS Summit Digital Summit, online, Sep. 1, 2020
24. AI-Enabled Drone Detection and Negation, Chitkara University, online, Aug. 14, 2020
25. AI-Enabled Drone Detection and Negation, 2020 Virtual High School Summer Transportation Institute (Host: Teresa A. McRae), online, Jul. 28, 2020
26. AI-Enabled UAS Detection and Negation, Counter UAS Summit, online, Mar. 31, 2020
27. Secure and Trustworthy Cyber-Physical Systems, George Washington University (Host: Xiuzhen Cheng), Washington, DC, Sep. 30, 2016
28. Cyber-Physical Systems for Smart Transportation and Beyond, University of North Texas (Host: Yan Wan), Denton, TX, Oct. 23, 2015
29. Standardization Efforts for Green Metrics under Data Explosion, IEEE Green ICT initiative rapid reaction standardization workshop (RRSW), Heathrow, UK, Nov. 24, 2015

30. Green Networking and Data, 1st IEEE Big Data Initiative (BDI) Standards Workshop (BDISW), Gaithersburg, MD, Nov. 2, 2015
31. Soundscaping Urban Infrastructure for Predictive Maintenance with a Focus on Legacy Equipment, Global City Teams Challenge Expo, Washington, DC, Jun. 1, 2015
32. Cyber-Physical Systems for Culture Preservation and Revitalization of Small Towns, NSF Early-Career Investigators' Workshop on Cyber-Physical Systems in Smart Cities (2015 ECI-CPS), Seattle, WA, Apr. 16, 2015
33. Cloud-Assisted Mobile Crowd Sensing for Urban Transportation, NSF Workshop on Large-Scale Traffic and Driving Activity Data (DriveSense '14), Norfolk, VA, Oct. 31, 2014
34. Internet of Things for Rural and Small Town America, 6th Annual Create West Virginia Training and Education Conference, Richwood, WV, Oct. 25, 2013
35. Wi-Fi in Rural Areas, 6th Annual Create West Virginia Training and Education Conference, Richwood, WV, Oct. 24, 2013
36. Applications of Cyber-Physical Systems in Civil Infrastructure, 49th Annual ASCE Fall Technical Conference, Montgomery, WV, Nov. 21, 2013

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITE AND PROFESSION

Service to the Department

2023-present	Member	IS Graduate Committee
2023-present	Member	IS Honors and Awards Committee
2023-present	Member	IS PhD Comprehensive Exam Committee (5 students)
2023	Chair	P&T 3rd-year Review Committee (Dr. Yaxin Yao) Note: Agreed to serve but unable to serve due to resignation.
2023-present	Advisor	Multiple Incoming MS in IS Students

Service to the College

2023-presnet	Member	COEIT Faculty Advisory Committee
2023-present	Member	CSEE Tenure-Track Faculty Search Committee (Chair: Prof. Fow-Sen Choa)
2023-present	Member	CS Ph.D. Dissertation Advisory Committee (Chair: Tim Oates)

Service to the University

2024-present Member UMBC Middle States Commission on Higher Education (MSCHE) Working Group I: Standard I: Mission and Goals (co-led by Damian Doyle, Barbara Smith, and Tim Topoleski)

Service to the Community

Proposal Reviewer

Since joining UMBC:

2024	Panelist	National Science Foundation (NSF) (1 panel)
2024	Panelist	National Aeronautics and Space Administration (NASA) (1 panel)
2023	Panelist	NSF (3 panels)
2023	Reviewer	Swiss National Science Foundation (SNSF)
2023	Reviewer	Austrian Science Fund (FWF)
2023	Reviewer	Qatar National Research Fund (QNRF)
2023	Reviewer	Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI)
2023	Reviewer	Nomination for Singapore's 2023 President's Technology Award

Before joining UMBC:

2022	Reviewer	Swiss National Science Foundation (SNSF)
2022	Reviewer	Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI)

2021 Reviewer Qatar National Research Fund (QNRF)
2021 Reviewer 2021 Innovation Fund Grant Competition to Build Partnerships and Training Programs between the United States, Central America, and the Dominican Republic
2021 Reviewer United Arab Emirates University (UAEU)
2020 Panelist NASA (2 panels)
2020 Panelist National Academies of Sciences, Engineering, and Medicine
2020 Reviewer Dutch Research Council (NWO)
2020 Reviewer National Science Centre, Poland
2020 Reviewer Science Fund of the Republic of Serbia
2019 Subject Matter Expert (SME) United States Special Operations Command (USSOCOM)
2019 Reviewer Dutch Research Council (NWO)
2018 Panelist National Science Foundation (NSF) (3 panels)
2018 Reviewer Army Research Office (ARO)
2017 Panelist National Science Foundation (NSF) (2 panels)
2017 Reviewer EDGE Marie Sklodowska Curie COFUND Fellowships
2017 Reviewer US Department of Defense (DoD) (2 panels)
2015 Panelist National Science Foundation (NSF) (3 panels)

Other
Since joining UMBC:
2023 P&T External Evaluator Colorado School of Mines
Before joining UMBC:
2022 P&T External Evaluator Rochester Institute of Technology

Service to the Profession
Standing/Technical Committee
Since joining UMBC:
2023 Member IEEE Computer Society Fellow Evaluating Committee
2023-present Vice President (North America) Asia Computational Intelligence Society (ACIS)
2023-present Founding Member IEEE Special Interest Group (SIG) on Metaverse within IEEE Multimedia Communications Technical Committee
Before joining UMBC:
2020-present Vice Chair IEEE Special Interest Group (SIG) on Big Data Intelligent Networking within IEEE Technical Committee on Big Data

Distinguished Speaker/Lecturer
Since joining UMBC:
2024-present Distinguished Visitor IEEE Computer Society
2024-present Distinguished Lecturer IEEE Communications Society (ComSoc)
2024-present Distinguished Lecturer IEEE Intelligent Transportation Systems Society (ITSS)
2023-present Distinguished Lecturer IEEE Systems Council (SYSC)
2023-present Distinguished Lecturer IEEE Vehicular Technology Society (VTS)
Before joining UMBC:
2020-present Distinguished Speaker ACM

Editorial Activities – Regular
Since joining UMBC:
2023-present Associate Editor IEEE Transactions on Artificial Intelligence
Before joining UMBC:

2022-present	Member	Editorial Board, Elsevier, Book Series: Intelligent Data-Centric Systems: Sensor Collected Intelligence
2021-present	Associate Editor	IEEE Transactions on Intelligent Transportation Systems
2020-present	Associate Editor	IEEE Internet of Things Journal
2020-present	Associate Editor	IEEE Journal on Miniaturization for Air and Space Systems
2017-2020	Associate Technical Editor	IEEE Communications Magazine

Editorial Activities – Guest Editing

Since joining UMBC:

2024 Guest Co-Editor Deep Learning for Intelligent Human Computer Interaction in ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM), vol. 20, no.2.

2024 Guest Co-Editor Customers Centric Communication and Networked Control for Intelligent Cyber-Physical Transportation Systems in IEEE Transactions on Consumer Electronics, vol. 70, no. 1.

2023 Guest Co-Editor Multimodality, Multidimensional Representation, and Multimedia Quality Assessment Toward Information Quality in Social Web of Things in ACM Journal of Data and Information Quality, vol. 15, no. 3.

2023 Guest Co-Editor Sustainable Solutions for the Intelligent Transportation Systems in IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 12.

2023 Guest Co-Editor Internet of Things in Intelligent Transportation Infrastructure in IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 11.

2023 Guest Co-Editor Augmented Intelligence of Things for Smart Enterprise Systems in IEEE Transactions on Industrial Informatics, vol. 19, no. 1.

2023 Guest Co-Editor Medical Image Analysis Embedded on Microprocessors in IEEE Journal of Biomedical and Health Informatics, vol. 27, no. 3.

Before joining UMBC:

2022 Guest Editor AI-Driven Synthetic Biology for Human Wellbeing in IEEE Journal of Biomedical and Health Informatics, vol. 26, no. 10.

2022 Guest Co-Editor Secure Communications Over the Internet of Artificially Intelligent Things: Parts 1 & 2 in IEEE Internet of Things Magazine, vol. 5, nos. 1&2

2022 Guest Co-Editor Augmented Reality for Bioinformatics in IEEE Journal of Biomedical and Health Informatics, vol. 26, no. 6.

2022 Guest Co-Editor A Secured and Privacy-Preserved Smart Health Monitoring and Improvement System in IEEE Journal of Biomedical and Health Informatics, vol. 26, no. 5.

2021 Guest Co-Editor Drone Networking in IEEE Communications Standards Magazine, vol. 5, no. 4.

2021 Guest Co-Editor Smart Sensing for Agriculture in IEEE Sensors Journal, vol. 21, no. 16.

2021 Guest Co-Editor Software Defined Internet of Vehicles in IEEE Transactions on Intelligent Transportation Systems, vol. 22, no. 6.

2021 Guest Co-Editor 5G for Internet of Things in IEEE Network, vol. 35, no. 2.

2021 Guest Co-Editor AI-Enabled Internet of Dependable and Controllable Things in IEEE Internet of Things Journal, vol. 8, no. 5.

2021 Guest Editor Visual Perception Enabled Industry Intelligence in IEEE Transactions on Industrial Informatics, vol. 17, no. 3.

2020 Guest Co-Editor RGB-D Sensors and 3D Reconstruction in IEEE Sensors Journal, vol. 20, no. 20.

2020 Guest Co-Editor Big Data Intelligent Networking in IEEE Network, vol. 34, no. 4.

2020 Guest Co-Editor Emerging Trends and Challenges in Fog Computing for IoT in IEEE Internet of Things Journal, vol. 7, no. 5.

2020 Guest Co-Editor Design and Analysis of Communication Interfaces for Industry 4.0," in IEEE Journal on Selected Areas in Communications, vol. 38, no. 5.

2019 Guest Co-Editor Toward Securing Internet of Connected Vehicles (IoV) From Virtual Vehicle Hijacking in IEEE Internet of Things Journal, vol. 6, no. 4.
2019 Guest Editor Recent Advances in Cyber-Physical Security in Industrial Environments in IEEE Transactions on Industrial Informatics, vol. 15, no. 12.
2017 Guest Co-Editor Security and Privacy in Cyber-Physical Systems in IEEE Internet of Things Journal, vol. 4, no. 6.

Book Editor

Since joining UMBC:
2023 Co-Editor Federated Learning for Digital Healthcare Systems, ISBN: 9780443138973, Elsevier
2023 Co-Editor Access Control and Security Monitoring of Multimedia Information Processing and Transmission, ISBN: 9781839536939, IET Press
Before joining UMBC:
2022 Editor Aviation Cybersecurity: Foundations, principles, and applications, ISBN: 978-1839533211, Scitech Publishing
2021 Co-Editor Smart Transportation: AI Enabled Mobility and Autonomous Driving, ISBN 978-0367352967, CRC Press
2019 Co-Editor Big Data Analytics for Cyber-Physical Systems: Machine Learning for the Internet of Things, ISBN: 9780128166376, Elsevier
2017 Editor Security and Privacy in Cyber-Physical Systems: Foundations and Applications, ISBN: 978-1-119-22604-8, Wiley-IEEE Press, England, UK
2017 Editor Smart Cities: Foundations, Principles and Applications, ISBN-13: 978-1119226390, Wiley, Hoboken, NJ, USA
2017 Editor Secure and Trustworthy Transportation Cyber-Physical Systems. ISBN: 978-981-10-3891-4. Singapore: Springer
2016 Co-Editor Industrial Internet of Things: Cybermanufacturing Systems, ISBN 978-3-319-42558-0, Springer, Switzerland
2016 Editor Cyber-Physical Systems: Foundations, Principles and Applications, ISBN 978-0-12-803801-7, Academic Press, Waltham, MA, USA

Organization of Technical Meetings – Leadership Roles

Since joining UMBC:
2024 Technical Program Committee Co-Chair 18th International Conference on Network and System Security (NSS 2024), UAE
2023 General Chair 2023 International Conference on Intelligent Sensing and Industrial Automation (ISIA 2023), Zhuhai, China, Dec. 9-10, 2023
2023 Technical Program Committee Co-Chair IEEE CTSoc International Conference on Gaming, Entertainment & Media (GEM), Barbados, Nov. 19 - 22, 2023
2023 Steering Committee Member Workshop on Advanced Multimedia Computing for Smart Manufacturing and Engineering (AMC-SME 2023) in conjunction with ACM Multimedia (MM) 2023, Ottawa, Canada, Nov. 2, 2023
2023 General Co-Chair 10th IEEE International Workshop on Security and Privacy for Internet of Things and Cyber-Physical Systems (IoT/CPS-Security 2023) in conjunction with 2023 IEEE 98th Vehicular Technology Conference: VTC2023-Fall, Hong Kong, Oct. 13, 2023
Before joining UMBC:
2024 General Co-Chair 2nd International Workshop on Intelligent Systems and Paradigms for Next Generation Computing Evolution (INSPIRE), Sharjah, United Arab Emirates, Dec. 16-19, 2024
2022 General Co-Chair 8th IEEE International Conference on Smart Data (IEEE SmartData 2022), Espoo, Finland, Aug. 22-25, 2022
2019 Technical Program Committee Co-Chair IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (IEEE CAMAD 2019), Limassol, Cyprus, Sep. 11-13, 2019

2019 Workshop Chair 2nd IEEE International Conference on Industrial Internet (ICII), Orlando, FL, USA, Nov. 11-12, 2019
2017 Publicity Co-Chair IEEE Wireless Communications & Networking Conference (WCNC 2017), San Francisco, CA, USA, Mar. 19-22, 2017
2016 Publication Co-Chair 11th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2016), Bozeman, Montana, USA, Aug. 8-10, 2016

Organization of Technical Meetings – Other Roles

Since joining UMBC:
2024 Track Chair 33rd International Conference on Computer Communications and Networks (ICCCN), Big Island, Hawaii, USA, July 29-31, 2024
2023 Session Chair IEEE International Conference on Communications 2023 (IEEE ICC 2023), Rome, Italy, May 28-June 1, 2023
2023 Session Chair IEEE International Conference on Computer Communications (INFOCOM2023), New York Area, May 17-20, 2023

Before joining UMBC:
2022 Area Chair IEEE International Conference on Multimedia and Expo (ICME) 2022, Taipei, Taiwan, July 11-15, 2022
2020 Session Chair 39th IEEE International Performance Computing and Communications Conference (IPCCC 2020), Virtual Conference, Nov. 6-8, 2020
2019 Symposium Co-Chair Green Computing, Networking, and Communications Symposium within International Conference on Computing, Networking and Communications (ICNC 2019), Honolulu, Hawaii, USA, Feb. 18-21, 2019
2018 Session Chair 37th IEEE International Performance Computing and Communications Conference (IPCCC 2018), Orlando, Florida, US Nov. 17-19, 2018
2016 Session Chair e-Health, Track: Algorithms and learning systems for e-health, Symposium on Selected Areas in Communications, IEEE GLOBECOM, Washington, DC., Dec. 6, 2016
2013 Session Chair Smart Grid, Track: Green Communication Systems and Networks, Symposium on Selected Areas in Communications, IEEE GLOBECOM, Atlanta, GA, Dec. 11, 2013
2013 Session Chair EB-3 TSCGCC (TSCGCC Exhibition Booth 3), IEEE Online Greencomm, Oct. 31, 2013

Other

Since joining UMBC:
2023-present IEEE Impact Creator

Updated: December 6, 2024

CURRICULUM VITAE

SIDAS A. SAULYNAS

EDUCATION

Ph.D.	2020	UMBC, Human-Centered Computing
M.S.	2013	UMBC, Human-Centered Computing
B.S.	2001	Stevenson University, Computer Information Systems
M.S.	1992	University of Baltimore, Finance
B.A.	1984	Dickinson College, Psychology

Experience in Higher Education

2022 – Present	UMBC, Lecturer, Information Systems
2022 – 2022	Stevenson University, Adjunct Professor
2021 – 2022	Stevenson University, Associate Professor
2014 – 2021	Stevenson University, Assistant Professor
1993 – 2014	Stevenson University, Instructor
1992 – 1993	Stevenson University, Adjunct Instructor

Experience in Other than Higher Education

1993 – 2001	T. Rowe Price and Associates, Applications Consultant
1986 – 1991	T. Rowe Price and Associates, Securities Broker

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications: Peer Reviewed Works

Conference Proceedings

(Saulynas S.A.), Vader M.L., Bendigeri A., King T., Nagraj A. & Kuber R. (2022) *How and Why We Run: Investigating the Experiences of Blind and Visually-Impaired Runners.* In Proceedings of the 19th International Web for All Conference (pp. 1-11). doi: 10.1145/3493612.3520445

(Saulynas S.A.), & Kuber R. (2019) *Designing Mobile Interaction Guidelines to Account for Situationally Induced Impairments and Disabilities (SIID) and Severely Constraining Situational Impairments (SCSI)* in CHI'19 Workshop: Addressing the Challenges of Situationally-Induced Impairments and Disabilities in Mobile Interaction, May 04–09, 2019, Glasgow, UK.

(Saulynas S.A.), & Kuber R. (2018) *Towards Supporting Mobile Device Users Facing Severely Constraining Situational Impairments* In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI 2018), Montreal QC, Canada, LBW540

(Saulynas S.A.), & Kuber R. (2017) *Towards BCI and Gestural-Based Authentication for Individuals who are Blind*. In Proceedings of the 19th International ACM Conference on Computers and Accessibility (ASSETS 2017), Baltimore, MD, 403-404

(Saulynas S.A.), Burgee L.E., & Kuber R. (2017) *All Situational Impairments are not Created Equal: A Classification System for Situational Impairment Events and the Unique Nature of Severely Constraining Situational Impairments*. In Proceedings iConference'17, Wuhan, China

(Toy K.), O'Meara, E., Kuber, R. & Saulynas, S.A. (2017): *An Investigation of Ways to Support Older Adults when Using Mobile Interfaces*. In Proceedings iConference'17, Wuhan, China

(Saulynas S.A.) (2016): *Understanding Severely Constraining Situational Impairments When Accessing Mobile Technologies*, In Proceedings of the 30th British Human Computer Interaction Conference, Bournemouth, UK

(Saulynas S.A.) Albar, L. Kuber, R. and Felzer T. (2015): *Using OnScreenDualScribe to Support Text Entry and Targeting among Individuals with Physical Disabilities*, In Proceedings of the 17th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2015), Lisbon, Portugal

(Saulynas S.A.) and Kuber, R. (2015): *Going Beyond "Beyond Being There": An Inquiry into the Use of Brain-Computer Interface Technologies and Intelligent Machine Agents to Facilitate Inconspicuous Communication*, In Proceedings of Collaboration Technologies and Systems (CTS'15), Atlanta, USA, 454-459.

Journals

(Saulynas S.A.), Burgee L.E., Bendigeri A., & Kuber R. (2021) *Putting Situational Impairments in Context: Developing Guidance for Situational Impairments and Severely Constraining Situational Impairments by Examining Parallel Domains.* Universal Access in the Information Society. doi: 10.1007/s10209-021-00811-5

(Saulynas S.A.), & Kuber R. (2020) *Understanding and Supporting Individuals Experiencing Severely Constraining Situational Impairments.* Universal Access in the Information Society, 19(4), 919-933. doi: 10.1007/s10209-019-00705-7

(Saulynas S.A.), Lechner C., & Kuber R (2017) *Towards the Use of Brain–Computer Interface and Gestural Technologies as a Potential Alternative to PIN Authentication*, International Journal of Human–Computer Interaction

Doctoral Dissertation

(Saulynas S.A.) (2020) *Towards Developing Guidelines for Addressing Situationally Induced Impairments and Disabilities (SIID) and Severely Constraining Situational Impairments (SCSI)* (Order No. 28024453). Available from Dissertations & Theses @ UMBC; ProQuest Dissertations & Theses Global. (2457964407). Retrieved from http://proxy-bc.researchport.umd.edu/login?url=https://www.proquest.com/dissertations-theses/towards-developing-guidelines-addressing/docview/2457964407/se-2?accountid=14577

Publications: Non-Peer Reviewed Works

Invited Papers

(Saulynas, S.A.), Norcio, A.F., & Burgee, L.E. (2014): *Towards a Personal Autonomous Presentation Assistant: Applying Technology for Intelligent Assistance During Live Presentations.* Bangalore,

India: Proceedings of the International Conference on Innovative Practices in Business and Information Technology, ISBN: 978-1-63452-467-4, 1-11

Presentations

Keynotes and Invited Talks

Turning a Negative into a Positive: How Mandatory Use of Asynchronous Communication Technologies During the COVID-19 Lock Down Period Inspired Continued Use of Blended Learning Tools in the Classroom. International Conference on Blended Learning Ecosystem for Higher Education in Agriculture, New Delhi, India March 21-23, 2023.

Towards Developing Guidelines for Addressing Situationally Induced Impairments and Disabilities (SIID) & Severely Constraining Situational Impairments (SCSI). United States Naval Academy, Annapolis, Maryland October 15, 2019.

Colloquia

Exploring Effective Strategies of Blended Learning for Higher Education in Agriculture. International Conference on Blended Learning Ecosystem for Higher Education in Agriculture, New Delhi, India March 21-23, 2023.

Innovation as a Tool for Value Creation in Business and Information Technology – A Myth or Reality? International Conference on Innovative Practices in Business and Information Technology, Bangalore, India December 15-16, 2014.

Other Presentations

(Saulynas, S.A.), Burgee, L.E. (2014): *A New and Improved Short-Term International Study Tour: Creating a Pedagogical Synergy Between Two Courses to Maximize the Value to the Student and the Institution.* San Antonio, TX: Proceedings of the Academy of Business Research.

(Burgee, L.E.), Saulynas, S.A**.** (2014): *Guidelines for Developing and Conducting an International Marketing European Study Tour: Lessons Learned from Two Decades of Fostering Cultural Immersion.* San Antonio, TX: Proceedings of the Academy of Business Research.

(Saulynas, S.A.), Burgee, L.E. (2013): *Autonomous Presentation Assistance Theory: Applying Technology for Intelligent Assistance during Live Presentations.* San Antonio, TX: Proceedings of the Academy of Business Research.

(Burgee, L.E.), Saulynas, S.A. (2013): *DeGeeking: Infusing Business Professionalism into Information Systems Degree Programs*. San Antonio, TX: Proceedings of the Academy of Business Research

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITE AND PROFESSION

UMBC

Courses/Programs/Micro-Credentials Developed

- The Practice of Management: Global Perspectives in Panama (Faculty-Led Education Abroad version of MGMT-210)
- The Practice of Management: Global Perspectives in London and Paris (Faculty-Led Education Abroad version of MGMT-210)
- Intercultural Management Competency Micro-Credential

Service Activities and Accomplishments

- IS Department Course Lead for The Practice of Management (MGMT-210 (August 2024 -Present)
- Member of the Ad Hoc BTA Program Course Remapping Committee – MGMT-210 Lead (March 2024 – Present)
- Member of the Ad Hoc Climate Survey Committee (March 2024 - Present)
- Member of the IS Adjunct Faculty Committee (August 2023 - Present)
- Member of the Undergraduate Committee (August 2022 – Present)
- Member of the Graduate On-Line MS Committee (August 2022 – Present)
- Contributing Session Leader Ph.D. Seminar (HCC-810) Class (August 2022 – Present)

Stevenson University

Courses/Programs/Developed

- Special Topics in Information Systems: Universal Presentation Design (IS-475)
- Presentation Theory and Application (IS-260)
- On Human Value (Hon-211; Team Taught Honors Course)
- International Marketing/Presentation Theory Study Tour to Panama; January 2014 (Tour Co-Leader)
- Presentation Theory Study Tour to London and Paris; May 2011 (Tour Leader)

Service Activities and Accomplishments

- Member of the Student Research and Creative Works Grant Program: 2022-2022
- Search Committee for Assistant Professor in Cybersecurity and Digital Forensics: 2021-2
- Search Committee for Assistant Professor in Biomedical Engineering: 2021
- Member of the Paul D. Lack Scholars Showcase Committee:2021-2022
- Vice-Chair of the Faculty Welfare Committee: 2020-2022
- Faculty Advisor for Ravens Flock: 2019-2022
- Member of the Academic Integrity Board: 2017-2022
- Communication Intensive Assessment Sub-Committee: 2017-2022
- Member of Technology Committee: Chair from 2006-2010, Member from 2018-2020
- Stevenson University Committee on Study Abroad (SU COSA): 2016-2020
- Faculty Advisor for Phi Beta Lambda: 2015-2018
- Study Abroad Advisory Group: 2012-2015
- Search Committee for Chair of the Department of Information Systems: 2014-2015
- School of Business Representative for a fact-finding expedition to Bangalore India: 2014
- Search Committee for Dean of School of Business 2008-2011
- Member of the Honors Committee 2007-2009
- Faculty Advisor for the Student Gaming Club: 2005
- Faculty Council Executive Committee (Recording Secretary): 2004-2010
- Chair of the Institutional Advancement Committee 2004-2006
- Middles States Curriculum Committee 1997

CURRICULUM VITAE

JIANWU WANG
jianwu@umbc.edu

EDUCATION

Post-doc	2010	University of California, San Diego, Computer Software and Application
Post-doc	2008	Polytechnic University of Turin, Control and Computer Engineering
Ph.D.	2007	Chinese Academy of Sciences, Computer Software and Theory
B.A.	2001	Tianjin University, Computer Science and Technology

Experience in Higher Education

2024 - Present	Professor, Information Systems Department, UMBC
2024 - Present	Director, Center for Scalable Data and Computational Science (ScaleS), UMBC
2022 - Present	Liaison for Research Innovation, Information Systems Department, UMBC
2015 - Present	Director, Big Data Analytics Lab, UMBC
2022 - Present	Affiliate Faculty, Department of Computer Science and Electrical Engineering, UMBC
2021 - Present	Affiliate Faculty, the Center for Real-time Distributed Sensing and Autonomy (CARDS), UMBC
2018 - Present	Affiliate Faculty, the Joint Center for Earth Systems Technology (JCET), UMBC
2018 - Present	Affiliate Faculty, the NSF Center for Accelerated Real Time Analytics (CARTA), UMBC
2021 - 2024	Associate Professor, Information Systems Department, UMBC
2015 - 2021	Assistant Professor, Information Systems Department, UMBC
2012 - 2017	Adjunct Professor, North China University of Technology
2014 - 2015	Assistant Director for Research, Workflows for Data Science Center of Excellence, San Diego Supercomputer Center, University of California, San Diego
2015 - 2015	Associate Project Scientist, University of California, San Diego
2014 - 2015	Visiting Assistant Research Scientist, University of Maryland, College Park
2010 - 2015	Assistant Project Scientist, University of California, San Diego
2013 - 2013	Summer Session Lecturer, University of California, San Diego
2008 - 2010	Postdoctoral Researcher, University of California, San Diego
2007 - 2008	Postdoctoral Researcher, Polytechnic University of Turin

Professional Training

2023 - 2024	Participant, Leadership Development Program, Office of the Provost, UMBC
Summer 2020	Participant, COEIT PIVOT plus Workshop Series for Online Instruction, UMBC
Summer 2019	Participant, Educational Research Training on Parallel and Distributed Computing Curriculum, NSF-supported Center for Parallel and Distributed Computing Curriculum Development and Educational Resources (CDER)
2017-2019	Participant, Active Learning Inquiry Teaching (ALIT) Certificate Program, Faculty Development Center, UMBC
Spring 2013	Participant, The College Classroom Course for Teaching Certificate Program, Center for Teaching Development, UCSD

Honors Received

2023	Outstanding Editor Award, Future Generation Computer Systems (FGCS), Elsevier Press
2023	Nominee for PECASE Award, Office of Advanced Cyberinfrastructure (OAC), NSF
2022	Best Paper Award, 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022)
2020	CAREER Award, NSF
2019	Early-Career Faculty Excellence Award, UMBC

Research Support and/or Fellowships

A. Non-UMBC (total: $38,754)

2013 - 2014	Industrial Scale Demonstration of Smart Manufacturing Achieving Transformational Energy, $27,754, Department of Energy (DOE), Subcontract Co-PI.
2011 - 2013	Scientific Workflow Scheduling on Cloud, Amazon, $11,000, PI.

B. External Funding after joining UMBC $27,484,141 (21 grants) in total: $3,701,721 (13 grants) as PI, $14,865,850 (5 grants) as Co-PI, $8,916,570 (3 grants) as Senior Personnel

2024 - 2027	REU Site: Online Interdisciplinary Big Data Analytics in Science and Engineering, $362,755, National Science Foundation (NSF), Co-PI.
2023 - 2027	Collaborative Research: SCIPE: Enhancing the Transdisciplinary Research Ecosystem for Earth and Environmental Science with Dedicated Cyber Infrastructure Professionals, $999,668, National Science Foundation (NSF), Senior Personnel.
2022 - 2023	Travel: Student Travel Support for IEEE/ACM International Conferences on Utility and Cloud Computing (UCC 2022) and Big Data Computing, Applications and Technologies (BDCAT 2022), $32,000, National Science Foundation (NSF), Co-PI.
2022 - 2023	Multivariate Atmospheric Data Clustering for Studying Aerosol-cloud Interactions, $32,000, Department of Energy (DOE), Subcontract PI.
2022 - 2026	HDR Institute: HARP- Harnessing Data and Model Revolution in the Polar Regions, $13,700,002, National Science Foundation (NSF), Co-PI.
2022 - 2023	Machine Learning based Automatic Detection of Upper Atmosphere Gravity Waves from NASA Satellite Images, $187,620, National Aeronautics and Space Administration (NASA), Co-I.
2021 - 2022	Machine Learning and Cloud based Submeso Scale Ocean Eddy Detection, $10,000, Earth Science Information Partners (ESIP), PI
2021 - 2025	AI & Autonomy for Multi-Agent Systems, $7,616,902, Army Research Lab (ARL), Senior Personnel.
2021 - 2024	REU Site: Online Interdisciplinary Big Data Analytics in Science and Engineering, $293,710, National Science Foundation (NSF), PI.
2020 - 2025	CAREER: Big Data Climate Causality Analytics, $583,385, National Science Foundation (NSF), PI.
2020 - 2023	Developing Passive Satellite Cloud Remote Sensing Algorithms using Collocated Observations, Numerical Simulation and Deep Learning, $1,448,779, National Aeronautics and Space Administration (NASA), PI.
2020 - 2021	Multi-layered Intrusion Tolerant Byzantine Architecture for Bulk Power System Protective Relays, $157,771, Department of Energy (DOE), Subcontract PI.
2019 - 2022	MRI: Acquisition of a Heterogeneous GPU Cluster to Facilitate Deep Learning Research at UMBC, $300,000, National Science Foundation (NSF), Senior Personnel.
2019 - 2020	Climate Analytics on Google Cloud, $14,000, Google Cloud Research Credits Program, PI.

2018 - 2021	Efficient and Flexible Aggregation and Distribution of MODIS Atmospheric Products based on Climate Analytics-as-a- Service Framework, $418,058, National Aeronautics and Space Administration (NASA), PI.
2017 - 2021	CyberTraining: DSE: Cross-Training of Researchers in Computing, Applied Mathematics and Atmospheric Sciences using Advanced Cyberinfrastructure Resources, $547,970, National Science Foundation (NSF), PI.
2017 - 2020	MRI: Acquisition of Cutting-Edge GPU and Phi Nodes for the Interdisciplinary UMBC High Performance Computing Facility, $552,353, National Science Foundation (NSF), Co-PI.
2018	NASA Satellite Data Analytics, $31,700, The Earth on AWS Cloud Credits for Research program, PI.
2017 - 2018	Big Satellite Data based Climate Analytics, $20,000, Microsoft Cloud Research Credits Program, PI.
2017 - 2018	Low-Code Workflow Software for Life Sciences, $100,000, Maryland Industrial Partnerships (MIPS) Program, PI.
2015 - 2017	Industrial Scale Demonstration of Smart Manufacturing Achieving Transformational Energy, $31,588, Department of Energy (DOE), Subcontract PI.

C. Internal Funding at UMBC $148,072 (9 grants) in total

2025	CloudBot – A Smart Cloud Exploration System, UMBC Technology Catalyst Fund (TCF), $10,000, UMBC, PI.
2024 - 2025	Neurosymbolic AI for Scientific Discovery, COEIT Interdisciplinary Proposal Awards, $20,000, UMBC, Co-PI.
2024	COEIT Faculty Lab and Equipment Renewal Grant, UMBC COEIT, $12,701, UMBC, PI.
2023	COEIT Faculty Lab and Equipment Renewal Grant, UMBC COEIT, $25,528, UMBC, PI.
2022 - 2023	Center for Interdisciplinary Research in Dynamic Systems (CIRDS), UMBC COEIT Grant to Incubate New Centers, $30,000, UMBC COEIT, Co-PI.
2020	Summer Research Faculty Fellowship, $6,000, UMBC, PI.
2020	COEIT Summer Research Program for REU Site Proposal Development, $5,000, UMBC COEIT, PI.
2019	COEIT Faculty Lab and Equipment Renewal Grant, $8,217, UMBC COEIT, Co-PI.
2015 - 2016	Addressing Fundamental Sensing and Data Processing Problems in Sustainable Farms, UMBC COEIT Strategic Plan Implementation Grant, $35,626, UMBC COEIT, Co-PI.

Teaching

A. Courses Taught Outside of UMBC

Fall 2014	CMSC106 - Introduction to C Programming, Computer Science Department, University of Maryland, College Park (UMD)
Summer 2013	CSE21 - Mathematics for Algorithms and Systems Analysis, Department of Computer Science and Engineering, University of California, San Diego (UCSD)

B. Courses Taught at UMBC

Spring 2024	IS 789 - Big Data Fundamentals and Techniques
Fall 2023	IS 410/610 - Introduction to Database Design
Spring 2023	IS 410 - Introduction to Database Design
Fall 2022	IS 698/800 - Causal AI and Machine Learning

Spring 2021	IS 651 - Distributed Systems
Fall 2020	IS 651 - Distributed Systems
Spring 2020	IS 410/610 - Introduction to Database Design
Spring 2020	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences, above teaching load course
Fall 2019	IS 789 - Big Data Fundamentals and Techniques
Fall 2019	IS 410 - Introduction to Database Design
Spring 2019	IS 651 - Distributed Systems
Spring 2019	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences
Spring 2018	IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences
Spring 2017	IS 651 - Distributed Systems
Spring 2016	IS 651 - Distributed Systems
Fall 2015	IS 651 - Distributed Systems

C. Designed Courses

Spring 2022	Course Designer, IS 790 - Causal Artificial Intelligence, UMBC
Spring 2019	Course Designer, IS 789 - Big Data Fundamentals and Techniques, UMBC
Spring 2018	Course Designer, IS698/MATH700/PHYS650 - Special topics on Big Data + High-Performance Computing + Atmospheric Sciences, UMBC
Spring 2018	Course Designer, DATA 603 - Platforms for Big Data Processing, Division of Professional Studies, UMBC

D. Other Teaching Related Activities

Spring 2020	Guest Lecturer, Basics of Big Data, PHYS 650 - Special Topic on Application of Artificial Intelligence (AI) in Earth Sciences, JCET Seminar Series Spring 2020, UMBC
Spring 2016	Guest Lecturer, Cracking Big Data: Scalable Workflow Approach, IS 698 - Special topics on Translational Biomedical Informatics, UMBC
Fall 2010	Guest Lecturer, Scientific Workflow Scheduling, CSE 290 - Graduate Students Seminar on Scheduling Algorithms, Department of Computer Science and Engineering, UCSD

Ph.D. Students 6 graduated and 10 current

Wenbin Zhang	2016 - 2020 Committee Chair, Doctoral Dissertation: Learning Fairness and Graph Deep Generation in Dynamic Environments. 1st position after graduation: Postdoc, Carnegie Mellon University; 2nd position: Assistant Professor, Department of Computer Science, Michigan Technological University
Pei Guo	2017 - 2021 Committee Chair, Doctoral Dissertation: Scalable Multivariate Causality Discovery from Large-scale Global Spatiotemporal Climate Data. Position after graduation: Data Scientist at Wyze Labs
Xin Wang	2020 - 2022 Committee Chair (co-advisor: Sisi Duan), Doctoral Dissertation: Secure, Reproducible and Adaptive Machine Learning in Distributed Systems. Position after graduation: Postdoc at Tsinghua University
Qitao Xie	2016 - 2023 Committee Chair (Co-Chair: Ting Zhu), Doctoral Dissertation: Deep Learning Based Chatbot on FinTech Applications. Part-time Student
Xin Huang	2020 - 2023 Committee Chair (Co-Chair: Sanjay Purushotham), Doctoral Dissertation: Deep Learning based Cloud Retrieval Techniques using Multiple

		Satellite Remote Sensing Data, Position after graduation: Assistant Professor, Department of Computer and Information Sciences, Towson University
Sahara Ali	2020 - 2024	Committee Chair, Doctoral Dissertation: Spatiotemporal Forecasting and Causality Methods for Arctic Amplification. Position after graduation: Assistant Professor, Department of Information Science, University of North Texas
Oluwatobiloba Odunsi	2021 - Present	Committee Chair, Pre-comprehensive
Xingyan Li	2021 - Present	Committee Chair, Pre-proposal
Seraj A.M. Mostafa	2021 - Present	Committee Chair, Candidacy
Azim Khan	2022 - Present	Committee Co-Chair (Chair: Aryya Gangopadhyay), Pre-proposal
Francis Nji	2022 - Present	Committee Chair (Co-Chair: Vandana Janeja), Pre-proposal
Joyce Padela	2022 - Present	Committee Chair, Pre-proposal
Omar Faruque	2022 - Present	Committee Chair, Pre-proposal
Akila Sampath	2023 - Present	Committee Chair (Co-Chair: Vandana Janeja), Pre-proposal
Mostafa Cham	2023 - Present	Committee Chair, Pre-comprehensive
Tartela Tabassum	2024 - Present	Committee Chair, Pre-comprehensive

Committee Members for Ph.D. Dissertation

Ibrahim Toure	IS Department, UMBC	Defended in 2017
John W Hebeler	IS Department, UMBC	Defended in 2017
Zhichuan Huang	CSEE Department, UMBC	Defended in 2017
Md Abdullah Khan	IS Department, UMBC	Defended in 2019
Yao Yao	CSEE Department, UMBC	Defended in 2020
Tao Ding	IS Department, UMBC	Passed proposal in 2020
Achala Denagamage	Physics Department, UMBC	Passed proposal in 2020
Wei Wang	CSEE Department, UMBC	Defended in 2021
Chamara Rajapakshe	Physics Department, UMBC	Defended in 2021
Carlos Barajas	Math&Stats Department, UMBC	Defended in 2022
Peichang Shi	IS Department, UMBC	Defended in 2022
Adeleke Ademakinwa	Physics Department, UMBC	Passed proposal in 2022
Argho Sarkar	IS Department, UMBC	Passed proposal in 2022
James Clavin	IS Department, UMBC	Passed proposal in 2022
Chhaya Kulkarni	IS Department, UMBC	Passed proposal in 2022
Daniel Kelly	Math&Stats Department, UMBC	Passed proposal in 2023
Pretom Roy Ovi	IS Department, UMBC	Passed proposal in 2023
Tatiana Della Porta	CSEE Department, UMBC	Passed proposal in 2023
Anamika Paul Rupa	IS Department, UMBC	Defended in 2023
Ziqi Yin	Atmospheric and Oceanic Sciences, CU Boulder	In preparation
Saydeh Karabatis	IS Department, UMBC	In preparation

Master Students

Homayra Alam	2022 - Present	Committee Chair
Garima Kumari	2022 - 2023	Committee Chair
Charan Duggirala	2022 - 2023	Committee Chair
Rohan Salvi	2022 - 2023	Committee Chair
Supriya Sangondimath	2019 - 2021	Committee Chair
Savio Kay	2017 - 2019	Committee Chair
Deepak Prakash	2017 - 2019	Committee Chair

Rishi Sankineni	2016 - 2017	Committee Chair
Muthukumar Thevar	2016 - 2017	Committee Member (Co-Advisor)
Sai C. Pallaprolu	2016 - 2017	Committee Member (Co-Advisor)
Vishak Iyer	2016 - 2017	Committee Member

Undergraduate Students

Brianna Grissom	2024	Research Mentor	REU Site
Kenia Munoz-Ordaz	2024	Research Mentor	REU Site
Julian Pulido	2024	Research Mentor	REU Site
Olivia Zhang	2024	Research Mentor	REU Site
Angelina Dewar	2023	Research Mentor	REU Site
Katherine Yi	2023	Research Mentor	REU Site
Zhengze Lu	2023	Research Mentor	REU Site
Tartela Tabassum	2023	Research Mentor	REU Site
Jorge López González	2022	Research Mentor	REU Site
Theodore Chapman	2022	Research Mentor	REU Site
Kathryn Chen	2022	Research Mentor	REU Site
Hannah Nguyen	2022	Research Mentor	REU Site
Logan Chambers	2022	Research Mentor	REU Site
Zainab Yekini	2022	Research Mentor	LSAMP Program
Eliot Kim	2021	Research Mentor	REU Site
Peter Kruse	2021	Research Mentor	REU Site
Skylar Lama	2021	Research Mentor	REU Site
Jamal Bourne	2021	Research Mentor	REU Site
Kai Morton	2020	Research Mentor	LSAMP Program
Sadia Rahman	2020	Research Mentor	
Anu Osunnuyi	2020	Research Mentor	LSAMP Program
Quentin Richards	2020	Research Mentor	LSAMP Program
Uchendu Uchendu	2019-2020	Research Mentor	REU Supplement Grant and LSAMP Program
Christine Abraham	2019-2020	Research Mentor	REU Supplement Grant
Achuna Ofonedu	2019, 2020	Research Mentor	Leadership Alliance Program
Imauri Motorin	2018	Research Mentor	
Jeong Ryu	2016	Research Mentor	

High School Students

Jonathan He	2024	Research Mentor	REU Site
Ray Chen	2023	Research Mentor	REU Site
Louis Lapp	2022-2024	Research Mentor	Ingenuity Project
Michael Hu	2021	Research Mentor	REU Site
Jason Guo	2020	Research Mentor	
Daudi Mwangi	2020-2021	Research Mentor	Ingenuity Project

Major Student Grants / Awards

- 2024/11: Xingyan Li, PhD student, Technuf Fellowship, Department of Information Systems, UMBC.
- 2023/05: Xin Huang, PhD student, Dissertation Fellowship, Summer 2023, UMBC Graduate School.
- 2023/03, Louis Lapp, mentored high school student, First place in the Mathematics and Computer Science category at the Morgan State University Science-Mathematics-Engineering Fair.

- 2022/12: Sahara Ali, PhD student, Best Paper Award at the 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022).
- 2022/08 - 2023/07: Xingyan Li, PhD student, Graduate Fellowship, Goddard Earth Sciences Technology and Research (GESTAR) II.
- 2021/12: Pei Guo, PhD student, finalist of the BenchCouncil 2021 Distinguished Doctoral Dissertation Award.
- 2021/11: Sahara Ali, PhD student, ESIP Community Fellow to help bridge the gap between informatics and Earth science.
- 2020/05: Wenbin Zhang, PhD student, Dissertation Fellowship, Summer 2020, UMBC Graduate School.
- 2019/08 - 2020/07: Pei Guo, PhD student, Graduate Fellowship, Joint Center for Earth Systems Technology (JCET), UMBC.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications (140 papers in total, 86 after joining UMBC in 2015, [G] for mentored graduated students, [U] for mentored undergraduate students, [H] for mentored high-school students)

Citation information of the papers can be found at https://scholar.google.com/citations?hl=en&user=Q1VuLaMAAAAJ. 3000+ total citations and h-index value is 27 in November 2024.

A. Edited Books and Conference Proceedings

1. Arpit Jain, Abhinav Sharma, **Jianwu Wang**, Mangey Ram. Use of AI, Robotics, and Modern Tools to Fight Covid-19, ISBN: 978-8-7702-2443-7, River Publishers, 2020
2. Yixin Chen, Heiko Ludwig, Yicheng Tu, Usama M. Fayyad, Xingquan Zhu, Xiaohua Hu, Suren Byna, Xiong Liu, Jianping Zhang, Shirui Pan, Vagelis Papalexakis, **Jianwu Wang**, Alfredo Cuzzocrea, Carlos Ordonez. 2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, December 15-18, 2021. ISBN 978-1-6654-3902-2, IEEE, 2021.

B. Peer-Reviewed Journal Papers

1. Weilong Ding, Tianpu Zhang, Honghao Gao, Qi Yu, **Jianwu Wang**, Zhuofeng Zhao. Multi-Graph Spatio-Temporal Convolution for Traffic Flow Prediction Focusing on Edge Derived Imbalanced Data From Highway Electronics. *IEEE Transactions on Consumer Electronics*, IEEE, 2024.
2. Mitchell Bushuk, Sahara Ali [G], David A. Bailey, Qing Bao, Lauriane Batté, Uma S. Bhatt, Edward Blanchard-Wrigglesworth, Ed Blockley, Gavin Cawley, Junhwa Chi, François Counillon, Philippe Goulet Coulombe, Richard I. Cullather, Francis X. Diebold, Arlan Dirkson, Eleftheria Exarchou, Maximilian Göbel, William Gregory, Virginie Guemas, Lawrence Hamilton, Bian He, Sean Horvath, Monica Ionita, Jennifer E. Kay, Eliot Kim [U], Noriaki Kimura, Dmitri Kondrashov, Zachary M. Labe, WooSung Lee, Younjoo J. Lee, Cuihua Li, Xuewei Li, Yongcheng Lin, Yanyun Liu, Wieslaw Maslowski, François Massonnet, Walter N. Meier, William J. Merryfield, Hannah Myint, Juan C. Acosta Navarro, Alek Petty, Fangli Qiao, David Schröder, Axel Schweiger, Qi Shu, Michael Sigmond, Michael Steele, Julienne Stroeve, Nico Sun, Steffen Tietsche, Michel Tsamados, Keguang Wang, **Jianwu Wang**, Wanqiu Wang, Yiguo Wang, Yun Wang, James Williams, Qinghua Yang, Xiaojun Yuan, Jinlun Zhang, Yongfei Zhang. Predicting September Arctic Sea Ice: A Multi-Model Seasonal Skill Comparison. *Bulletin of the American Meteorological Society (BAMS),* American Meteorological Society, IF: 8.0, Accepted, 2024
3. Adeleke S. Ademakinwa, Zahid H. Tushar, Jianyu Zheng, Chenxi Wang, Sanjay Purushotham, **Jianwu Wang**, Kerry G. Meyer, Tamas Várnai, and Zhibo Zhang. Influence of Cloud Retrieval Errors Due to Three Dimensional Radiative Effects on Calculations of Broadband Cloud Radiative Effect, *EGUsphere*, DOI:10.5194/egusphere-2023-2218, 2024
4. Xin Wang [G], Pei Guo [G], Xingyan Li [G], Aryya Gangopadhyay, Carl Busart, Jade Freeman, **Jianwu Wang**. Reproducible and Portable Big Data Analytics in the Cloud, *IEEE Transactions on Cloud Computing*, vol. 11, no. 3, pages 2966-2982, IEEE, 2023
5. Xin Wang [G], Azim Khan [G], **Jianwu Wang**, Aryya Gangopadhyay, Carl Busart, Jade Freeman. An Edge-Cloud Integrated Framework for Flexible and Dynamic Stream Analytics. *Future Generation*

Computer Systems, vol. 137, pages 323-335, Elsevier, DOI:10.1016/j.future.2022.07.023, 2022

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E. <u>Other Peer-Reviewed Papers</u>

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5. Seraj Al Mahmud Mostafa [G], Jinbo Wang, Benjamin Holt, **Jianwu Wang**. YOLO based Ocean Eddy Localization with AWS SageMaker. Accepted by *the Seventh IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2024) at 2024 IEEE International Conference on Big Data (IEEE Big Data 2024)*, IEEE.

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8. Sahara Ali [G], Yiyi Huang, Xin Huang [G], **Jianwu Wang**. Sea Ice Forecasting using Attention-based Ensemble LSTM. *Tackling Climate Change with Machine Learning workshop at International Conference on Machine Learning (ICML)*, 2021. [Open Access].
9. Matthias K. Gobbert, **Jianwu Wang**. Lessons from an Online Multidisciplinary Undergraduate Summer Research Program. Accepted by the *17th International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS 2021)*, 2021. [Pre-Print].
10. Xin Wang [G], Pei Guo [G], **Jianwu Wang**. Large-Scale Causality Discovery Analytics as a Service. Accepted by the *Fifth IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2021)*, IEEE. [Pre-Print].
11. **Jianwu Wang**, Matthias K. Gobbert, Zhibo Zhang, Aryya Gangopadhyay. Team-Based Online Multidisciplinary Education on Big Data + High-Performance Computing + Atmospheric Sciences. In: Arabnia H.R., Deligiannidis L., Tinetti F.G., Tran QN. (eds) *Advances in Software Engineering, Education, and e-Learning. Transactions on Computational Science and Computational Intelligence*. pages 43-54, Springer, Cham, 2021. DOI: 10.1007/978-3-030-70873-3_4, [Pre-Print].
12. Carlos A. Barajas, Matthias K. Gobbert, **Jianwu Wang**. Tornado Storm Data Synthesization using Deep Convolutional Generative Adversarial Network. In: Stahlbock R., Weiss G.M., Abou-Nasr M., Yang CY., Arabnia H.R., Deligiannidis L. (eds) *Advances in Data Science and Information Engineering. Transactions on Computational Science and Computational Intelligence*. pages 383-388, Springer, Cham, 2020. DOI: 10.1007/978-3-030-71704-9_25, [Pre-Print].
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14. Xin Huang [G], Sahara Ali [G], Sanjay Purushotham, **Jianwu Wang**, Chenxi Wang and Zhibo Zhang. Deep Multi-Sensor Domain Adaptation on Active and Passive Satellite Remote Sensing Data. In Proceedings of the *1st SIGKDD Workshop on Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial 2020)* at 2020 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2020), 2020.
15. Wenbin Zhang [G], Xuejiao Tang, **Jianwu Wang**. On Fairness-Aware Learning for Non-discriminative Decision-Making. In Proceedings of the *2019 International Conference on Data Mining Workshops (ICDMW 2019)*, pages 1072-1079, IEEE, 2019.
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17. Carlos Barajas, Matthias Gobbert, **Jianwu Wang**. Performance Benchmarking of Data Augmentation and Deep Learning for Tornado Prediction. In Proceedings of the *Third IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2019)* at IEEE Big Data Conference (IEEE BigData 2019), pages 3607-3615, IEEE, 2019.
18. Zhong Liu, **Jianwu Wang**, Shimei Pan, David Meyer. Improving Reproducibility in Earth Science Research. Eos, 100, https://doi.org/10.1029/2019EO136216, 2019.

19. Hua Song [G], **Jianwu Wang**, Jing Tian, Jingfeng Huang, Zhibo Zhang. Spatio-Temporal Climate Data Causality Analytics - an Analysis of ENSO's Global Impacts. In Proceedings of the *8th International Workshop on Climate Informatics (CI 2018)*, pages 45-48, 2018.
20. Arjun Pandya [G], Chaitanya Kulkarni [G], Kunal Mali [G], **Jianwu Wang**. An Open Source Cloud-based NoSQL and NewSQL Database Benchmarking Platform for IoT Data. In Proceedings of *2018 BenchCouncil International Symposium on Benchmarking, Measuring and Optimizing (Bench 18)*, pages 65-77, Springer, 2018.
21. Carlos Barajas [G], Pei Guo [G], Lipi Mukherjee [G], Susan Hoban, **Jianwu Wang**, Daeho Jin, Aryya Gangopadhyay, Matthias K. Gobbert. Benchmarking Parallel Implementations of K-Means Cloud Type Clustering from Satellite Data. In Proceedings of *2018 BenchCouncil International Symposium on Benchmarking, Measuring and Optimizing (Bench 18)*, pages 248-260, Springer, 2018.
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23. Pei Guo [G], **Jianwu Wang**, Zhiyuan Chen. A Comparison of Big Data Application Programming Approaches: A Travel Companion Case Study. In Proceedings of the *First International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2017)* at IEEE Big Data Conference (IEEE BigData 2017), pages 2787-2796, IEEE, 2017.
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25. **Jianwu Wang**, Matthias Gobbert, Zhibo Zhang, Aryya Gangopadhyay and Glenn Page. Multidisciplinary Education on Big Data + HPC + Atmospheric Sciences, In Proceedings of the *Workshop on Education for High-Performance Computing (EduHPC-17)* at SC'2017, 2017.
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27. **Jianwu Wang**, Moustafa AbdelBaky, Javier Diaz-Montes, Shweta Purawat, Manish Parashar, and Ilkay Altintas. Kepler + CometCloud: Dynamic Scientific Workflow Execution on Federated Cloud Resources, In Proceedings of *the Third International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications (Kepler 2016)* at the International Conference on Computational Science 2016 (ICCS 2016), pages 700-711, Elsevier, 2016.
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29. Prakashan Korambath, **Jianwu Wang**, Ankur Kumar, Jim Davis, Robert Graybill, Brian Schott, and Michael Baldea. A Smart Manufacturing Use Case: Furnace Temperature Balancing in Steam Methane Reforming Process via Kepler Workflows. In Proceedings of the *International Conference on Computational Science 2016* (ICCS 2016), pages 680-689, Elsevier, 2016.
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31. Prakashan Korambath, **Jianwu Wang**, Ankur Kumar, Lorin Hochstein, Brian Schott, Robert Graybill, Michael Baldea, and Jim Davis. Deploying Kepler Workflows as Services on a Cloud Infrastructure

for Smart Manufacturing. In Proceedings of *the Second International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 14th International Conference on Computational Science (ICCS 2014), pages 2254-2259, Elsevier, 2014.

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33. Zhuofeng Zhao, Jun Fang, Weilong Ding, **Jianwu Wang**. An Integrated Processing Platform for Traffic Sensor Data and Its Applications in Intelligent Transportation Systems, In Proceedings of *IEEE 2014 Second International Workshop on Service and Cloud Based Data Integration (SCDI 2014)*, at the 2014 Congress on Services (SERVICES 2014), pages 161-168, IEEE, 2014.
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35. Pek U. Ieong, Jesper Sorensen, Prasantha L. Vemu, Celia W. Wong, Ozlem Demir, Nadya P. Williams, **Jianwu Wang**, Daniel Crawl, Robert V. Swift, Robert D. Malmstrom, Ilkay Altintas, Rommie E. Amaro. Progress towards automated Kepler scientific workflows for computer-aided drug discovery and molecular simulations. In Proceedings of *the Second International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications* at the 14th International Conference on Computational Science (ICCS 2014), pages 1745-1755, Elsevier, 2014.
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38. Cheng Zhang, **Jianwu Wang**, Xiaofang Zhao and Yanbo Han. An Item-Targeted User Similarity Method for Data Service Recommendation. In Proceedings of *the First International Workshop on Service and Cloud Based Data Integration (SCDI 2012)*, at the 2012 IEEE 16th International Enterprise Distributed Object Computing Conference (EDOC 2012), pages 172-178, 2012.
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41. Zhuohui Gan, **Jianwu Wang**, Nathan Salomonis, Ilkay Altintas, Andrew D. McCulloch, Alex Zambon. MAAMD: A Workflow to Standardize Meta-Analyses of Affymetrix Microarray Data. In Proceedings of *2012 IEEE Second International Conference on Healthcare Informatics, Imaging and Systems Biology (HISB 2012)*, pages 120-120, doi: 10.1109/HISB.2012.45, 2012.

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45. **Jianwu Wang**, Prakashan Korambath, Seonah Kim, Scott Johnson, Kejian Jin, Daniel Crawl, Ilkay Altintas, Shava Smallen, Bill Labate, Kendall N. Houk. Theoretical Enzyme Design Using the Kepler Scientific Workflows on the Grid. In Proceedings of *the Fifth Workshop on Computational Chemistry and Its Applications (5th CCA)* at International Conference on Computational Science (ICCS 2010), 2010.
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47. **Jianwu Wang**, Ilkay Altintas, Parviez R. Hosseini, Derik Barseghian, Daniel Crawl, Chad Berkley, Matthew B. Jones. Accelerating Parameter Sweep Workflows by Utilizing Ad-hoc Network Computing Resources: an Ecological Example. In Proceedings of *IEEE 2009 Third International Workshop on Scientific Workflows (SWF 2009)* at 2009 Congress on Services (Services 2009), pages 267-274, 2009.
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49. Yanbo Han, **Jianwu Wang**, Jun Fang, Guiling Wang. Domain oriented Business Service Modeling and Service Virtualization. *Communications of China Computer Federation*, 4(4), pages 56-63, 2008.
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53. **Jianwu Wang**, Jian Yu, Yanbo Han. A Service Modeling Approach with Business-Level Reusability and Extensibility. In Proceedings of *IEEE International Workshop on Service-Oriented System Engineering (SOSE 2005)*, pages 23-28, IEEE, 2005.
54. **Jianwu Wang,** Yanbo Han, Jing Wang, Gang Li. An Approach to Dynamically Reconfiguring Service-Oriented Applications from a Business Perspective, In Proceedings of *Advanced Workshop on Content Computing (AWCC 2004)*, LNCS 3309, pages 357-368, Springer, 2004.

55. Gang Li, Yanbo Han, Zhuofeng Zhao, **Jianwu Wang**, Roland M. Wagner. An Adaptable Service Connector Model. In Proceedings of *the First International Workshop on Semantic Web and Databases (SWDB 2003)* at VLDB 2003 Conference, 2003, pages 79-90, 2003.

F. Non-Peer-Reviewed Works

1. Achala W. Denagamage, Sahara Ali, Neranga Hannadigee, Xin Huang, Pei Guo, **Jianwu Wang**. Evaluation of Tropical Cloud Simulations between CMIP6 Models and Satellite Observations. Technical Report HPCF-2020-13, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
2. Yiyi Huang, Matthäus Kleindessner, Alexey Munishkin, Debvrat Varshney, Pei Guo, **Jianwu Wang**. Benchmarking of Data-Driven Causality Discovery Approaches in the Interaction between Arctic Sea Ice and Atmosphere. Technical Report HPCF-2020-16, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
3. Carlos A. Barajas, Matthias K. Gobbert, **Jianwu Wang**. Tornado Storm Data Synthesization using Deep Convolutional Generative Adversarial Network (DCGAN): Related Works and Implementation Details, Technical Report HPCF-2020-19, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2020.
4. Reetam Majumder, Redwan Walid, Jianyu Zheng, Carlos Barajas, Pei Guo, Chamara Rajapakshe, Aryya Gangopadhyay, Matthias K. Gobbert, **Jianwu Wang**, Zhibo Zhang, Kel Markert, Amita Mehta, Nagaraj K. Neerchal. Assessing Water Budget Sensitivity to Precipitation Forcing Errors in Potomac River Basin Using the VIC Hydrologic Model. Technical Report HPCF-2019-11, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2019.
5. Steven Randal Hussung, Mengxi Wu, Akila Sampath, Suhail Mahmud, Pei Guo, **Jianwu Wang**. Evaluation of Data-Driven Causality Discovery Approaches among Dominant Climate Modes. Technical Report HPCF-2019-12, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2019.
6. Carlos Barajas, Lipi Mukherjee, Pei Guo, Susan Hoban, Daeho Jin, Aryya Gangopadhyay, **Jianwu Wang**. Benchmarking Parallel Implementations of Cloud Type Clustering from Satellite Data, Technical Report HPCF-2018-12, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
7. Peichang Shi, Qianqian Song, Janita Patwardhan, Zhibo Zhang, **Jianwu Wang**. Mineral Dust Detection Using Satellite Data, Technical Report HPCF-2018-13, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
8. Hua Song, Jing Tian, Jingfeng Huang, **Jianwu Wang**, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation, Technical Report HPCF-2018-14, UMBC High Performance Computing Facility, University of Maryland, Baltimore County, 2018.
9. Yanbo Han, **Jianwu Wang**. Guest Editors' Introduction: Special Issue on Service and Cloud Based Data Integration. Journal of Grid Computing, 12(2), pages 187-189, 2014.

Presentations

A. Conference/Poster Presentations (Juried/Refereed, Selected)

1. Achala Denagamage, Zhibo Zhang, Michal Segal Rozenhaimer, **Jianwu Wang**, Sahara Ali. Evaluation of Low-Cloud and Warm Rain Simulation in CMIP6 Models through Comparisons with Satellite Observations, 13th Symposium on Aerosol - Cloud - Climate Interactions, American Meteorological Society (AMS) Annual Meeting, 2021

2. Yiyi Huang, Matthäus Kleindessner, Alexey Munishkin, Debvrat Varshney, Pei Guo, **Jianwu Wang**. Benchmarking of Data-Driven Causality Discovery Approaches in the Interactions of Arctic Sea Ice and Atmosphere, 20th Conference on Artificial Intelligence for Environmental Science, American Meteorological Society (AMS) Annual Meeting, 2021
3. **Jianwu Wang**, Jianyu Zheng, Xin Huang, Chamara Rajapakshe, Supriya Sangondimath, Sukhada Deshpande, Thomas Maxwell, Zhibo Zhang. Scalable Aggregation Service for MODIS Satellite Remote Sensing Data, Seventh Symposium on High Performance Computing for Weather, Water, and Climate, American Meteorological Society (AMS) Annual Meeting, 2021
4. Steve Hussung, Suhail Mahmud, Akila Sampath, Mengxi Wu, Pei Guo, **Jianwu Wang**. Evaluation of Data-Driven Causality Discovery Methods among Dominant Climate Modes, 19th Conference on Artificial Intelligence for Environmental Science, American Meteorological Society (AMS) Annual Meeting, Oral Presentation, Boston, MA. 2020.
5. Hua Song, **Jianwu Wang**, Jing Tian, Jingfeng Huang, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation. The 1st NOAA Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction, Poster, College Park, MD, 2019.
6. **Jianwu Wang**, Zhibo Zhang, Matthias K. Gobbert, and Aryya Gangopadhyay. Multidisciplinary Education on Big Data + High-Performance Computing+ Atmospheric Sciences. NSF EarthCube 2018 All Hands Meeting, Poster, Washington DC, 2018.
7. Zhong Liu, Shimei Pan, **Jianwu Wang**, Angela Li, David Meyer. Improving NASA Earth Science Data and Information Access Through Natural Language Processing Based Data Analysis and Visualization. NASA Goddard Workshop on Artificial Intelligence, Presentation, Greenbelt, MD, 2018.
8. Hua Song, **Jianwu Wang**, Jing Tian, Jingfeng Huang, Zhibo Zhang. Spatiotemporal Climate Data Causality Analytics: An Analysis of ENSO's Global Impacts, NASA Goddard Workshop on Artificial Intelligence, Poster, Greenbelt, MD, 2018.
9. Hua Song, Jing Tian, Jingfeng Huang, **Jianwu Wang**, Zhibo Zhang. Causality Analysis of ENSO's Global Impacts on Climate Variables based on Data-driven Analytics and Climate Model Simulation. American Geophysical Union (AGU) Fall Meeting, Oral Presentation, Washington DC, 2018.
10. **Jianwu Wang**, Zhibo Zhang, Matthias K. Gobbert, and Aryya Gangopadhyay. Multidisciplinary Education on Big Data + High-Performance Computing+ Atmospheric Sciences. American Geophysical Union (AGU) Fall Meeting, Oral Presentation, Washington DC, 2018.
11. Amrita Anam, **Jianwu Wang**, Qian Zhu, Aryya Gangopadhyay. Analyzing Large-scale Drug Related Data Supported by Graph Modeling: Preliminary Results, AMIA 2016 Annual Symposium, Chicago, IL, 2016.
12. Ilkay Altintas, Daniel Crawl, **Jianwu Wang**. A Distributed Data-Parallel Execution Framework in the Kepler Scientific Workflow System, The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.
13. Ilkay Altintas, **Jianwu Wang**, Daniel Crawl, Shweta Purawat. bioKepler: A Comprehensive Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data, The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.
14. Mai Nguyen, Daniel Crawl, **Jianwu Wang**, Ilkay Altintas. Machine Learning Module for Big Data Analysis in Kepler. The Eleventh Biennial Ptolemy Miniconference, Presentation, University of California, Berkeley, Berkeley, CA, 2015.
15. Ilkay Altintas, **Jianwu Wang**, Mai Nguyen, Tolga Oztan, Douglas White. Workflow-driven science for the synthesis of ecology, biology and ethnographic data. Complex Systems Digital Campus (CS-DC) World e-Conference, ASU-SFI Center for Biosocial Complex Systems, Presentation, Phoenix, Arizona, USA, 2015.

16. Daniel Crawl, **Jianwu Wang**. Shweta Purawat, Ilkay Altintas. Bioinformatics Scientific Workflow Module for Distributed Analysis of Large-Scale Biological Data, DNA Day 2015, Poster, San Diego, CA, 2015.
17. **Jianwu Wang**, Daniel Crawl, Ilkay Altintas, Chad Berkley, Matt Jones. Distributed Execution Architectures in Kepler, The Ninth Biennial Ptolemy Miniconference. Presentation, University of California, Berkeley, Berkeley, CA, 2011

B. Conference/Poster Presentations (Non-Juried/Refereed, Selected)

1. **[Invited Talk]** Reproducible and Portable Big Data Analytics in the Cloud. AI-Ready Data Workshop: Navigating the Dynamic Frontier of Metadata and Ontologies, NSF HDR Institute of Data Driven Dynamical Design (ID4), Drexel University, 2024
2. **[Invited Talk]** Big Climate Data Analytics and Climate Causality Discovery. The International Workshop on Big Data Analytics, SSN College of Engineering, India, Invited Presentation, 2020
3. **[Invited Talk]** Facilitate Parallel Computation using Kepler Workflow System on Virtual Resource. The University of California Cloud (UCCloud) 2011 Summit, UCLA, Invited Presentation, 2011
4. **[Invited Talk]** Accelerating the Scientific Exploration Process with Kepler Scientific Workflow System, The University of California Grid (UCGrid) 2009 Summit, UCLA, Invited Presentation, 2009

C. Other Professional Presentations (Selected)

1. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 Machine Learning Seminar Series, Department of Mathematics and Statistics, UMBC, 2024
2. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 Computer Science Seminar Series, Virginia Tech University, 2024
3. **[Invited Talk]** Exploring AI Techniques for Causal Understanding of Earth Processes and Multi-Satellite Earth Remote Sensing. Spring 2024 EECS Graduate Seminar Series, University of California, Merced, 2024
4. **[Invited Talk]** AI Based Multi-satellite Earth Remote Sensing and Causal Understanding of Earth Processes. Visa Research AI Seminar, VISA, 2024
5. **[Invited Talk]** AI Based Multi-satellite Earth Remote Sensing and Causal Understanding of Earth Processes. Fall 2023 Data Science Seminar Series, Texas A&M Institute of Data Science (TAMIDS), Texas A&M University (TAMU), 2023
6. **[Invited Talk]** Big Data Analytics in the Cloud. Information Science and Systems Department, Morgan State University, 2021
7. **[Invited Talk]** Multidisciplinary Research and Education on Big Data + HPC + Atmospheric Sciences, Data Science Education and Workforce Working Group Webinar Series, Big Data South Hub, 2021
8. **[Invited Talk]** Data-Driven Sea Ice Forecasting and Causality Discovery. NASA GSFC Cryospheric Sciences Lab (615) Seminar, 2021
9. **[Invited Talk]** Developing Passive Satellite Cloud Remote Sensing Algorithms using Collocated Observations, Numerical Simulation and Deep Learning, NASA GSFC Climate & Radiation Laboratory (613) Seminar, 2021
10. **[Invited Talk]** Big Climate Data Analytics. Department of Information Sciences and Technology, George Mason University, 2021
11. **[Invited Talk]** Evaluation of Data-Driven Causality Discovery Methods for El Niño-Southern Oscillation, UMBC 2020 Earth Day Symposium, Invited Presentation, 2020.
12. **[Invited Talk]** Evaluation of Data-Driven Causality Discovery Methods for El Niño-Southern Oscillation, The Statistical and Applied Mathematical Sciences Institute (SAMSI) Causal Discovery Working Group, Invited Presentation, 2020.

13. **[Invited Talk]** Towards Open Smart Manufacturing, National Institute of Standards and Technology (NIST), Gaithersburg, MD, Invited Presentation, 2018.
14. **[Invited Talk]** Embracing Big Data using Scalable Workflows. Intelligent Automation, Inc. (IAI), Rockville, MD, Invited Presentation, 2016.
15. **[Invited Talk]** Embracing Big Data using Scalable Workflows. Bowie State University, Invited Presentation, 2015.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Services to the Department

Spring 2022 - Present	Liaison for Research Innovation
Spring 2022 - Present	Committee Chair, Research Committee
Summer 2022	Committee Member, Merit Review Committee
Fall 2022 - Present	Committee Member, Promotion and Tenure Committee
Fall 2022 - Spring 2023	Committee Member, Launch Committee for New Faculty: Lei Zhang
Fall 2021 - Present	Department Mentor for Lujie Karen Chen
Spring 2021 - Present	Committee Member, IS On-Campus Graduate Committee
Fall 2020 - Spring 2021	Committee Member, Graduate Committee
Fall 2019 - Spring 2021	Committee Member, Assessment Committee
Fall 2017 - Spring 2020	Committee Member, Online Master Graduate Committee
Fall 2017 - Spring 2019	Committee Member, Research Committee
Fall 2018	Invited Panelist, Intro to TechResearch Session & Panel session, Information Systems Council of Majors (ISCOM)
Spring 2018	Department Representor, the UMBC Table Fair Experience for High School Students
Fall 2016 - Spring 2017	Committee Member, Faculty Search Committee (Data Science position)

Services to the College

2023	Committee Member, Committee for Senior Lecturer Promotion Review
2023	Committee Member, Search Committee for iHARP Executive Director
Fall 2022 - Spring 2023	Committee Member, Faculty Search Committee (Open Rank Faculty Positions on Renewable Energy and Sustainability)
Spring 2020	Committee Member, Evaluation Committee for Summer Undergraduate Research Program from the Leadership Alliance Consortium
Fall 2019 - Spring 2020	Committee Member, Faculty Search Committee (GPD for engineering DPS programs)

Services to the University

2024 - 2025	Chair, Research and Creative Achievement Council (RCAC)
2024 - 2025	Member, Research and Creative Achievement (RCA) Data Stewardship Committee
2024 - 2025	Member, International Travel Review Committee
2024 - 2025	Member, Research Center Policy Working Group
2024 - 2025	Member, Academic Analytics Faculty Review Committee (AAFRC)
2024 - 2025	Member, Research Park Advisory Committee (RPAC)
2024 - 2025	Member, Enterprise Risk Management - R-1 Status (RCA) Working Group
Fall 2023	Member, Research Computing Task Force
2022 - 2024	Member, Research and Creative Achievement Council
Spring 2023	Member, UMBC Interdisciplinary PhD Program Initial Planning Committee
2016 - 2024	Member, Faculty Governance Committee for the UMBC High Performance Computing Facility (HPCF)
2019, 2020	Research Mentor, Summer LSAMP Research Experience, USM Louis Stokes Alliances for Minority Participation (LSAMP) Program

Services to the Community

2020 - Present	Research Mentor, High School Student Research via Ingenuity Innovation Practicum, the Ingenuity Project, Baltimore, MD
2019, 2020	Research Mentor, Summer Undergraduate Research Program, the Leadership Alliance Consortium
2020	Team Mentor, Data Exploration for a Sustainable Planet, UMD Data Challenge 2020, College Park, MD
2018	Team Mentor, Tech + Research: Welcoming Women to Computing Research, College Park, MD

Services to the Profession

A. Editorship

2016 - Present	Editor, Future Generation Computer Systems (FGCS), Elsevier Press
2018 - Present	Editor, Frontiers in Big Data, Frontiers Press
2021 - Present	Editor, BenchCouncil Transactions on Benchmarks, Standards and Evaluations (TBench), Elsevier Press
2020	Book Editor, Use of AI, Robotics, and Modern Tools to Fight Covid-19, River Publishers
2020	Guest Editor, Special Issue on Benchmarking, Performance Tuning and Optimization for Big Data Analytics, Big Data Research, Elsevier Press
2020	Guest Associate Editor, Special Section on Computational Intelligence and Big Data for Scientific and Technological Resources and Services, IEICE Transactions on Information and Systems
2015 - 2017	Editor, Services Transactions on Internet of Things (STIOT)
2013 - 2016	Associate Editor, International Journal of Computers and Their Applications (IJCA)
2012 - 2015	Editor, Cluster Computing, Springer Press
2017 - 2018	Guest Editor, Special Issue on Big Data in Ubiquitous Computing, IEEE Transaction on Big Data
2014	Guest Editor, Special Issue on Service and Cloud Based Data Integration, Journal of Grid Computing, Springer Press

B. Conference Organization Committee

1. Publicity Chair, 23rd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2023)
2. Publication Chair, 24th International Conference on Distributed Computing and Networking (ICDCN 2023)
3. Program Chair, 2022 IEEE/ACM 9th International Conference on Big Data Computing, Applications and Technologies (BDCAT 2022)
4. Publication Chair, 23rd International Conference on Distributed Computing and Networking (ICDCN 2022)
5. Workshop Chair, 2021 IEEE International Conference on Big Data (IEEE BigData 2021)
6. Poster Chair, 2020 IEEE International Conference on Big Data (IEEE BigData 2020)
7. Student Travel Award Chair, 2019 IEEE International Conference on Big Data (IEEE BigData 2019)
8. Poster Chair, 2019 IEEE 15th International eScience Conference (IEEE eScience 2019)
9. Student Travel Award Chair, 2017 IEEE International Conference on Big Data (IEEE BigData 2017)
10. Short Paper Track Chair, The Sixth IEEE International Congress on Big Data (BigDataCongress 2017)

11. Area Chair, Scientific Workflows, The 13th IEEE International Conference on Services Computing (SCC 2016)
12. Track Chair, Internet of Things (IoT) and Collaboration, The 13th EAI International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2017)
13. Poster Chair, 2016 IEEE International Conference on Big Data (IEEE BigData 2016)
14. Journal Special Issue Chair, The 14th IEEE International Conference on Ubiquitous Intelligence and Computing (IEEE UIC 2017)

C. Workshop Co-Chair

1. National Symposium for Undergraduate Research in Data Science, Systems, and Security (REU Symposium), 2021 - Present
2. The International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD), 2017 - 2022
3. The Third International Workshop on Advances in the Kepler Scientific Workflow System and Its Applications (Kepler 2016)
4. The International Workshop on Service and Cloud Based Data Integration (SCDI), 2012, 2014
5. The Second International Workshop on Advances in Data and Information Management: Recent Advances of Cloud Computing in Data and Information Management (ADIM 2011)

D. Proposal/Panel/Tenure Review

1. Tenure Review for a Peer Institution in the University of California System, 2023
2. Research Faculty Promotion Review for a Peer Institution in Virginia, 2023
3. National Science Foundation (NSF), 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
4. National Research and Development Agency (ANID) of Chile, 2022
5. Climate Change AI Innovation Grants Program, 2021, 2023
6. Army Research Office (ARO), 2019
7. Austrian Science Fund (FWF), 2019
8. National Aeronautics and Space Administration (NASA), 2018
9. Ontario Genomics Institute, Canada, 2014

E. Conference Program Committee Member (Selected)

1. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2024-Present
2. International Conference on Pattern Recognition (ICPR), 2024-Present
3. The Conference on Uncertainty in Artificial Intelligence (UAI), 2023
4. International Joint Conference on Artificial Intelligence (IJCAI), 2023-Present
5. The Web Conference (Previously known as WWW conference), 2023-Present
6. SIAM International Conference on Data Mining (SDM), 2023
7. International Conference on Artificial Intelligence and Statistics (AISTATS), 2023
8. International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), 2022
9. ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), 2021-Present
10. IEEE International Conference on Distributed Computing Systems (ICDCS), 2021
11. IEEE Global Communications Conference, Big Data Area (IEEE GLOBECOM), 2019-Present
12. IEEE International Conference on Big Data (IEEE BigData), 2015-Present
13. International Conference on Service Oriented Computing (ICSOC), 2012-Present
14. IEEE International Conference on eScience (IEEE eScience), 2010, 2011, 2016, 2019
15. International Conference on Parallel Processing (ICPP), 2019-2021

16. IEEE International Congress on Big Data (IEEE BigDataCongress), 2013-2019
17. The International Conference on Computational Science (ICCS), 2016-Present
18. IEEE International Conference on Data Engineering (ICDE), 2017
19. The 14th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2017)
20. The IEEE International Conference on Services Computing (SCC), 2012, 2013, 2017
21. The Second IEEE International Congress on Internet of Things Services (ICIOT 2017)
22. The IEEE International Conference on Big Data Computing Service and Applications (IEEE BigDataService), 2015-2017
23. The First International Conference on Internet of Things Services (S2 IOTS 2016)
24. The 18th International Conference on Information Integration and Web-based Applications & Services (iiWAS 2016)
25. The 10th International Conference on Asia-Pacific Services Computing (APSCC 2016)
26. The Third IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT 2016)
27. International IEEE Symposium on Big Data Management and Analytics (BIDMA 2016)
28. The 21st IEEE International Conference on Parallel and Distributed Systems (ICPADS 2015)
29. The 27th International Conference on Scientific and Statistical Database Management (SSDBM 2015)
30. The IEEE Sixth International Conference on Cloud Computing Technology and Science (CloudCom 2014)
31. The 2014 Asia-Pacific Services Computing Conference (APSCC 2014)
32. The Ninth International Conference on Mobile Web Information Systems (MobiWIS 2012)
33. The 21st International Conference on Collaboration Technologies and Infrastructures (WETICE-2012)
34. The Third International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA 2011)
35. The 22nd the International Conference on Scientific and Statistical Database Management (SSDBM 2010)

F. Workshop Program Committee Member (Selected)

1. The Third Big Data Analytic Technology for Bioinformatics and Health Informatics Workshop (KDDBHI 2016)
2. The International Workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR) 2015-2016
3. The International Workshop on Machine Learning, Optimization and Big Data (MOD), 2015-2016
4. The International Symposium on Foundations and Applications of Big Data Analytics (FAB 2015)
5. The International Workshop on Context-Awareness and Personalization in Cloud and Service Computing (PCS) 2013-2014
6. The International Workshop on Scientific Workflows (SWF), 2010-2014
7. The International Workshop on e-Science and Social Network (eSoN), 2012-2014
8. The International Workshop on Sensor Data Processing and Integration (SDPI 2013)
9. The International Workshop on Workflow Management in Service and Cloud Computing (WMSC), 2009-2013
10. The International Workshop on Scalable Workflow Enactment Engines and Technologies (SWEET), 2012-2013
11. The International Workshop on Workflow Models, Systems, Services and Applications in the Cloud (CloudFlow), 2012-2013
12. The First IEEE/ACM Workshop on the application of Social Networking concepts to Cluster, Cloud, Grid and Services Computing (SN4CCGridS)

G. Conference Session Chair (Selected)

CURRICULUM VITAE

1. 2016 IEEE International Conference on Big Data (IEEE BigData 2016)
2. The International Conference on Computational Science (ICCS 2016)
3. The 13th International Conference on Service Computing (SCC 2016)
4. IEEE Ninth International Conference on Web Services (ICWS 2011)

H. Book Editorial Advisory Board Member

1. Principles, Methodologies, and Service-Oriented Approaches for Cloud Computing, IGI Global Press, 2013
2. Service-Driven Approaches to Architecture and Enterprise Integration, IGI Global Press, 2013

I. Journal Reviewer (Selected)

1. ACM Computing Surveys
2. Journal of Grid Computing, Springer Press
3. IEEE Transactions on Services Computing
4. IEEE Transactions on Automation Science and Engineering
5. IEEE Transactions on Emerging Topics in Computing
6. IEEE Transactions on Cloud Computing
7. IEEE/ACM Transactions on Computational Biology and Bioinformatics
8. Information Systems Frontiers, Springer Press

CURRICULUM VITAE

MOHAN K SUNDARAM

EDUCATION

M.S.	1983	Case Western Reserve University	Operations Research
M.TECH	1976	Indian Institute of Technology India	Industrial Engineering
B.TECH	1974	Indian Institute of Technology, India	Chemical Engineering

Experience in Higher Education

2022 – Now	UMBC	Lecturer	Information Systems
2017-2022	UM-College Park	Adjunct/Fulltime	Data Science
	Towson University	Lecturer	Statistics
	Johns Hopkins		Management Science
	Univ of Balt		Operations Mgmt
	UMBC		Data / Business Analytics
2015 - 2017	Cleveland State U	Visiting Lecturer	OM, Stats, Mgt Sci.
2010 – 2015	Cleveland State U	Adjunct Lecturer	OM, Stats, Mgt Sci.
1988 – 1994	John Caroll Univ	Adjunct Lecturer	OM, Stats, Mgt Sci.
	Kent State Univ		
	Case Western		
	Cleveland State U		

Experience in Other than Higher Education

2003 - 2015	General Electric	Cleveland	Supply Chain Manager
2001 – 2003	General Electric	Cleveland	Digitization Leader
1998 – 2001	General Electric	Cleveland	Manager – Logistics
1997 – 1998	General Electric	Cleveland	Product Manager
1984 – 1997	General Electric	Cleveland	Forecast/Materials Specialist

Honors Received

2024	ALIT Certification	FDC, UMBC
19xx	CPIM Certification	APICS
20xx	6 Sigma Certification	GE

Service:

Department	2024 – 2025	Member	Adjunct Faculty Committee
	2024 – 2025	Member	Honors and Awards Committee
	2022 – 2025	Member	Undergraduate
University	2023 – 2025	Board Member	AAAFSC
	2023 – 2025	Member	FLC
Community	2023 – 2025	President	HOA, Taylor Village
	2021 – 2025	Notary Public	State of Maryland
	2015 – 2025	Community Service	SV Temple, Lanham

CURRICULUM VITAE

TERA L. REYNOLDS

EDUCATION

Ph.D.	2021	University of California, Irvine, Informatics
M.A.	2016	University of Michigan, Ann Arbor, Information
M.P.H.	2011	Boston University, Epidemiology, International Health
B.A.	2007	Lawrence University, Biology

EXPERIENCE

Experience in Higher Education

2021 – Present	University of Maryland, Baltimore County, Assistant Professor, Information Systems
2016 – 2021	University of California, Irvine, Graduate Student Researcher, Informatics
2016 – 2017	University of California, Irvine, Teaching Assistant, Informatics
2015 – 2016	University of Michigan, Ann Arbor, Graduate Student Instructor, Information
2014 – 2016	University of Michigan, Ann Arbor, Graduate Student Researcher, Information

Experience in Other than Higher Education

2011 – 2014	Program Manager, International Society for Disease Surveillance, Boston, MA
2010 – 2011	Health Education Intern, Boston University Student Health Services, Boston, MA
2010 – 2010	Brazilian Internet Use Data Analysis Intern, Institute for Community Health, Boston, MA
2010 – 2010	Trachoma Project Monitoring and Evaluation Intern, School for Field Studies, Loitokitok District, Kenya

AWARDS, RECOGNITIONS, AND FUNDING

Honors Received

2024	Best Paper, Conference on Human Factors in Computing Systems (CHI)
2020	AMIA Consumer and Pervasive Health Working Group Student Paper Award
2019	Fred M. Tongue Endowed Graduate Award in ICS
2019 – 2021	GAANN Fellowship in Socially-Responsible AI
2011	Delta Omega Honorary Society in Public Health, Member, Boston University School of Public Health

Research Support and/or Fellowships

2024 – 2025	$75,000, PI, Google Academic Research Award (GARA)
2024 – 2025	$30,000, PI, UMBC Cybersecurity Institute Exploratory Project
2024 – 2029	$ 2,355,706, Co-I, National Institutes of Health (NIH)
2024 – 2025	$4,950, Co-PI, UMBC Faculty Entrepreneurship Accelerator Fund (FEAT)
2024 – 2025	$10,000, PI, University of Maryland, Baltimore Institute for Clinical & Translational Research, Community-Engaged Research (CEnR) Voucher
2023 – 2024	$49,252, PI, University of Maryland, Baltimore Institute for Clinical &

	Translational Research, Community-Engaged Research (CEnR) Award
2022 – 2024	$3,450, Co-I, UMBC Hrabowski Innovation Fund Seed Award
2022 – 2023	$1,500, PI, UMBC Supplement for Undergraduate Research Experiences (SURE)

RESEARCH MENTORING

Ph.D. Students

Melissa Carraway, In progress, Human Centered Computing, Chair
Bianka Onwumbiko, In progress, Human Centered Computing, Co-Chair
Lewis Davis, In progress, Human Centered Computing, Chair
Pronob Kumar Barman, Advanced to Candidacy May 2024, Information Systems, Co-Chair
Md Alomgeer Hussein, In progress, Information Systems, Chair
Rachael Kang, In progress, Human Centered Computing, Chair
Zainab Balogun, In progress, Human Centered Computing, Chair
Sancharee Hom Chowdhury, Advanced to Candidacy August 2024, Information Systems, Committee
Hasan Mahmud Prottoy, Advanced to Candidacy September 2024, Human Centered Computing, Committee
Vasundhara Joshi, In progress, Human Centered Computing, Committee
Kelvin Echenim, In progress, Information Systems, Committee
Kiran Prabhu, Research Assistant, Spring 2022, Information Systems

Master's Students

Parijat Saxena, Research Assistant, Summer 2022, Information Systems
Pravin Wamanrao Mohature, Research Assistant, Spring 2022, Information Systems
Bhanuprakash Nagarimadugu, Research Assistant, Spring 2022, Information Systems
Shyam Ravichandran, Research Assistant, Spring 2022, Information Systems
Nabile Mirza, Intern, 2012 – 2013, International Society for Disease Surveillance

Undergraduate Students

Carly Shearer, Research Assistant, Spring 2024, University of Maryland, Baltimore County
Lydia Mayenge, Research Assistant, Spring 2024, University of Maryland, Baltimore County
Anu Olutoye, SURE Research Assistant, Spring 2023, University of Maryland, Baltimore County
Jiawen Zhang, Research Assistant, 2020-2021, University of California, Irvine, Mentor (*Kai Zheng, Faculty Advisor)*
Meghna Kaligotla, Research Assistant, 2020-2021, University of California, Irvine, Mentor (*Kai Zheng, Faculty Advisor)*
Nida Ali, Internship Preceptor, 2015-2016, University of Michigan, Ann Arbor, Mentor (*Kai Zheng, Faculty Advisor)*
Emma McGregor, Research Assistant, 2015, University of Michigan, Ann Arbor, Mentor (*Kai Zheng, Faculty Advisor)*

High School Students

Austyn Nguyen, Research Assistant, Centennial High School, Ellicott City, MD, 2023–Present
Hibah Mehreen, Research Assistant, Centennial High School, Ellicott City, MD, 2023–Present

Independent Studies

PhD Students

Fall 2024 – Present, Melissa Carraway, Human-Centered Computing
Spring 2024 – Present, Lewis Davis, Human-Centered Computing
Fall 2023 – Present, Rachael Kang, Human-Centered Computing
Fall 2023 – Present, Md Alomgeer Hussein, Information Systems
Spring 2022 – Present, Zainab Balogun, Human-Centered Computing

Master's Students

Fall 2024, Amudhasurabhi Aravindan, Human-Centered Computing
Fall 2024, Joe Allan Athimala Maria, Human-Centered Computing
Fall 2024, Gargi Nandkumar Khanvilkar, Human-Centered Computing
Spring 2024, Valli Pattikonda, Human-Centered Computing
Spring 2024, Neel Bhesaniya, Human-Centered Computing
Spring 2024, Siddharth Monga, Human-Centered Computing
Fall 2023, Spring 2024, Smriti Khilnani, Information Systems
Fall 2023, Lewis Davis, Information Systems
Fall 2023, Jayesh Naik, Information Systems
Spring 2023, Shikha Jaitwar, Information Systems
Spring 2023, Sayali Pramod Babhulgaonkar, Information Systems
Spring 2023, Sumati Mane, Information Systems
Spring 2023, Abhishek Patharkar, Information Systems
Spring 2023, Rushabh Shah, Information Systems
Spring 2023, Dharmi Sanjay Shah, Information Systems
Spring 2023, Juhi Shah, Information Systems
Summer 2022, Parijat Saxena, Information Systems
Summer 2022, Pravin Wamanrao Mohature, Information Systems
Summer 2022, Bhanuprakash Nagarimadugu, Information Systems
Spring 2022, Apurva Raje, Information Systems

Undergraduate Students

Spring 2024, Danielle Anane, Information Systems
Spring 2022, Beamlak Bekele, Information Systems

PUBLICATIONS, PRESENTATIONS, AND CREATIVEACHIEVEMENTS

Publications

It is the convention in my field to order author names by contribution and for the primary author's name to appear first and the most senior author's name to be listed last when they had significant input in the design of the study and in the manuscript. If the first two authors contributed equally, it is denoted with an asterisk (*). If all authors contributed equally, then names are listed in alphabetical order. Students are denoted with this (§) symbol.

Peer-Reviewed Works

Peer-Reviewed Journal Articles

[J11] **Reynolds T.L.**, Cobb J.G., Steitz B.D., Ancker J., Rosenbloom S.T. The State of the Art of

Patient Portals: Adapting to External Factors, Addressing Barriers, and Innovating. *Applied Clinical Informatics Journal (ACI)*, 2023. doi: 10.1055/s-0043-1770901.

[J10] Tran B.D., Latif K., **Reynolds T.L.**, Park J., Elston Lafata J., Tai-Seale M., Zheng K., "Mm-hm," "Uh-uh": are non-lexical conversational sounds deal breakers for the ambient clinical documentation technology?, *Journal of the American Medical Informatics Association*, 2023. doi: https://doi.org/10.1093/jamia/ocad001

[J9] He L.*, He C.*, **Reynolds T.L.**, Bai Q., Huang Y., Li C., Zheng K., Chen Y. Why Do People Oppose Mask Wearing? A Comprehensive Analysis of US Tweets During the COVID-19 Pandemic. J Am Med Inform Assoc. Published online March 2021: ocab047. doi:10.1093/jamia/ocab047.

[J8] Caldeira C., Gui X., **Reynolds T.L.**, Bietz M., Chen Y. Managing Healthcare Conflicts when Living With Multiple Chronic Conditions. *International Journal of Human-Computer Studies*. Published online June 2020:102494. doi:10.1016/j.ijhcs.2020.102494.

[J7] Gui X., Chen Y., Zhou X., **Reynolds T.L.**, Zheng K., Hanauer D.A. Physician champions' perspectives and practices on electronic health records implementation: challenges and strategies. *JAMIA Open*. Published online January 7, 2020:ooz051. doi:10.1093/jamiaopen/ooz051.

[J6] Hussain M.I., **Reynolds T.L.**, Zheng K. Medication safety alert fatigue may be reduced via interaction design and clinical role tailoring: a systematic review. *JAMIA*. 2019; 26(10): 1141-1149. doi:10.1093/jamia/ocz095.

[J5] **Reynolds T.L.**, DeLucia P.R., Esquibel K.A., Gage T., Wheeler N.J., Randell J.A., Stevenson J.G., and Zheng K. Evaluating a Handheld Decision Support Device in Pediatric Intensive Care Settings. *JAMIA Open*. 2019; 2(1): 49-61. doi:10.1093/jamiaopen/ooy055.

[J4] Zheng K., Abraham J., Novak L.L., **Reynolds T.L.**, Getting A. A survey of the literature on unintended consequences associated with health information technology: 2014–2015. *Yearb Med Inform*. 2016. doi:10.15265/IY-2016-036.

[J3] Charles-Smith L.E., **Reynolds T.L.**, Cameron M.A., et al. Using Social Media for Actionable Disease Surveillance and Outbreak Management: A Systematic Literature Review. *PLOS ONE*. 2015; 10(10):e0139701. doi:10.1371/journal.pone.0139701.

[J2] Dórea F.C., Dupuy C., Vial F., **Reynolds T.L.**, Akkina J.E. Toward One Health: are public health stakeholders aware of the field of animal health? *Infection Ecology & Epidemiology*. 2014;4(0). doi:10.3402/iee.v4.24267.

[J1] Mirza N.,§ **Reynolds T.**, Coletta M., Suda K., Soyiri I., Markle A., Leopold H., Lenert L., Samoff E., Siniscalchi A., Steichert L. Steps to a sustainable public health surveillance enterprise a commentary from the international society for disease surveillance. *Online Journal of Public Health Informatics*. 2013; 5(2): 210. doi:10.5210/ojphi.v5i2.4703.

Peer-Reviewed Conference Proceedings

[C15] Balogun Z.A.,§ Barman P.K.,§ Onwumbiko B.,§ **Reynolds T.L.** A Computationally-guided Qualitative Analysis to Understand User Experiences with Different Types of Mobile Personal Health Records. In: *AMIA Annual Symposium Proceedings.* San Francisco, CA, USA; 2024. *(Accepted)*

[C14] Clark O., Joshi K.P., **Reynolds T.L.** Global Relevance of Online Health Information Sources: A Case Study of Experiences and Perceptions of Nigerians. In: *AMIA Annual Symposium Proceedings.* San Francisco, CA, USA; 2024. *(Accepted)*

[C13] Kang R.M.§ and **Reynolds T.L.** 2024. "This app said I had severe depression, and now I don't know what to do": the unintentional harms of mental health applications. In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24), May 11–16, 2024, Honolulu, HI, USA. ACM, New York, NY, USA, 17 pages. https://doi.org/10.1145/3613904.3642178

[C12] Khoo Y.X., Kang R.M.,§ **Reynolds T.L.**, and Mentis H.M. 2024. "That's Kind of Sus(picious)": The Comprehensiveness of Mental Health Application Users' Privacy and Security Concerns. In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24), May 11–16, 2024, Honolulu, HI, USA. doi: 10.1145/3613904.3642705.

[C11] **Reynolds T.L.**, Kaligotla M.,§ Zheng K. Investigating the Interoperable Health App Ecosystem at the Start of the 21st Century Cures Act. *AMIA Annual Symposium*. Washington, D.C. 2022. PMID: 37128391.

[C10] Balogun Z.A.§ and **Reynolds T.L.** Patient Portal Uptake, Use, and Satisfaction among U.S. Adults in Late-stage COVID-19 Pandemic. 10th IEEE International Conference on Healthcare Informatics (ICHI). Rochester, MN. 2022. doi: 10.1109/ICHI2022.2022.00060.

[C9] **Reynolds T.L.**, Zhang J.,§ Zheng K., and Chen Y. Unpacking the Use of Laboratory Test Results in an Online Health Community throughout the Medical Care Trajectory. *Proceedings of the ACM on Human-Computer Interaction*. 2022;6 (CSCW). doi: https://doi.org/10.1145/3555086.

[C8] Lu X., **Reynolds T.L.**, Jo E., Hong H., Page X., Chen Y., and Epstein D. Comparing Perspectives around Human and Technology Support for Contact Tracing. In: *CHI Conference on Human Factors in Computing Systems (CHI '21)*. Yokohama, Japan; 2021. doi:10.1145/3411764.3445669

[C7] **Reynolds T.L.**, Ali N.,§ and Zheng K. What Do Patients and Caregivers Want? A Systematic Review of User Suggestions to Improve Patient Portals. In: *AMIA Annual Symposium Proceedings.* Virtual; 2020. PMID: 33936483.

[C6] **Reynolds T.L.**, Clay B., Rudkin S.E., Beckham S., Perret D., Glandorf J., Patton P., Longhurst C., and Zheng K. Migrating from One Comprehensive Commercial EHR to Another: Perceptions of Front-line Clinicians and Staff. In: *AMIA Annual Symposium Proceedings.* Washington, D.C.; 2019. PMID: 32308872.

[C5] Costa Figueiredo M., Caldeira C., **Reynolds T.L.**, Victory S., Zheng K., Chen Y. Self-Tracking for Fertility Care: Collaborative Support for a Highly Personalized Problem. *Proceedings of the ACM on Human-Computer Interaction*. 2017;1 (CSCW):1-21. doi:10.1145/3134671.

[C4] Eletriby M.R., **Reynolds T.L.**, Jain R., Zheng K. Investigating named entity recognition of contextual information in online consumer health text. In: *2017 Eighth International Conference on Intelligent Computing and Information Systems (ICICIS)*; 2017:396-402. doi: 10.1109/INTELCIS.2017.8260078.

[C3] **Reynolds T.L.,** Ali N.,§ McGregor E.,§ et al. Understanding Patient Questions about their Medical Records in an Online Health Forum: Opportunity for Patient Portal Design. In: *AMIA Annual Symposium Proceedings.* Washington, D.C.; 2017. PMID: 29854216.

[C2] Gui X., Wang Y., Kou Y., **Reynolds T.L.**, Chen Y., Qiaozhu M., Zheng K. Understanding the Patterns of Health Information Dissemination on Social Media during the Zika Outbreak. In: *AMIA Annual Symposium Proceedings.* Washington, D.C.; 2017. PMID: 29854148.

[C1] Hussain M.I., **Reynolds T.L.**, Mousavi F.E., Chen Y., Zheng K. Thinking Together: Modeling Clinical Decision-Support as a Sociotechnical System. In: *AMIA Annual Symposium Proceedings.* Washington, D.C.; 2017. PMID: 29854164.

Peer-Reviewed Workshop Papers

[W2] Clark O., **Reynolds T.L.**, Ugwuabonyi E.C., and Joshi K.P. 2024. Exploring the Impact of Increased Health Information Accessibility in Cyberspace on Trust and Self-care Practices. In Proceedings of 2024 ACM Workshop on Secure and Trustworthy Cyber-Physical Systems (SaT-CPS '24) (ACM SaT-CPS 2024). ACM, New York, NY, USA.

[W1] **Reynolds T.L.**, McGregor E.,§ Zheng K. "Where am I?" Finding Patients in the Process of Navigating a Complex Clinical Information Space. *WISH @ AMIA*. Washington, D.C.; 2017.

Peer-Reviewed Abstracts

[A13] Davis L. II,§ Balogun Z.A.,§ Zimmerman L., Chung Kim Y., Yus R., Doran K., Holmes S., and **Reynolds T.L.** Co-designing Sensorization Plans in the Nursing Home Setting. AMIA Annual Symposium. San Francisco, CA, USA; 2024. *(Accepted)*

[A12] Kang R.M.,§ Monga S.,§ Bhesaniya N.,§ Arashad M.,§ and **Reynolds T.L.** Increasing Health Insurance Literacy Among International Student: Preliminary Results of a User-centered Design Study. AMIA Annual Symposium. San Francisco, CA, USA; 2024. *(Accepted)*

[A11] Onwumbiko B.,§ Balogun Z.,§ Waldstein S., **Reynolds T.L.** Patients' perceptions of the role that health technologies play in cardiometabolic risk self-management. In: 45th Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine. Philadelphia, PA, USA; 2024.

[A10] **Reynolds T.L.**, Kaligotla M.,§ Zheng K. Are Smartphone-based Interconnected Personal Health Records Achieving Their Promise? In: *AMIA Annual Symposium Proceedings.* San Diego, CA, USA; 2021.

[A9] **Reynolds T.L.**, Gui X, Chen Y, Zheng K. Understanding U.S. Adults' Zika Virus Risk Perceptions and Mitigation Behaviors to Improve Technology-supported Risk Communication. Stud Health Technol Inform. In: *Medinfo 2019 Proceedings*. doi: 10.3233/SHTI190691.

[A8] Brannon E.S., **Reynolds T.**, Fu S., Harden K., Okullo D., and Ramani S. An eHARS Dashboard for State HIV Surveillance. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2016; 8(1). doi: 10.5210/ojphi.v8i1.6509.

[A7] **Reynolds T.L.**, Vydiswaran V.G.V., Wu Y., Mei Q., Hanauer D.A., Zheng K. Identifying Patterns Indicative of Copying/Pasting Behavior in Patient Generated Online Content. In: *AMIA Annual Symposium Proceedings.* San Francisco, CA, USA; 2015.

[A6] **Reynolds T.,** Gordon S., Soper P., Buehler J., Hopkins R., and Streichert L. Syndromic Surveillance Practice in the United States 2014: Results from a Nationwide Survey. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2015; 7(1): e90. doi: 10.5210/ojphi.v7i1.5756.

[A5] Suda K.J., **Reynolds T.**, Akkina J., Halasz S., and Burkom H. Where do you Find Interesting Biosurveillance Publications? Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2015; 7(1). doi: 10.5210/ojphi.v7i1.5831.

[A4] **Reynolds T.**, Cameron M., Conway M., Ising A., Lau E.H.Y., Olsen J., Pavlin J., Storm B., Suda K., and Corley C. Using Social Media for Biosurveillance: Gap between Research and Action. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2014; 6(1). doi: 10.5210/ojphi.v6i1.5195.

[A3] **Reynolds T.**, Storm B., Fine A., Burkom H., Stout T., and Del Rio Vilas V. Results from the Biosurveillance Technical Opportunity Prioritization Survey. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2014; 6(1). doi: 10.5210/ojphi.v6i1.5160.

[A2] **Reynolds T.**, Suda K., Reeder B., Storm W., Ozonoff A., and Burkom H. Collaboration for Improved Disease Surveillance Literature Review. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2013; 5(1). doi: 10.5210/ojphi.v5i1.4375.

[A1] **Reynolds T.**, Painter I., and Streichert L. Data Quality: A Systematic Review of the Biosurveillance Literature. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2013; 5(1). doi: 10.5210/ojphi.v5i1.4376.

Non-Peer Reviewed Works

Non-Peer Reviewed Abstracts

[NA2] **Reynolds T.L.** Cultivating a Personalized Digital Health Ecosystem to Support Complex Health Needs. *Challenges, Tensions, and Opportunities in Designing Ecosystems to Support the Management of Complex Health Needs Workshop @ CHI*. New Orleans, LA; 2022.

[NA1] **Reynolds T.L.** "Designing Health Interface Technologies to Support Patients' and Healthcare Providers' Individual and Collaborative Work." *IEEE International Conference on Healthcare Informatics (ICHI) 2020 Doctoral Consortium* . Virtual; 2020. doi:10.1109/ICHI48887.2020.9374368.

Works Submitted

Conference Proceedings

[WS1] Balogun Z.A.,§ Onwumbiko B.,§ **Reynolds T.L.** Patient Work with their Medical Records Post-21st Century Cures Act.

In Preparation

Conference Proceedings

[IPC2] Posada J., Kumar A., Olutoye A.,§ Alhashishi L., **Reynolds T.L.**, and Kleinsmith A. Co-designing a Social Biosignal Sharing App with Women Transfer Students.

[IPC1] Kang R.M.§, Yus R., **Reynolds T.L.** Acceptance of Occupancy Dashboards among Undergraduate Students: Towards Everyday Decision-making Infrastructure that can be Leveraged in Pandemics.

Journal Articles

[IPJ3] He L., Hussein M.A.,§ **Reynolds, T.L.** Evaluating Large Language Model-generated Responses to Patients' Questions: A Patient-centered Approach

[IPJ2] Hussein M.A.,§ Nguyen A.,§ Kang R.M.,§ **Reynolds, T.L.** A Systematic Review of the Literature on Patient-facing AI: Sociotechnical Challenges and Opportunities.

[IPJ1] Balogun Z.A.,§ Shah J., Oguike D., **Reynolds T.L.** U.S. Adult Perceptions of Accessing and Leveraging Clinical Data using Mobile Interconnected Personal Health Records *(working title)*.

Media Coverage

Study Results from University of Maryland Broaden Understanding of Human-Computer Interaction (Unpacking the Use of Laboratory Test Results in an Online Health Community throughout the Medical Care Trajectory) *Computer Weekly News*. November 30, 2022

Study looks at pandemic changes, health care worker burnout. American Academy of Pediatrics News Release. *EurekAlert!* and *Medical Xpress*, October 2021

Presentations

Invited Talks

Commentator, "Community-based Health Technologies: Opportunities and Challenges for the Elderly & People with Disabilities" Symposium on the International Translation of the Adaptive Physical Activity Program. University of Maryland, Baltimore County; Apr. 18, 2023.

Speaker, *"What Do Patients and Caregivers Want? A Systematic Review of User Suggestions to Improve Patient Portals."* Consumer and Pervasive Health Working Group Meeting. AMIA Annual Symposium. Virtual; Nov. 15, 2020.

Conference Poster Presentations (Juried/Refereed)

"Are Smartphone-based Interconnected Personal Health Records Achieving Their Promise?" AMIA Annual Symposium 2021, San Diego, CA, USA; Nov. 2, 2021.

"The Impact of COVID-19 and the Rapid Adoption of Telehealth on Provider Burnout in a Pediatric Healthcare Organization" AAP 2021, Virtual; Oct. 9, 2021.

"Understanding U.S. Adults' Zika Virus Risk Perceptions and Mitigation Behaviors to Improve Technology-supported Risk Communication." Medinfo 2019, Lyon, France; August 24, 2019.

"Identifying Patterns Indicative of Copying/Pasting Behavior in Patient Generated Online Content." AMIA Annual Symposium 2015, San Francisco, CA, USA; November 16, 2015.

Other Professional Presentations

Speaker, Health Information Technology, Open HIT Seminar, UMBC, November 2023

Speaker, Human-Computer Interaction, Open HCC Seminar, UMBC, October 2023

Guest Lecturer, Public Health Communication (graduate), "Technology-mediated Patient-provider Communication," School of Public Health, University of Maryland, College Park. April 2022.

Speaker, *"Designing Health Interface Technologies to Support Patient Work*," Open HIT Seminar, UMBC, December 2021.

Speaker, *"Who's Left Behind by Smartphone-based Personal Health Records?," WISH @ AMIA*, Virtual, November 2020.

Guest Lecturer, Consumer Health Informatics (graduate), *"Personal Health Records and Patient Portals,"* Donald Bren School of Information and Computer Sciences, University of California, Irvine. January 2021.

Guest Lecturer, Project in Health Informatics (undergraduate), *"Patient Portals,"* University of California, Irvine. January 2019.

TEACHING EXPERIENCE

Graduate Courses

Healthcare Informatics I (20 students), Instructor, University of Maryland, Baltimore County, Fall 2024.

Special Topics Course: Digital Health Equity (23 students), Instructor, University of Maryland, Baltimore County, Spring 2024.

Interaction Design (online; 17 students), Instructor, University of Maryland, Baltimore County, Spring 2024.

Special Topics Course: Digital Health Disparities (29 students), Instructor, University of Maryland, Baltimore County, Spring 2023.

Special Topics Course: Digital Health Disparities (15 students), Instructor, University of Maryland, Baltimore County, Spring 2022.

Undergraduate Courses

Healthcare Informatics I (14 students), Instructor, University of Maryland, Baltimore County, Fall 2024.

Fundamentals of Human-Computer Interaction (95 students), Instructor, University of Maryland, Baltimore County, Fall 2023.

Software and Hardware Concepts (38 students), Instructor, University of Maryland, Baltimore County, Fall 2021.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Departmental Service

2024 – 2025	HCC Graduate Committee
2024 – 2025	Tenure Track Search Committee
2023 – 2024	Workload Policy Workgroup
2023 – 2024	IS Graduate Committee
2023	Research Committee
2021 – Present	Academic Advising for IS Master's Students

University Service

2024 – 2025	Faculty Senate Open Access Fund Committee
2024	COEIT Interdisciplinary Proposal Reviewer
2024	Center for Women in Technology Application Reader
2023 – Present	Center for Women in Technology Faculty Mentor

Community Service

2022 – Present	Patterson Park Clean Up, Earth Day
2007 – 2009	School and Community Resource Volunteer, United States Peace Corps, Northern Cape Province, South Africa

2006 – 2007	Student Mentor, Girls Exploring Math and Science (GEMS), Lawrence University, Appleton, WI
2004 – 2007	Student Mentor, Partners Reaching Youth in Science and Math (PRYSM), Lawrence University, Appleton, WI
2003 – 2007	Tutor, Boys and Girls Club of the Fox Valley, Appleton, WI

Professional Service

Teaching and Mentoring Activities

2019	Graduate Student Mentor, exploreCSR Workshop: Computing to Change the World for the Better, California State Long Beach, Long Beach, CA *(Yunan Chen, Faculty Mentor)*

Conference Planning and Implementation

2024 – 2025	Associate Chair, ACM Conference on Human Factors in Computing Systems
2024	AMIA Annual Symposium Workshop Co-Organizer: Research using health-related social media in the Large Language Model era: methodological advancements, novel applications, and challenges (Dr. Lu He Leading)
2024	Scientific Program Committee Member, American Medical Informatics Association Annual Symposium (AMIA)
2024	Associate Chair, IEEE International Conference on Healthcare Informatics
2023 – 2024	Associate Chair, ACM Conference on Human Factors in Computing Systems
2016 – 2018	AMIA Annual Symposium Student Volunteer
2011 – 2014	Staff Liaison, Scientific Program Committee, International Society of Disease Surveillance Annual Conference
2012 – 2014	Member, Outstanding Student Abstract Award Committee, International Society of Disease Surveillance Annual Conference

Grant Proposal Reviewing

2022	National Science Foundation Ad Hoc Reviewer
2024	National Science Foundation Panel

Journal Manuscript Reviewing

2023	Social Media and Society
2023	Wellcome Open Research
2022 – 2023	Journal of Biomedical Informatics (JBI)
2022 – Present	Journal of Medical Internet Research (JMIR)
2020 – 2022	Journal of the American Medical Informatics Association (JAMIA)
2020 – Present	Applied Clinical Informatics (ACI)
2020 – Present	BMC Medical Informatics and Decision Making
2019 – 2020	American Journal of Tropical Medicine and Hygiene (AJTMH)

Conference Paper Reviewing

2021 – Present	ACM Conference on Human Factors in Computing Systems (CHI)
2021	International Conference on Human-Computer Interaction (INTERACT)
2020 – 2022	ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
2019	World Congress of Medical and Health Informatics (MedInfo)
2017 – Present	American Medical Informatics Association (AMIA) Annual Symposium

2017 – Present	Hawaii International Conference on System Sciences (HICSS)
2012 – 2014	International Society for Disease Surveillance (ISDS) Annual Conference

Membership in Professional Societies

2022 – Present	Institute for Healthcare Informatics
2020 – Present	Association for Computing Machinery (ACM)
2015 – Present	American Medical Informatics Association (AMIA)
2007 – Present	National Peace Corps Association

Updated: December 11, 2024

CURRICULUM VITAE

SANJAY PURUSHOTHAM

EDUCATION

Ph.D.	2015	University of Southern California, Electrical Engineering
M.S.	2014	University of Southern California, Electrical Engineering
B.Tech.	2007	National Institute of Technology Karnataka, Electronics and Communications Engineering

Experience in Higher Education

2024 – Present	University of Maryland Baltimore County, Associate Professor, Information Systems
2018 – 2024	University of Maryland Baltimore County, Assistant Professor, Information Systems
2015 – 2018	University of Southern California, Postdoctoral Research Associate, Computer Science
2008 – 2015	University of Southern California, Research Assistant, Department of Electrical Engineering
Spring 2011	University of Texas San Antonio, Visiting Research Scholar, Department of Computer Science
2007 – 2008	University of Southern California, MS Honors Student, Department of Electrical Engineering

Experience in Other than Higher Education

Spring 2015	NEC Laboratories America, Inc., Princeton; Research Intern, Department of Machine Learning
Summer 2014	NEC Laboratories America, Inc., Princeton; Research Intern, Department of Machine Learning
Summer 2013	NEC Laboratories America, Inc., Princeton; Research Intern, Department of Machine Learning
Summer 2012	Intel Labs, Santa Clara; Research Intern, Interaction and Experience Research (IXR) Group
Summer 2008	Qualcomm Inc., San Diego; Software Engineering Intern, QCT Multimedia Power Optimization
Summer 2006	National Aerospace Laboratories, Bangalore, India; Summer Research Intern
Summer 2005	National Aerospace Laboratories, Bangalore, India; Summer Research Intern
Summer 2005	Indian Institute of Science, Bangalore, India; Summer Research Intern

Awards and Honors Received

2023	NSF CAREER Award
2022	NIH AIM-AHEAD Research Mentor
2021	Outstanding Reviewer, CVPR 2021
2019	NSF CRII Award
2019	Best Poster Award, 34th Annual European Annual Urology (EAU) Congress
2019	Best Paper Abstract Award, 2nd International Conference on AI in Healthcare
2019	Nature Scientific Reports Journal Top 100 article in 2018 (out of 18166 articles)
2019	UMBC 2019 Summer Research Faculty Fellowship
2018	ORISE Fellowship at FDA-CDER
2017	USC Postdoc Association Travel award
2016	Best Poster Runner-up Award, Southern California Machine Learning Symposium (SoCal MLS)
2016	NIPS Machine Learning for Health
2016	USC GPSS Travel award
2015	SBP Conference Travel award
2015	NY Academy of Sciences Travel award
2014	Best Paper Award, ACM SIGSPATIAL GeoCROWD Workshop
2014	NSF Travel award

2012 ICML Scholarship award
2012 Best Poster Award, Scientific Computing and Visualization course, USC
2007 MS Honors in Electrical Engineering, USC
2000 National Talent Merit Scholarship, Government of India

Research Support and/or Fellowships

External: Total for UMBC: **$4,660,922** (My share: **$1,276,989**)
Disclaimer: Project costs reflect total award amount including the total amount for collaborative grants. Acceptance rate is presented where available. Total external funding raised during my tenure at UMBC is ~$4.6 million.

A. Awarded/Current (UMBC)

2025-2026 Safeguarding Open Large Language Models in the Biomedical Domain, Cybersecurity Graduate Fellows Award, $45,500.00, University Cybersecurity Institute, Role: PI
2024-2026 CIRC: DEV: Community Infrastructure for Advancing Audio Deepfake Detection, $749,623, NSF, Role: Co-PI
2023-2028 CAREER: Trustworthy and Robust Federated Learning for Computational Healthcare, $591,587.00, NSF, Role: PI
2023-2024 Harnessing the Power of Machine Learning to Discover What Powers Distant Galaxies, $50,000, UMBC, Role: Co-I
2021-2026 AI and Autonomy for Multi-Agents Systems (ARTIAMAS), ARL, $20 Million, Role: Senior Personnel
2020-2024 Developing Passive Satellite Cloud Remote Sensing Algorithms using Collocated Observations, Numerical Simulation and Deep Learning, $1,496,068, NASA, Role: Co-PI
2019-2024 NSF HDR DSC: Collaborative Research: Creating and Integrating Data Science Corps to Improve the Quality of Life in Urban Areas, $845,246, NSF, Co-PI

B. Completed (UMBC)

2019-2019 Summer Research Faculty Fellowship (SURFF) award, $6000, UMBC, PI
2018-2019 Supplement for Undergraduate Research Experiences (SURE) award, $1500, UMBC, PI
2018-2019 XSEDE Computing Resources Grant, $1500 (for cloud resources), XSEDE, PI
2019-2022 MRI: Acquisition of a Heterogeneous GPU Cluster to Facilitate Deep Learning Research, $604,398, NSF, Role: Senior Personnel
2021-2022 ESIP Lab award, $10,000, Role: Co-PI
2020-2023 CRII: SCH: III: Novel Data-Driven Methods to Analyze Heterogeneous Healthcare Data, $174,879, NSF, Role: PI
2022-2023 Machine learning based automatic detection of upper atmosphere gravity waves from NASA satellite images, $187,621, NASA, Role: Co-PI

C. Non-UMBC

2018 – 2019 Deep Fragment Learning - Deep Variational Adversarial Canonical Correlation Analysis (DeVACA) of Fragmented Data for Intelligent Digital Marketing, $80000, Adobe Research Award, USC (Senior Personnel, Co-wrote proposal)
2018 ORISE Fellowship at FDA-CDER, USC (Declined to start Tenure-track position)

Ph.D. Students

Ph.D. Research Completed
Advisor or Co-Advisor:

- Ph.D. dissertation advisor, Md Mahmudur Rahman. Dissertation Title: Fair and Interpretable Pseudo Value-Based Deep Learning Models for Federated Survival Analysis. Graduated.: August 2024. First Employment:

Applied Scientist, Amazon.

- Ph.D. dissertation advisor, Catherine Ordun. Dissertation Title: Multimodal Deep Generative Models for Cross Spectral Image Analysis. Graduated: December 2023. First Employment: Vice President, Booz Allen Hamilton (co-supervisor: Dr. Edward Raff, CSEE)
- Ph.D. dissertation co-advisor, Xin Huang. Dissertation Title: Deep Learning based Cloud Retrieval Techniques using Multiple Satellite Remote Sensing Data. Graduated: July 2023. First Employment: Assistant Professor, Towson University, Maryland (Advisor: Dr. Jianwu Wang)

Committee Member:

- Sahara Ali, Ph.D. dissertation Advisor, Jianwu Wang, 2024.
- Zahid Hasan, Ph.D. dissertation Advisor, Nirmalya Roy, 2024.
- Dae-young Leroy Kim, Ph.D. dissertation Advisor, Karuna Joshi, 2023.
- Xin Wang, Ph.D. dissertation Advisor, Jianwu Wang, 2022.
- Peichang Shi, Ph.D. dissertation Advisor, Aryya Gangopadhyay, 2021.

Ph.D. Research in Progress

Primary Advisor:

- Ph.D. dissertation advisor, Zahid Hassan Tushar. Research area: Deep Learning for cloud property retrievals. Started Ph.D.: Spring 2022. Expected Completion: Fall 2026
- Ph.D. dissertation advisor, Sultan Ahmed. Research area: Federated Learning and Large Language Models. Started Ph.D.: Spring 2023. Expected Completion: Fall 2027
- Ph.D. dissertation advisor, Rohan Putatunda. Research area: Deep Learning based Ice layer Segmentation. Started Ph.D.: Fall 2019. Expected Completion: Summer 2025 (co-supervisor: Dr. Vandana Janeja)
- Ph.D. dissertation advisor, Jal Irani. Research area: NLP, Block chain. Started Ph.D.: Fall 2021. Expected Completion: Summer 2026 (Currently on leave)

Committee Member:

- Ph.D. proposal defense committee member, Emon Dey (UMBC) (Nirmalya Roy, advisor). Fall 2022
- Ph.D. proposal defense committee member, Masud Ahmed (UMBC) (Nirmalya Roy, advisor). Fall 2022
- Ph.D. proposal defense committee member, Zahid Hasan (UMBC) (Nirmalya Roy, advisor). Fall 2022
- Ph.D. proposal defense committee member, Avijoy Chakma (UMBC) (Nirmalya Roy, advisor). Fall 2022
- Ph.D. proposal defense committee member, Adeleke Ademakinwa (UMBC) (Zhibo Zhang, Physics Dept., advisor). Fall 2022
- Ph.D. proposal defense committee member, Mohammad Ishtiaque Rahman (UMBC) (Zhiyuan Chen, advisor). Fall 2021

Master's Students

Master's Research completed

Committee Member:

- M.S. thesis committee member, Garmia Kumari (UMBC) (Jianwu Wang). Spring 2023
- M.S. thesis committee member, Prachiti Naik (UMBC) (Jianwu Wang). Thesis title: Spring 2020

Undergraduate Students

Undergraduate Research Completed

- Riya Raikar (UMD Summer intern), Summer 2023, Advisor
- Matthew Lee (UMBC NSF REU), Summer 2021, Advisor

- Miki Walczak (UMBC Research intern), Fall 2021-Spring 2022, Advisor
- Muhmammad Bobojonv (UMBC HDR Data Science Corps participant), Fall 2020, Advisor
- Steven Hillard (UMBC HDR Data Science Corps participant), Fall 2019-Spring 2020, Advisor
- Lorrayya Williams (UMBC COEIT Summer Intern), Summer 2019 and Summer 2020, Advisor
- Katherine Subblet (UMBC SURE awardee), Fall 2018-Spring 2019, Advisor

Independent Study Students

- Ainaz Jamshidi (IS PhD). Fall 2023. Advisor
- Rohan Putatunda (IS PhD). Fall 2023. Advisor
- Shaswati Saha (IS PhD). Spring 2023, Fall 2023. Advisor
- Sultan Ahmed (IS PhD). Spring 2023, Fall 2023. Advisor
- Zahid Hassan Tushar (IS PhD). Spring 2022, Fall 2022. Advisor
- Jal Irani (IS PhD). Summer 2021. Advisor
- Catherine Ordun (IS PhD). Summer 2020, Summer 2021. Advisor
- Xiangyang Meng (IS PhD). Fall 2020, Spring 2021. Advisor
- Md Mahmudur Rahman (IS PhD). Fall 2019, Spring 2020. Advisor
- Grace Osezua (IS MS). Fall 2022. Advisor
- Robert Jackson (IS MS). Spring 2021. Advisor
- Serena Gyi (IS MS). Fall 2020. Advisor
- Shruti Pandey (IS MS). Spring 2019. Advisor

Research Students

Ph.D. Students

- Ainaz Jamshidi (IS PhD). Fall 2023. Advisor, UMBC
- Shaswati Saha (IS PhD). Spring-Fall 2023. Advisor, UMBC
- Xiangyang Meng, (IS PhD). Fall 2020-Spring 2022. Advisor, UMBC
- Luan Tran, (CS PhD). 2017-2018, Mentor, USC
- Kien Nguyen, (CS PhD). 2017-2018, Mentor, USC
- Zhengping Che, (CS PhD). 2015-2018, Mentor, USC
- Guangyu Li, (CS PhD). 2015-2018, Mentor, USC
- Shangwen Li, (EE PhD). 2011-2015, Mentor, USC
- Xiang Fu, (EE PhD). 2010-2015, Mentor, USC

Master's Students

- Ashwathy S. (IS MS). 2020-2021. Advisor, UMBC
- Akash Selvakumar (IS MS). 2020-2020. Advisor, UMBC
- Bo Jiang (CS MS), 2017-2019. Mentor, USC
- Wilka Carvalho (CS MS), 2016-2017. Mentor, USC
- Kanit Srisuthep (CS MS), 2016-2017. Mentor, USC
- Zeyu Dai (CS MS), 2016-2017. Mentor, USC
- Minh Nguyen (CS MS), 2016-2017. Mentor, USC
- Vaibhav Behl (CS MS), 2016-2017. Mentor, USC
- Luis Ramos (CS MS), Summer 2016. Mentor, USC
- Daru Xu (CS EE), 2009-2012. Mentor, USC

Undergraduate Students

- Peter Lillian, 2016-2017, Viterbi Merit Fellow, Mentor, USC
- Rachit Kataria, 2016-2017, Viterbi Merit Fellow, Mentor, USC
- Alex Pareto, 2016-2017, Viterbi Merit Fellow, Mentor, USC
- Zequn Liu, Summer 2018, Mentor, USC
- Anirudh Srinivasan, Summer 2018, Mentor, USC

- Chuizheng Meng, Summer 2017, Mentor, USC
- Ambar Pal, Summer 2017, Mentor, USC
- Jiayu (Carol) Yao, Summer 2016, Mentor, USC
- Junheng (Jeff) Hao, Summer 2016, Mentor, USC
- Akshay Kalkunte, Summer 2016, Mentor, USC
- Daru Xu (CS EE), 2009-2012. Mentor, USC

K-12 Students

- Sai Siddhish Chandra Sekaran, 2024-Present, Research Student, Centennial High School, MD, Advisor, UMBC
- Vishnu Varma, 2024-2024, Summer intern, Thomas Sprigg Wootton High School, MD, Advisor, UMBC
- Aryan Raikar, Sumer 2023, Summer intern, Marriotts Ridge High School, MD, Advisor, UMBC
- Vladimir Gapeev, 2022-2023, Research student, Baltimore Polytechnic Institute, MD, Advisor, UMBC
- Liam Reilly, 2022-2023, Research student, Baltimore Polytechnic Institute, MD, Advisor, UMBC
- Siddharth Kancharapu, 2021-2022, Research student, TowerHill School, DE, Advisor, UMBC
- Riya Raikar, 2020-2022, Research student, Marriotts Ridge High School, MD, Advisor, UMBC

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications
Peer-Reviewed Works

A. Journal Papers

1. Ademakinwa, A. S., Tushar, Z. H., Zheng, J., Wang, C., **S. Purushotham**, Wang, J., Meyer, K. G., Várnai, T., and Zhang, Z.: Influence of Cloud Retrieval Errors Due to Three Dimensional Radiative Effects on Calculations of Broadband Cloud Radiative Effect, Atmospheric Chemistry and Physics, 2024 **(Impact Factor 6.3)**
2. Z. Sun, L. Sandoval, R. Crystal-Ornelas, S. Mousavi, J. Wang, C. Lin, N. Cristea, D. Tong, W. Carande, X. Ma, Y. Rao, J. Bednar, A. Tan, J. Wang, S. **Purushotham**, T. Gill, J. Chastang, D. Howard, B. Holt, C. Gangodagamage, P. Zhao, P. Rivas, Z. Chester, J. Orduz, A.John, A review of Earth Artificial Intelligence, Computers & Geosciences, 2022 **(Impact Factor 5.0)**
3. D. Sharma, **S. Purushotham**, C. K. Reddy. MedFuseNet: An attention-based multimodal deep learning model for visual question answering in the medical domain, Nature Scientific Reports, 2021 **(Impact Factor 5.1)**
4. Hung, J. Chen, S. Ghodoussipour, Z. Liu, J. Nguyen, **S. Purushotham**, I. Gill, Y. Liu, Deep learning on automated performance metrics and clinical features to predict urinary continence recovery after robot-assisted radical prostatectomy, BJU International, 2019 **(Impact Factor 5.9)**
5. K. Matsuo*, **S. Purushotham***, B. Jiang*, R. Mandelbaum, T. Takiuchi, Y. Liu, L.D. Roman, Survival outcome prediction in cervical cancer: Cox models versus deep-learning model, American Journal of Obstetrics & Gynecology, 2019 (*equal contributions) **(Impact Factor 9.8)**
6. M. S. Abrishami, L. Nocera, M. Koc, I. A. Trujillo-Priego, **S. Purushotham**, C. Shahabi, B. A. Smith, Identification of Developmental Delay in Infants using Wearable Sensors: Full-Day Leg Movement Statistical Feature Analysis, Journal of Translational Engineering in Health and Medicine, 2019 **(Impact Factor 3.9)**
7. A. Hung, J. Chen, Z. Liu, J. Nguyen, **S. Purushotham**, Y. Liu, Comparing Deep Learning, Machine Learning, and Conventional Regression as Predictive models of time to urinary continence After Robot-Assisted Radical Prostatectomy, The Journal of Urology, 2019 **(Impact Factor 7.6)**
8. A. Hung, J. Chen, Z. Liu, J. Nguyen, P. Oh, D. Stewart, D. Remulla, T. Chu, R. Lee, K. Aron, S. Ghodoussipour, **S. Purushotham**, I. Gill, Y. Liu, Deep Learning Model to Predict Time to Urinary Continence Recovery after Robot-Assisted Radical Prostatectomy Using Automated Performance Metrics and Clinical Data, The Journal of Urology, 2019 **(Impact Factor 7.6)**
9. A. Hung, J. Chen, Z. Liu, J. Nguyen, **S. Purushotham**, Y. Liu, Deep learning model to predict urinary continence after robot-assisted radical prostatectomy, European Urology Supplements, 2019 **(Impact Factor 10.4)**
10. Z. Che, **S. Purushotham**, K. Cho, D. Sontag, Y. Liu, Recurrent Neural Networks for Multivariate Time

Series with Missing Values, Nature Scientific Reports, 2018 **(Listed as a Journal Top 100 Article for 2018, out of 18166 papers) (Impact Factor 5.1)**

11. **S. Purushotham***, C. Meng*, Z. Che, Y. Liu, Benchmarking deep learning models on large healthcare datasets, Journal of Biomedical Informatics (JBI), 2018 (*equal contributions) **(Impact Factor 8.0)**
12. K. Matsuo, H. Machida, R. Mandelbaum, **S. Purushotham**, B. Grubbs, L. Roman, J. Wright, Association of tumor differentiation grade and survival of women with squamous cell carcinoma of the uterine cervix, Journal of Gynecologic Oncology, 2018 **(Impact Factor 4.7)**
13. K. Matsuo, **S. Purushotham**, A. Moeini, G. Li, H. Machida, Y. Liu, L. Roman, A Pilot Study in using Deep-Learning to predict limited life-expectancy in women with Recurrent Cervical Cancer, American Journal of Obstetrics and Gynecology (AJOG), 2017 **(Impact Factor 9.8)**
14. S. Li, **S. Purushotham**, C. Chen, Y. Ren, C.-C.J. Kuo, Measuring and Predicting Tag Importance for Image Retrieval, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2017 **(Impact Factor 24.3)**
15. **S. Purushotham**, C.-C.J. Kuo, Personalized Group Recommender Systems for Location and Event Based Social Networks, ACM Transactions on Spatial Algorithms and Systems (TSAS), 2016 **(Impact Factor 1.7)**

B. Book Chapters

1. Z. Che, **S. Purushotham**, D. Kale, W. Li, M.T. Bahadori, R. Khemani, Y. Liu, Time-series Feature Learning with Applications to Healthcare Domain, Mobile Health: Sensors, Analytic Methods, and Applications, 2017
2. P.H. Wu, **S. Purushotham**, C.-C.J. Kuo, Video Genre Inference based on Camera Capturing Models, Video Search and Mining, Studies in Computational Intelligence, Vol. 287/2010

C. Peer-Reviewed Conference Papers and Workshop Papers

1. B. A. Tama, **S. Purushotham**, V. Janeja. MorphoLayerTrace (MLT): A Modified Automated Radio-Echo Sounding Englacial Layer-tracing Algorithm for Englacial Layer Annotation in Ice Penetrating Radar Data, The 40th ACM/SIGAPP Symposium On Applied Computing, (SAC) 2025 (To Appear)
2. S. Mostafa, O. Faruque, C. Wang, J. Yue, **S. Purushotham**, J Wang. gWaveNet : Classification of Gravity Waves from Noisy Satellite Data using Custom Kernel Integrated Deep Learning Method, International Conference on Pattern Recognition (ICPR) 2024
3. Z. H. Tushar, A. Ademakinwa, J. Wang, Z. Zhang, **S. Purushotham**. Joint Cloud Optical Thickness and Cloud
4. Effective Radius Property Retrievals using Attention-based Deep Learning Models, (Oral), AGU Meeting, 2024
5. Z. Hasan, M. Ahmed, A.Z. Md. Faridee, **S. Purushotham**, H. Lee, H. Kwon, N. Roy. VIVAR: Learning View-Invariant Embedding for Video Action Recognition, In Proceedings of the SPIE 8th International Conference on Video and Image Processing (ICVIP), Kuala Lumpur, Malaysia, 2024
6. Z. H. Tushar, A. Ademakinwa, J. Wang, Z. Zhang, **S. Purushotham**. CloudUNet: Adapting UNets for Retrieving Cloud Properties, International Geoscience and Remote Sensing Symposium (IGARSS) 2024
7. B. A. Tama, V. Janeja, **S. Purushotham**. Assessing Annotation Accuracy in Ice Sheets Using Quantitative Metrics, International Geoscience and Remote Sensing Symposium (IGARSS) 2024
8. B. A. Tama, V. Janeja, **S. Purushotham**. A Pilot Study on the Challenges in Ice Layer Annotations, 13th International Conference on Climate Informatics, 2024
9. M. Ahmed, Z. Hasan, A. Faridee, M. Anwar, K. Jayarajah, **S. Purushotham**, S. You, N. Roy. ARSFineTune: On-the-Fly Tuning of Vision Models for Unmanned Ground Vehicles, 20th Annual International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT 2024)
10. A.S. Ademakinwa., Z. Tushar, J. Zheng, C. Wang, **S. Purushotham**, J. Wang, K. Meyer, T. Varnai, Z. Zhang. Radiative Closure Studies of How Cloud Property Retrieval Errors due to three-dimensional radiative effects Influence Our Understanding of Broadband Cloud Radiative Effects. In 104th AMS Annual Meeting, 2024
11. M. Rahman**, S. Purushotham**. FedPseudo: Privacy-Preserving Pseudo Value-Based Deep Learning Models for Federated Survival Analysis. In Proceedings of the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), pp. 1999-2009. 2023
12. M. Rahman, **S. Purushotham**. Multi-state Survival Analysis using Pseudo value-based Deep Neural Networks. In Proceedings of the 2023 SIAM International Conference on Data Mining (SDM), pp. 757-765. Society for Industrial and Applied Mathematics, 2023

13. M. Rahman, **S. Purushotham**. Federated Competing Risk Analysis, 32nd ACM International Conference on Information and Knowledge Management (CIKM), 2023
14. C. Ordun, E. Raff, **S. Purushotham**. Vista-Morph: Unsupervised Image Registration of Visible-Thermal Facial Pairs, IEEE International Joint Conference on Biometrics (IJCB 2023), 2023
15. C. Ordun, E. Raff, **S. Purushotham**. When Visible-to-Thermal Facial GAN Beats Conditional Diffusion, 2023 IEEE International Conference on Image Processing (ICIP 2023), 2023
16. Z. Hasan, M. Ahmed, Md. Faridee, **S. Purushotham**, H. Kwon, H. Lee, N. Roy, NEV-NCD: Negative Learning, Entropy, and Variance regularization based novel action categories discovery, 2023 IEEE International Conference on Image Processing (ICIP 2023), 2023
17. X. Huang, C. Wang, W. Zhang, **S. Purushotham,** J. Wang. DRLO: Deep Representation Learning for Large Scale Off-track Satellite Remote Sensing Data, IEEE Big Data 2023
18. M. Rahman, **S. Purushotham**. Communication-Efficient Pseudo Values-Based Random Forests for Federated Survival Analysis, AAAI 2023 Fall Symposium Series, Second Symposium on Survival Prediction: Algorithms, Challenges, and Applications (SPACA), 2023
19. C. Ordun, A. Cha, E. Raff, **S. Purushotham,** K Kwok, M. Rule, J. Gulley. A Generative Approach for Image Registration of Visible-Thermal (VT) Cancer Faces, Artificial Intelligence over Infrared Images for Medical Applications - A MICCAI Workshop, 2023
20. M. Rahman, **S. Purushotham**. Federated Survival Analysis with Competing Events, 2023 57th Annual Conference on Information Sciences and Systems (CISS), 2023
21. M. Rahman, **S. Purushotham**. Federated learning for competing risk analysis in healthcare, International Workshop on Federated Learning for Distributed Data Mining, KDD 2023
22. M. Ahmed, Z. Hasan, T. Yingling, E. O'Leary, **S. Purushotham**, S. You, N. Roy. An Online Continuous Semantic Segmentation Framework With Minimal Labeling Efforts, 2023 IEEE International Conference on Smart Computing (SMARTCOMP). 2023
23. S. Mostafa, J. Wang, B. Holt, **S. Purushotham**, J Wang. CNN Based Ocean Eddy Detection Using Cloud Services, International Geoscience and Remote Sensing Symposium (IGARSS) 2023
24. J. Yue, S. Mostafa, C. Wang, Y. Hozumi, J. Wang, **S. Purushotham**, M. Cham, S. Miller. Machine learning based model for mesospheric gravity wave detection from noisy satellite images, AGU Fall meeting 2023, San Francisco, CA, 11-15 December 2023.
25. M. Rahman, **S. Purushotham**. Fair and Interpretable models for Survival Analysis, In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), pp. 1452-1462. 2022.
26. X. Huang, C. Wang, **S. Purushotham**, J. Wang. VAE based domain adaptation for cloud property retrieval from multi-satellite data, In Proceedings of the 30th International Conference on Advances in Geographic Information Systems, pp. 1-10. (ACM SIGSPATIAL), 2022
27. M. Ahmed, Z. Hasan, N. Khan, N. Roy, **S. Purushotham**, A. Gangopadhyay, S. You. Benchmarking domain adaptation for semantic segmentation, Proc. SPIE 12124, Unmanned Systems Technology XXIV, 121240F (31 May 2022); https://doi.org/10.1117/12.2618548
28. M. Rahman, **S. Purushotham**. FedPseudo: Pseudo value-based Deep Learning Models for Federated Survival Analysis, KDD 2022 DSHealth Workshop: Transparent and Human-centered AI, KDD, 2022
29. M. Rahman, **S. Purushotham**. Pseudo value-based Deep Neural Networks for Multistate Survival Analysis, KDD 2022 DSHealth Workshop: Transparent and Human-centered AI, KDD, 2022
30. C. Ordun, E. Raff, **S. Purushotham**. Thermal Face Contrastive GAN (TFC-GAN): A Framework for Visible-to-Thermal Face Translation, 1st Workshop on Healthcare AI and COVID-19, ICML 2022
31. C. Ordun, E. Raff, **S. Purushotham**. Fourier-Based Strategies to Explore Ethnic Feature Generation during Visible-to-Thermal Facial Translation, 3rd Women in Machine Learning Un-Workshop, ICML 2022
32. M. Rahman, **S. Purushotham**. A Pseudo Value Based Interpretable Neural Additive Model for Survival Analysis, AAAI 2022 Workshop: Trustworthy AI for Healthcare, AAAI, 2022
33. J. González, T. Chapman, K. Chen, H. Nguyen, L. Chambers, S. Mostafa, J. Wang, **S. Purushotham**, C. Wang, J. Yue. Atmospheric Gravity Wave Detection Using Transfer Learning Techniques, 2022 IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT)

34. M. Ahmed, N. Khan, P. Roy, N. Roy, **S. Purushotham**, A. Gangopadhyay, S. You, GADAN: Generative Adversarial Domain Adaptation Network For Debris Detection Using Drone, 4th International Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT), DOSS, 2022
35. A. Ademakinwa, Z. Zhang, J. Wang, **S. Purushotham**, C. Wang, K. Meyer. "How do cloud property retrieval biases due to 3-D effects affect broadband cloud radiative effect estimation?" In AGU Fall Meeting Abstracts, vol. 2022, pp. A55N-1290. 2022.
36. C. Ordun, A. Cha, E. Raff, B. Gaskin, A. Hanson, M. Rule, **S. Purushotham**, J. Gulley, Intelligent Sight and Sound: A Chronic Cancer Facial Pain Dataset, NeurIPS 2021 Datasets and Benchmarks Track (NeurIPS), 2021
37. M. Rahman, S. Matsuzaki, K. Matsuo, **S. Purushotham**, DeepPseudo: Pseudo values based deep learning models for Competing Risk Analysis, AAAI Conference on Artificial Intelligence (AAAI), 2021
38. C. Ordun, E. Raff, **S. Purushotham**, Generating Thermal Human Faces for Physiological Assessment using Thermal Sensor Auxiliary Labels, IEEE International Conference on Image Processing (ICIP), 2021
39. S. **Purushotham**, A. Sureshkumar, J. Li, S. Tang, S. Roys, C. Rhodes, R. Gullapalli, J. Zhou, Improved Outcome prediction in mild Traumatic Brain Injury using Latent Feature Extraction from Volumetric MRI, 2021 International Society for Magnetic Resonance in Medicine (ISMRM) & SMRT Annual Meeting & Exhibition, 2021.
40. M. Rahman, **S. Purushotham**. PseudoNAM: A pseudo value based interpretable neural additive model for survival analysis, AAAI, Fall Symposium Series, 2021
41. C. Ordun, E. Raff, **S. Purushotham**, Generating Thermal Human Faces for Physiological Assessment using Thermal Sensor Auxiliary Labels, 2021 NeurIPS Women in Machine Learning Workshop, (NeurIPS), 2021
42. X. Huang, S. Ali, C. Wang, **S. Purushotham**, J. Wang, Z. Zhang. Deep Domain Adaptation based Cloud Type Detection using Active and Passive Satellite Data, IEEE International Conference on Big Data, 2020
43. C. Ordun, E. Raff, **S. Purushotham**, The Use of AI for Thermal Emotion Recognition: A Review of Problems and Limitations in Standard Design and Data, AAAI, Fall Symposium Series, 2020
44. M. Rahman, S. Matsuzaki, K. Matsuo, **S. Purushotham**, DeepPseudo: A Deep learning approach based on Pseudo values for Competing Risk Analysis, KDD DS Health Workshop, KDD, 2020
45. C. Ordun, **S. Purushotham**, E. Raff, Exploratory analysis of covid-19 tweets using topic modeling, umap, and digraphs, epiDAMIK 3.0: The 3rd International workshop on Epidemiology meets Data Mining and Knowledge discovery, KDD, 2020
46. X. Huang, S. Ali, **S. Purushotham**, J. Wang, C. Wang, Z. Zhang, Deep Multi-Sensor Domain Adaptation on Active and Passive Satellite Remote Sensing Data, KDD Workshop on Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial 2020), KDD, 2020
47. **S. Purushotham**, Argho Sarkar, Explainable Visual Question Answering in Medical Domain, WSDM Healthcare Day, WSDM, 2020
48. **S. Purushotham***, K. Matsuo*, B. Jiang*, R. Mandelbaum, T. Takiuchi, Y. Liu, L.D. Roman, Survival outcome prediction in cervical cancer: Cox models versus deep-learning model, 2nd International Conference on AI in Healthcare, 2019 **(Best Paper Abstract Award)**
49. M. Tsang, H. Liu, **S. Purushotham**, P. Murali, Y. Liu, Neural Interaction Transparency (NIT): Disentangling Learned Interactions for Improved Interpretability, Neural Information Processing Systems (NeurIPS), 2018
50. **S. Purushotham***, Z. Che*, G. Li*, B. Jiang, Y. Liu, Hierarchical Deep Generative Models for Multi-Rate Multivariate Time Series, International Conference on Machine Learning (ICML), 2018
51. **S. Purushotham***, W. Carvalho*, Y. Liu, Variational Recurrent Deep Domain Adaptation, International Conference Learning Representation (ICLR), 2017
52. **S. Purushotham**, Z. Che, B. Jiang, Y. Liu, Deep Multi-Instance Learning for Concept Annotation from Medical Time Series Data, NIPS Machine Learning for Health (NIPS ML4H), 2017
53. M. Nguyen, Z. Hasnain, **S. Purushotham**, L. Nocera, P. Newton, C. Shahabi, Mining Human Mobility to Quantify Performance Status, IEEE International Conference on Data Mining (ICDM) Workshop, 2017
54. Z. Che, **S. Purushotham**, Y. Liu, Interpretable Deep Models for ICU Outcome Prediction, AMIA Annual Symposium Proceedings (AMIA), 2016
55. T. Nilanon, J. Yao, J. Hao, **S. Purushotham**, Y. Liu, Normal/Abnormal Heart Sound Recording Classification Using Deep Recurrent Neural Network, Computing in Cardiology (CinC), 2016
56. **S. Purushotham**, W. Carvalho, Y. Liu, Variational Adversarial Deep Domain Adaptation for Healthcare Time Series Analysis, NIPS Machine Learning for Healthcare Workshop, 2016 (Spotlight Presentation)
57. M. Nguyen, **S. Purushotham**, H. To and C. Shahabi, m-TSNE: A Framework for Visualizing High Dimensional Multivariate Time Series, AMIA 2016 Workshop on Visual Analytics in Healthcare, 2016

58. Z. Che, **S. Purushotham**, Y. Liu, Distilling Knowledge from Deep Networks with Applications to Phenotype Discovery, New York Academy of Sciences - Data Science Learning and Applications to Biomedical and Health Sciences Workshop, 2016
59. Z. Che, **S. Purushotham**, Y. Liu, Distilling Knowledge from Deep Networks with Applications to Phenotype Discovery, NIPS Workshop on Machine Learning in Healthcare, 2015
60. Q. Yu, **S. Purushotham**, Y. Liu, Efficient Spatio-Temporal Sampling via Low-rank Tensor Sketching, NIPS Time Series Workshop, 2015
61. **S. Purushotham**, R. Min, C.-C.J. Kuo, M. Gerstein, Knowledge-based High Order Sparse Learning Models, NIPS Workshop on Machine Learning in Computational Biology, 2015
62. **S. Purushotham**, C.-C.J. Kuo, Modeling Group Dynamics for Personalized Group-Event Recommendation, International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP15), 2015
63. **S. Purushotham**, C.-C.J. Kuo, Studying User Influence in Personalized Group Recommenders in Location-based Social Networks, NIPS 2014 Personalization Workshop, 2014
64. **S. Purushotham**, J. Shahabdeen, L. Nachman, C.-C.J. Kuo, Collaborative Group Activity Recommendation Systems, ACM SIGSPATIAL International Workshop on Crowdsourced and Volunteered Geographic Information (GeoCrowd), 2014 **(Best Paper Award)**
65. **S. Purushotham**, R. Min, C.-C.J. Kuo, R. Ostroff, Factorized Sparse Learning with Interpretable high order feature interactions, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2014
66. X. Fu, **S. Purushotham**, D. Xu, J. Li, C.-C.J. Kuo, Hierarchical Bag-of-Words Model for Joint Multi-View Object Representation and Classification, Asia-Pacific Signal and Information Processing Association (APSIPA), 2012
67. **S. Purushotham**, Y. Liu, C.-C.J. Kuo, Collaborative Topic Regression with Social Matrix Factorization for Recommendation Systems, International Conference on Machine Learning (ICML), 2012
68. **S. Purushotham**, Q. Tian, C.-C.J. Kuo, Picture-in-Picture Copy Detection using spatial verification techniques, ACM Multimedia, AIEMPro, 2011
69. P.H. Wu, T. Thaipanich, **S. Purushotham**, C.-C.J. Kuo, Separation of Professional and Amateur Video in Large Video Collections, IEEE Pacific-Rim Conference on Multimedia (PCM), 2009

Non-Peer Reviewed Articles

1. **S. Purushotham**, Martin Min, Greedy Alternating Optimization for FHIM, NEC Labs, 2014 (Technical Report)

Works Submitted or In Preparation

1. Z Hasan, AZM Faridee, M Ahmed, **S Purushotham**, H Kwon, H Lee, N Roy. Novel Categories Discovery from probability matrix perspective (Under review, 2024)
2. M. Rahman, **S. Purushotham**. Fair Federated Survival Analysis (Under review, 2024)
3. Z. H. Tushar, **S. Purushotham**. Diffusion Models for Cloud Property Retrievals (In preparation, 2025)
4. **S. Purushotham**. Federating LLMs in healthcare (In preparation, 2025)
5. S. Ahmed, **S. Purushotham**. Benchmarking Federated Survival Analysis methods (In preparation, 2025)

Presentations

A. Conference/Poster Presentations/Demos

1. S. Ahmed, Z. H. Tushar, K. E. Garofali, A. B-Zych, **S. Purushotham.** Harnessing the Power of Machine Learning to Discover What Powers Distant Galaxies, UMBC, 2024
2. Z. H. Tushar, A. Ademakinwa, Z. Zhang, J. Wang, **S. Purushotham.** CloudUNet: Adapting UNet for Retrieving Cloud Properties, UMBC, 2024
3. S. Ahmed, **S. Purushotham.** Benchmarking Federated Learning for Survival Analysis, IS Research Festival, 2024
4. Z. H. Tushar, A. Ademakinwa, Z. Zhang, J. Wang, **S. Purushotham.** Deep Learning for Cloud Property Retrievals, NASA Accelerating Informatics for Earth Science (AIFES), 2024
5. S. Saha, **S. Purushotham**. DEEP-CAM: Attention based Multi-modal Deep Learning Models for Medical Instructional Question Generation, TRECVID 2023
6. Z. H. Tushar, X. Meng, A. Ademakinwa, Z. Zhang, J. Wang, **S. Purushotham**, Deep Learning Transformers for Retrieval of Cloud Optical Properties, ESDSWG Annual Meeting, 2023

7. X. Huang, C. Wang, **S. Purushotham,** J. Wang, VDAM: VAE based Domain Adaptation for Cloud Property Retrieval from Multi-Satellite Data, ESDSWG Annual Meeting, 2023
8. Z. H. Tushar, **S. Purushotham**. A Study of Federated Adversarial Learning for Automatic Speech Recognition. Annual Review Meeting of Army Research Laboratory, University of Maryland College Park, 2022.
9. X. Meng, A. Ademakinwa, Z. Zhang, J. Wang, **S. Purushotham**, Deep Learning Transformers for Retrieval of Cloud Optical Properties, ESDSWG Annual Meeting, 2022
10. X. Huang, S. Ali, **S. Purushotham**, J. Wang, Z. Zhang, B. Marchant, K. Meyer, Multi-Sensor Deep Domain Adaptation for Cloud Bulk Property Retrieval, ESDSWG Annual Meeting, 2022
11. J. Wang, S. Purushotham, Z. Zhang, C. Wang, K. Meyer, A Convenient and Flexible Satellite Data Spatial-temporal Collocation System, ESDSWG Annual Meeting, 2022
12. **S. Purushotham**, Deep Multi-Sensor Domain Adaptation on Active and Passive Satellite Remote Sensing Data, 2nd NOAA Workshop on Leveraging AI in Environmental Sciences, 2021
13. A. Hung, J. Chen, Z. Liu, J. Nguyen, **S. Purushotham**, Y. Liu, Deep learning model to predict urinary continence after robot-assisted radical prostatectomy, 34th Annual European Association of Urology (EAU) Congress, 2019 **(Best Poster Award)**
14. L. Williams, **S. Purushotham**, Using Machine Learning to Mine Medical Documents, Annual Biomedical Research Conference for Minority Students (ABRCMS), 2019
15. E.Y. Choi, **S. Purushotham**, Y. Liu, J. Sun. Deep Learning Models for Health Care: Challenges and Solutions. AAAI 2018 (Tutorial Instructor)
16. Aastha, **S. Purushotham**, P. Malihi, Y. Liu, P. Kuhn, Predicting Survival of mCRPC Patients, Ming Hsieh Institute Symposium, University of Southern California, 2018
17. **S. Purushotham**, B. Jiang, Z. Che, Y. Liu, Medical Time Series to Concepts, SoCal Machine Learning Symposium (SCMLS), 2017
18. M. Nguyen, **S. Purushotham**, L. Nocera, A. Mejia, C. Shahabi, P. Kuhn, J. Nieva, ATOM-HP: Analytical Technologies to Objectively Measure Human Performance, Computer Science PhD Day, USC, 2017
19. S. Ye, **S. Purushotham**, U. Demiyurek, Data Analysis on AliveCor ECG Records and Atrial Fibrillation Detection, IMSC Retreat, USC, 2017
20. S. Abrishami, L. Nocera, **S. Purushotham**, B. Smith, C. Shahabi, Early Prediction of Neuro-Motor Delay in Infants in Non-Controlled Environments, IMSC Retreat, USC, 2017
21. M. Nguyen, **S. Purushotham**, L. Nocera, A. Mejia, C. Shahabi, P. Kuhn, J. Nieva, ATOM-HP: Analytical Technologies to Objectively Measure Human Performance, IMSC Retreat, USC, 2017
22. **S. Purushotham**, W. Carvalho, Y. Liu, Variational Adversarial Deep Domain Adaptation for Healthcare Time Series Analysis, SoCal Machine Learning Symposium (SCMLS), 2016 (**Best Poster Runner-up Award**, Oral Presentation)
23. P. Kuhn, J. Nieva, C. Shahabi, **S. Purushotham**, et. al, Analytical Technologies to Objectively Measure Human Performance (ATOM-HP), South by South Lawn: A White House Festival of Ideas, Art and Action (SXSL), Demo/exhibit at the White House as part of Cancer Moonshot Initiative, 2016
24. Z. Che, **S. Purushotham**, Y. Liu, Distilling Knowledge from Deep Networks with Applications to Computational Phenotyping, Computer Science PhD Day, USC, 2016
25. L. Ramos, **S. Purushotham**, Y. Liu, Machine Learning models and Visualization for Healthcare, USC-IME Summer Program, USC, 2016
26. J. Hao, T. Nilanon, **S. Purushotham**, Y. Liu, PhysioNet Challenge 2016: Classification in Phonocardiograms (PCG), THU-USC Summer Program, USC, 2016
27. S Li, **S. Purushotham**, C. Chen, Y. Ren, C.-C.J. Kuo, Measuring and Predicting Tag Importance for Image Retrieval, 6th Annual Ming Hsieh Department of Electrical Engineering Research Festival, USA, 2015
28. **S. Purushotham**, R. Min, C.-C.J. Kuo, R. Ostroff, Factorized Sparse Learning with Interpretable high order feature interactions, 9th Annual Machine Learning Symposium, New York Academy of Sciences, New York, USA, 2015
29. **S. Purushotham**, R. Min, C.-C.J. Kuo, Factorized Sparse Learning with Interpretable high order feature interactions, AISTATS/Machine Learning Summer School, Reykjavik, Iceland, 2014
30. **S. Purushotham**, Y. Liu, C.-C.J. Kuo, Collaborative Topic Regression with Social Matrix Factorization for Recommendation Systems, Google PhD Summit, Los Angeles, USA, 2013
31. **S. Purushotham**, Y. Liu, C.-C.J. Kuo, Collaborative Topic Regression with Social Matrix Factorization for Recommendation Systems, 3rd Annual Ming Hsieh Department of Electrical Engineering Research Festival, USA, 2013

32. **S. Purushotham**, J. Shahabdeen, L. Nachman, Group-Activity Recommendation, Intel Labs Country Fair Research Festival, Oregon, USA, 2012 (Poster & Demo)
33. **S. Purushotham**, J. Shahabdeen, L. Nachman, Socially Aware Activity: Group Recommendations, Intel's Annual IDF Festival in San Francisco, CA, 2012
34. **S. Purushotham**, T. Levinboim, Two Parallel Solvers for LASSO, Scientific Computing and Visualization, USC, Los Angeles, 2012 (Best Poster award)
35. **S. Purushotham**, Q. Tian, C.-C.J. Kuo, Picture-in-Picture Copy Detection Using Spatial Coding Techniques, 2nd Annual Ming Hsieh Department of Electrical Engineering Research Festival, USC, 2012

B. Other Professional Presentations/Invited Talks

1. **S. Purushotham**. AI for Health, Cancer Prevention Fellows Program, National Cancer Institute, 2024
2. **S. Purushotham**. Federated Survival Analysis: Challenges, Opportunities and Solutions, Second Symposium on Survival Prediction: Algorithms, Challenges, and Applications, AAAI Fall Symposium Series, 2023 (Invited Speaker)
3. **S. Purushotham**. AI for Health and Climate Sciences, Joint Committee on Cybersecurity, Information Technology, and Biotechnology, Maryland Legislature, State of Maryland, 2023
4. **S. Purushotham**. Deep Learning Models for Healthcare and Oncology, Gordon Center for Medical Imaging, Massachusetts General Hospital/Harvard Medical School, 2022
5. **S. Purushotham**. Deep Learning Models for Survival Analysis, ICSC 2022 Panel on AI and Healthcare, 2021
6. **S. Purushotham**. Overview of Machine Learning. Earth Day Symposium, Invited Speaker, University of Maryland, Baltimore County, 2020
7. **S. Purushotham.** Deep Learning Models for Healthcare and Oncology. Johns Hopkins University, Image Analysis and Communications Lab, 2020
8. **S. Purushotham**. SmartHealthcare: Challenges and Solutions. SmartSensing Workshop, International Conference on Distributed Computing and Networking, 2020 (Invited Speaker and Panelist)
9. **S. Purushotham**. Deep Learning Models for Health Care. University of Maryland, Baltimore, 2019 Annual BioMET Retreat, 2019
10. **S. Purushotham**. Deep Learning Models for Health Care. University of Maryland School of Medicine, Core for Translational Research in Imaging, 2019
11. **S. Purushotham**. Deep Learning Models for Health Care. University of Maryland, Baltimore County, Applied Mathematics Colloquium Speaker, 2019
12. **S. Purushotham**. Individual Patient Survival Predictions with Deep Learning, University of Southern California, Mathematical Oncology Workshop, Speaker, 2017
13. **S. Purushotham**. Deep Learning for Health Care, Amazon Inc., Seattle, 2016
14. **S. Purushotham**. Deep Learning Models for Computational Phenotyping in Health Care, iHealth Workshop, AMIA Clinical Informatics Conference, Invited Speaker and Panelist, 2016
15. **S. Purushotham.** Modeling Social Network Information for Personalized Recommender Systems, IBM Research - T. J. Watson Research Center, Yorktown Heights, 2015

Patents/Invention Disclosures

1. A. Kolatkar, P. Kuhn, Y. Liu, P. Malihi, **S. Purushotham**, System and Method for Predicting Survival Time, (US Patent 11515039, 2022)
2. Y. Liu, Z. Che, **S. Purushotham**, Interpretable deep learning framework for mining and predictive modeling of health care data, (US Patent 11,144,825 2021)
3. **S. Purushotham**, W. Carvalho, Y Liu, Effective Knowledge Transfer Among Patient Populations via Deep Learning, (Filed Patent at USC, 2017)
4. **S. Purushotham**, R. Min, Knowledge-Based Factorized High Order Sparse Learning Models (Filed Patent at NEC Labs, 2016)
5. **S. Purushotham**, J. Shahabdeen, L. Nachman, Collaborative Group-Activity Recommendation Systems, (Filed Invention Disclosure at Intel, 2013)

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Services to the Department

2019-Present Member of Research Committee
2024-Present Member of MS Admissions Committee
2019-2023 Member of Graduate IS Committee
2020-2021 Member of the Search Committee

Services to the University

2021-2022 Member of the Human Health Search Committee
2022-Present Member of the Research Park Advisory Committee

Services to the Profession

A. Editor

1. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Associate Editor, 2024-Present
2. IEEE Academy on Artificial Intelligence, Editorial board member, 2021-Present
3. APSIPA Transactions on Signal and Information Processing, 2021-Present

B. Conference/Workshop Organization

1. First International Conference on Artificial Intelligence for Medicine, Health and Care 2024 (Organizer)
2. International Workshop on Digital Twins for Smart Health, ACM Web Conference 2023 (Workshop Organizer)
3. International Workshop on Mining and Learning from Time Series Workshop (MiLeTS), KDD 2022, 2023, 2024 (Workshop organizer)
4. Workshop on Artificial Intelligence for Time Series Analysis: Theory, Algorithms, and Applications, IJCAI 2022, 2023, 2024 (Workshop organizer)
5. Workshop on Artificial Intelligence for Time Series Analysis: Theory, Algorithms, and Applications, AAAI 2022, AAAI 2023, AAAI 2024, AAAI 2025 (Workshop organizer)
6. Workshop on Artificial Intelligence for Time Series Analysis: Theory, Algorithms, and Applications, ICDM 2023 (Workshop organizer)
7. Workshop on Artificial Intelligence for Time Series Analysis: Theory, Algorithms, and Applications, SDM 2024 (Workshop organizer)
8. MICCAI Workshop on Time-Series Data Analytics and Learning / Workshop on Lesion Evaluation and Assessment with Follow-up (LEAF) 2023 (Workshop Organizer)
9. 57th Annual Conference on Information Science and Systems (CISS) (Federated Learning - Session chair)
10. Mining and Learning from Time Series Workshop (MiLeTS), KDD 2017, 2019, 2020, 2021 (Workshop organizer)
11. ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB) 2021, (Medical Imaging - Session chair)
12. APSIPA 2021, (AI for Health – Panel chair and moderator)
13. ESIP Summer Meeting 2021 (Session chair on Session on Reusability of Machine Learning Models)
14. NOAA AI Workshop 2021 (Session chair)
15. ICDM 2020, (Deep Learning – Session Chair)
16. International Conference on Smart Computing (SmartComp) 2020 (Publicity co-chair)
17. SoCal Machine Learning Symposium, 2017 (Organizer and Workflow Chair)
18. USC Machine Learning Lunch Talks, 2017-2018 (Seminar Organizer)

C. Grant Proposal/Panel Review

1. National Science Foundation, 2020-Present
2. Army Research Office, 2023-Present

3. Swiss National Science Foundation, 2024-Present
4. UMB-ICTR Review Committee, 2020
5. SC CTSI Clinical Review Committee, USC, 2017

D. Conference Area Chair/Program Committee Member

1. International Conference on Machine Learning (ICML) 2018-Present
2. Neural Information Processing Systems (NeurIPS) 2017-Present
3. AAAI Conference on Artificial Intelligence (AAAI) 2018-Present
4. International Conference on Artificial Intelligence and Statistics (AISTATS) 2018-Present
5. AMIA Informatics Summit Scientific Program Committee 2021-Present
6. AMIA Annual Symposium Scientific Program Committee 2023-Present
7. Conference on Computer Vision and Pattern Recognition (CVPR), 2021-Present
8. ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB) 2021-Present
9. SIAM International Conference on Data Mining (SDM) 2019-Present
10. International Conference on Information and Knowledge Management (CIKM) 2017-Present
11. International Joint Conference on Artificial Intelligence (IJCAI) 2019-Present
12. IEEE International Conference on Data Mining (ICDM) 2020
13. International Joint Conference on Artificial Intelligence and Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI) 2020
14. International Joint Conference on Artificial Intelligence and European Conference on AI (IJCAI-ECAI) 2018
15. ACM International Conference on Web Search and Data Mining (WSDM) 2018
16. ACM Intelligent User Interface Conference (IUI) 2017

E. Workshop Program Committee Member

1. Mining and Learning from Time Series Workshop (MiLeTS), KDD 2018, 2016
2. Data-Driven Intelligent Transportation Workshop (DIT), ICDM 2018
3. NIPS Machine Learning for HealthCare Workshop (ML4H) 2017-2023
4. IEEE International Workshop on Healthcare Knowledge Discovery and Management (IHKDM) 2017

F. Journal Reviewer (Selected)

1. Journal of Machine Learning Research
2. IEEE Transactions on Pattern Analysis and Machine Intelligence
3. Nature Scientific Reports
4. IEEE Transactions on Knowledge and Data Engineering
5. IEEE Journal of Biomedical and Health Informatics
6. Journal of Biomedical Informatics
7. IEEE Transactions on Circuits and Systems for Video Technology
8. IEEE Journal of Selected Topics in Signal Processing
9. IEEE Transactions of Multimedia
10. ACM Transactions on Multimedia Computing, Communications and Applications
11. Journal of Computational Statistics and Data Analysis
12. Journal on Multimedia Systems
13. Journal of Signal Processing Systems
14. Journal of Visual Communication and Image Representation
15. World Wide Web Journal
16. PLOS One
17. ACM Health
18. International Journal of Medical Informatics
19. Artificial Intelligence in Medicine

G. Other Professional Services

1. NASA ESDSWG ML Capacity development – ML reproducibility and reusability working group co-chair
2. Member of ACM, IEEE, AMIA, APSIPA. Past member of NYAS, EKN -HKN, Sigma Xi, SCCM

Teaching

A. UMBC

Fall 2024	IS 755: Advanced Artificial Intelligence, Department of Information Systems (Instructor)
Spring 2024	IS 427: Introduction to Artificial Intelligence, Department of Information Systems (Instructor)
Fall 2023	IS 755: Advanced Artificial Intelligence, Department of Information Systems (Instructor)
Spring 2023	IS 427: Introduction to Artificial Intelligence, Department of Information Systems (Instructor)
Spring 2023	IS 757: Deep Learning, Department of Information Systems (Guest Lecturer)
Fall 2022	IS 755: Advanced Artificial Intelligence, Department of Information Systems (Instructor)
Fall 2022	IS 603: Decision Making Support Systems, Department of Information Systems (Instructor)
Fall 2021	IS 460/660: Healthcare Informatics-I, Department of Information Systems (Instructor)
Spring 2021	IS 427: Introduction to Artificial Intelligence, Department of Information Systems (Instructor)
Fall 2020	IS 800: Selected Topics in Machine Learning, Department of Information Systems (Instructor)
Fall 2020	IS 460/660: Healthcare Informatics-I, Department of Information Systems (Instructor)
Spring 2020	IS 427: Introduction to Artificial Intelligence, Department of Information Systems, (Instructor)
Spring 2020	JCET Seminar Series - Application of Artificial Intelligence (AI) in Earth Sciences (Guest Lecturer)
Spring 2020	IS 800: Deep Learning, Department of Information Systems (Guest Lecturer)
Fall 2019	IS 777: Data Analytics for Statistical Learning, Department of Information Systems (Instructor)
Spring 2019	IS 461/661: Biomedical Informatics Applications, Department of Information Systems (Instructor)
Fall 2018	IS 460/660: Healthcare Informatics-I, Department of Information Systems (Instructor)

A. Non-UMBC

Spring 2016	CSCI 567: Machine Learning, Department of Computer Science, University of Southern California (Instructor)
Fall 2015	CSCI 686: Big Data Analytics, Department of Computer Science, University of Southern California (Guest Lecturer)
2010-2013	EE 569: Digital Image Processing, Ming Hsieh Department of Electrical Engineering, University of Southern California (Guest Lecturer)
2009-2014	EE 569: Digital Image Processing, and EE 669: Data Compression, Ming Hsieh Department of Electrical Engineering, University of Southern California (Teaching Assistant/Grader)

CURRICULUM VITAE

EDWARD DILLON

EDUCATION

Ph.D.	2012	The University of Alabama, Computer Science
M.S.	2009	The University of Alabama, Computer Science
B.A.	2007	University of Mississippi, Computer and Informational Science

Experience in Higher Education

2024 – Present	University of Maryland, Baltimore County (UMBC), Associate Professor, Department of Information Systems
2022 – 2024	Morgan State University, Associate Professor, Department of Computer Science
2017 – 2022	Morgan State University, Assistant Professor, Department of Computer Science
2014 – 2016	University of Florida, Postdoctoral Researcher, Department of Computer Science and Engineering
2013 – 2014	Clemson University, Postdoctoral Researcher, School of Computing
2012 – 2013	Jackson State University, Instructor, Department of Computer Science

Experience in Other than Higher Education

2018 – 2018	Google, Visiting Research Scientist, 2018 Faculty-in-Residency (FIR) Program

Honors Received

2020	SCMNC Dean's Faculty of the Year Award in Research, Morgan State University

Research Support and/or Fellowships

2024 – Present	Collaborative Research: CISE-BPC-DP: Opportunities for Promoting Equity and Nurturing Academic Career-preparation in Computing Education for Student Success (OPEN-ACCESS) at Hispanic Serving Institutions. $148,453 ($300,000 in total), National Science Foundation, Co-PI.
2021 – 2024	Collaborative Research: BPC-AE: STARS: Catalyzing Action-Oriented Academic Communities for Broadening Participation in Computing. $171,094 ($3,000,000 in total), National Science Foundation, Co-PI.
2020 – 2024	TARGETED INFUSION PROJECT: Infusing Learning Initiatives for Improving the Programming Proficiency of Computer Science Majors at Morgan State University (a Multi-Year Initiative). $399,636, National Science Foundation, Lead PI.

2019 – 2021	TARGETED INFUSION PROJECT: Infusing Learning Initiatives for Improving the Programming Proficiency of Computer Science Majors at Morgan State University. $150,000, National Science Foundation, Lead PI.
2019 – 2021	Making Computational Thinking Accessible to Diverse Student Populations (MCAD). $50,000, Maryland Pre-Service Computer Science Teacher Education Program, Co-PI.
2018 – 2019	Developing Innovative Technology to Promote Co-Production Between Students and Campus Law-Enforcement. $10,500, Collaborative Research Experience for Undergraduates (CREU) – Computing Research Association(CRA), Faculty Awardee.

Ph.D. Students

Omobolanle Niyi Owoeye, Starting Jan 2025, Chair

Master's Students

Srushti Dharmale (CSEE), Started Nov 2024, Co-Chair

Kevin Lemus, Starting Jan 2025, Chair

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Peer-Reviewed Works

- **Articles**
  1. Williams, K. L., **Dillon, E.**, Jones, J., Carter, S., Walker, W., & Melchior, S. (2024). Proving Our Worth: HBCUs, STEM Partnerships and the Marginalization of Black Women in Industry Settings. *Review of Higher Education.* ***accepted for publication.***
  2. Williams, K. L., **Dillon, E.**, Carter, S., Jones, J., & Melchior, S. (2024). CS=Me: Exploring Factors that Shape Black Women's CS Identity at the Intersections of Race and Gender. *ACM Transactions on Computing Education*, 24(2), 1-20.
  3. **Dillon, E.**, & Williams, K. L. (2020). Course Content as a Tool of Inclusivity for Black/AfricanAmerican Women in Computing. *Journal of Computing Sciences in Colleges* 36(3) 151-160.
  4. Kowalski, R. M., **Dillon, E.**, Macbeth, J., Franchi, M., & Bush, M. (2020). Racial differences in cyberbullying from the perspective of victims and perpetrators. *American Journal of Orthopsychiatry*, 90(5), 644 - 652.
  5. Ladeji-Osias, J. O., Partlow, L. E., & **Dillon, E.** (2018). Using mobile application development and 3-D modeling to encourage minority male interest in computing and engineering. *IEEE Transactions on Education*, 61(4), 274-280.
  6. **Dillon, E.**, Anderson M., and Brown, M. (2014). Teaching Students to Program Using Visual Environments: Impetus for Potential Misconception? *Journal of Computational Science Education*, 5(1), pp. 28-43.
  7. **Dillon, E**,. Anderson M., and Brown, M. (2012). Comparing Feature Assistance Between Programming Environments and Their Effect on Novice Programmers. *Journal for Computing Sciences in Colleges*, 27(5), pp. 69-77.
  8. Liu, L., and **Dillon, E.** (2010). I-Interaction: An Intelligent In-Vehicle User Interaction Model, *International Journal of UbiComp*, 1(3), pp. 57-67.
- **Chapters in Books**
  1. **Dillon, E.**, Williams, B., Kang, S., Gilbert, J., Brinkley, J., and Moon, D. (2017). Bridging the Safety Divide through Technology to Improve the Partnership between Students and Campus Law-Enforcement: An 'App' Opportunity. In *J.D. Ward (Eds.), Policing and Race in America: Economic, Political, and Social Dynamics, Lexington Books*, pp. 207-219.
- **Conference Proceedings**
  1. **Dillon, E.**, Gosha, K., Williams, K. L., Porter, III J. J., and Smith, P. (2024) WIP: Technical Interview Preparation Initiative: Promoting Faculty Awareness and Intervention With Computing Majors. Accepted for publication in 2024 IEEE Frontiers in Education Conference (FIE). ***accepted for publication.***

2. **Dillon, E.**, McMichael, M., Wimberly, Jr, T., Pryor, A. S., Davis, D., Ayodele, T., Arowolaju, A., and Williams, K. L. (2024). Exploring the Impact of Exposing Command Line Programming to Early CS Majors (An HBCU Case Study). Accepted for publication in the 2024 American Society for Engineering Education Annual Conference & Exposition. http://dx.doi.org/10.18260/1-2--47434
3. Lunn, S., **Dillon, E.**, & Sadid, Z. A. (2024). Educational Expertise: Faculty Insights on Preparing Computing Students to Navigate Technical Interviews. Accepted for publication in the 2024 American Society for Engineering Education Annual Conference & Exposition. http://dx.doi.org/10.18260/1-2--47215
4. Field, R., **Dillon, E.**, & Fuller, S. J. (2023). Surveying the Importance of Integrating Technical Interviews into Computer Science Curriculums and Increasing Awareness in the Academy. In 2023 ASEE Annual Conference & Exposition. Presented at the 2023 American Society for Engineering Education Annual Conference & Exposition, http:// dx.doi.org/10.18260/1-2--44382.
5. **Dillon, E.**, Dina, A., McMichael, M., Wimberly, Jr. T., Brown, L., & Williams, K. L. (2023). Exposing Early CS Majors to Technical Interview Practices in the Form of Group-Based Whiteboard Problem Solving Activities. Presented at the 2023 American Society for Engineering Education Annual Conference & Exposition, http:// dx.doi.org/10.18260/1-2--43665.
6. **Dillon, E.**, Wimberly, Jr. T, McMichael, M., Brown, L., Dina, A., & Williams, K. L. (2023). Examining Psychological and Social Factors That Impact the Experiences and Representation of Black Women in Computer Science (A Case Study). Presented at the 2023 American Society for Engineering Education Annual Conference & Exposition, http://dx.doi.org/ 10.18260/1-2--43495.
7. **Dillon, E.**, Williams, K. L., Fuller, S., Djapa. E., Dina, A., Wilridge, M., and Rogers, C. (2022). "Exploring the Impact of Student Learning and Programming Pedagogy while Adjusting to COVID- 19 (An HBCU Case Study)." In 2022 International Conference on Computational Science and Computational Intelligence (CSCI), IEEE, 2022, pp. 1983-1987.
8. **Dillon, E.**, Williams, B., Ajayi, A., Bright, Z., Kimble-Brown, Q., Rogers, C., Lewis, M., Esema, J., Clinkscale, B., and Williams, K. L. (2021). "Evaluating Face-to-Face vs. Virtual Pedagogical Coding Review Sessions in the CS classroom: An HBCU Case Study." 2021 Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT), IEEE, 2021, pp. 1-5.
9. **Dillon, E.**, Williams, B., Ajayi, A., Bright, Z., Kimble-Brown, Q., Rogers, C., Lewis, M., Esema, J., Clinkscale, B., and Williams, K. L. (2021). "Exposing Early CS Majors to Coding Interview Practices: An HBCU Case Study." 2021 Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT), IEEE, 2021, pp. 1-4.

10. Liu, L., **Dillon, E.**, and Zhang, J. (2017). "Finding a Holistic Design for Elderly People to Type on Smartphones." Presented at the ACM 10th International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2017), Rhodes, Greece, pp. 91-95.
11. **Dillon, E.**, Brinkley, J., Moon, D., Gilbert, J., Kang, S., and Williams, B. (2016). "Bridging the Safety Divide through Technology to Improve the Partnership between Students and Campus Law-Enforcement." Appear in the proceedings of the International Conference on Urban Education (ICUE 2016). San Juan, PR.
12. Zhang, X., Tong, J., Vishwamitra, N., Mazer, J., Kowalski, R., Hu, H., Luo, F., Whittaker, E., Macbeth, J. and **Dillon, E.** (2016). "Cyberbullying Detection with a Pronunciation Based Convolutional Neural Network." Presented at the IEEE International Conference on Machine Learning and Applications (IEEE ICMLA'16), Anaheim, CA, pp. 740-745.
13. **Dillon, E.**, Macbeth, J., Kowalski, R., Whittaker, E., and Gilbert, J. (2016). "Is this Cyberbullying or Not?:" Intertwining Computational Detection with Human Perception (A Case Study)." Presented at the Conference Applied Human Factors and Ergonomics (AHFE 2016) – Advances in Human Factors in Cybersecurity, Orlando, FL, pp. 337-345.
14. Abegaz, T., **Dillon, E.**, and Gilbert, J. (2015). "Investigating Perceived Usability and Choice Satisfaction of Alternative Search Engine's Presentation for Older Adults." Presented at the Human Factors and Ergonomics Society (HFES 2015), Los Angeles, CA, 59(1), pp. 80-84.
15. **Dillon, E.**, Gilbert, J., Jackson, J., and Charleston, L. (2015). "The State of African Americans in Computer Science: The Need to Increase Representation." Computing Research Association – Women, Expanding the Pipeline Column, 27(8).
16. Abegaz, T., **Dillon, E.**, and Gilbert, J. (2015). "Exploring Affective Reaction During User Interaction with Colors and Shapes." Presented at the Conference on Applied Human Factors and Ergonomics (AHFE 2015), Las Vegas, NV, vol. 3, pp. 5253-5260.
17. Gilbert, J., Jackson, J., **Dillon, E.**, and Charleston, L. (2015). "African Americans in the U. S. Computing Sciences Workforce: An Exploration of the Education-to-Work Pipeline." Communications of ACM (BPC Viewpoint), pp. 35-38.
18. Dawson, S., Crawford, C., **Dillon, E.**, and Anderson ,M. (2015). "Affecting operator trust in intelligent multirobot surveillance systems." Presented at the IEEE International Conference on Robotics and Automation (ICRA 2015). Seattle, WA, pp. 3298-3304.
19. **Dillon, E.**, Anderson, M., and Brown, M. (2012). "Studying the Novice's Perception of Visual and Command Line Programming Tools in CS1." Human Factors and Ergonomics Society (HFES 2012). Boston, MA, 56(1), pp. 605-609.
20. **Dillon, E.**, Anderson, M., and Brown, M. (2012). "Comparing Mental Models of Novice Programmers when using Visual and Command Line Environments." ACM Southeast Conference (ACM-SE 2012). Tuscaloosa, AL, pp. 142-147.

Presentations

o Invited Professional Presentations & Lectures

1. University of Maryland, Baltimore County - Department of Information Systems (WISS Fall 2024); Enhancing Computational Thinking Skills while Addressing ChatGPT Challenges in Introductory Programming Course; November 20, 2024; Baltimore, MD.
2. The University of Alabama - Department of Computer Science Seminar Series; Exposing Early CS Majors to Technical Interview Practices in the form of Interactive Whiteboard Problem-Solving; August 31, 2023; Tuscaloosa, AL.
3. Clemson University - School of Computing Seminar Series; Exposing Early CS Majors to Technical Interview Practices in the form of Interactive Whiteboard Problem-Solving; October 28, 2022; Virtual Seminar - Due to COVID-19 Pandemic.
4. Morgan State SCMNS Interdisciplinary Seminar Series; Exploring the Potential Impacts of Technology from a Social Context; April 6, 2017; Baltimore, MD.

Creative Achievements

Project Proposal Works in Progress

1. Enhancing Freshmen Computing Majors' Computational Thinking Skills using Industry-Based Practices and Generative AI

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service

- Engineering Makerspace Initiative, IS Department Representative, Spring 2025

Invited Talk

Title: Life After Graduate School: Know Your Options
Audience: HCC FIKA Research Group
Location: ITE 430
Date: Sept 30, 2024

External Reviewer

- North Carolina Central University School of Library and Information Sciences, Tenure & Promotion External Reviewer, Sept 2024
- IEEE EDUCON 2025 - IEEE Global Engineering Education Conference, Manuscript Reviewer, Dec 2024
- NSF Graduate Fellowship - Faculty Reviewer, Spring 2025

Professional

Member, ACM
Member, AAPHDCS

CURRICULUM VITAE

GEORGE KARABATIS, Ph.D.

EDUCATION

Ph.D.	1995	University of Houston, TX	Computer Science
M.S.	1988	University of Houston, TX	Computer Science
B.S.	1983	Aristotle University, Greece	Mathematics

Experience in Higher Education

2020 – present, UMBC, Professor, Information Systems Department
2019 – present, UMBC, Liaison for Programmatic Innovations, Information Systems Department
2013 – present, UMBC, Director, Entrepreneurship and Innovation Minor
2012 – 2019, UMBC, Associate Chair for Academic Affairs, Information Systems Department
2008 – 2020, UMBC, Associate Professor, Information Systems Department
2008 – 2012, UMBC, Graduate Program Director for IS Programs, Information Systems Department
2002 – 2008, UMBC, Assistant Professor, Information Systems Department
1991 – 1995, University of Houston, Research Assistant, Computer Science Department
1990 – 1991, Houston Community College, Part-time Faculty, Computer Science Technology
1984 – 1990, University of Houston, Teaching Assistant, Computer Science Department

Experience in Other than Higher Education

- 1999 – 2001 Telcordia Technologies (formerly Bellcore), Research Scientist, Applied Research
- 1995 – 1998, Bell Communications Research (Bellcore), Research Scientist, Applied Research
- 1987, Diagnostic Center Hospital, Houston, TX, Freelance programmer

Honors Received

- 2019, Inventor Award, Maryland Innovation Initiative, UMBC
- 2017, Inventor Award, Maryland Innovation Initiative, UMBC
- 2015, Inventor Award, Maryland Innovation Initiative, UMBC
- 2012, Faculty Fellow for Entrepreneurship, CoEIT, UMBC
- 2011, Faculty Fellow for Entrepreneurship, CoEIT, UMBC
- 2005, Recognition of Service Award for contributions to ACM SIGMOD/PODS 2005 Conference
- 2001, Telcordia Award, for playing instrumental role establishing a new research branch in Austin, TX
- 1997, Bellcore CEO Award, for enhancing Bellcore's workflow product bringing revenues of over $35M in the first 18 months
- 1984, Fulbright Scholar

Research Support and/or Fellowships

- 2024-2025, $20,000, UMBC Technology Catalyst Fund (TCF) PI on "A Semantic Mapper for Application Integration (SeMAI)", awarded

- 2020-2021, $149,999, Dept. of Energy via Anonitech LLC, Co-PI on "Mitigate: An Adaptive Network Data Anonymization Tool Using Condensation-Based Differential Privacy" UMBC component of an STTR Award to Anonitech LLC totaling $250,000
- 2019-2020, $115,000, State of MD – TEDCO – MII, PI on "A System for Vulnerability Identification (VINCI)"
- 2019-2020, $114,804, State of MD – TEDCO – MII, Advisor on "MITIGATE: A System for Privacy Management Using Condensation-Based Differential Privacy"
- 2018-2021, $597,993 US Dept of Education, CoPI on "Graduate Assistance in Areas of National Need (GAANN) Program"
- 2016-2016, $43,000 NIST/MITRE FFRDC, PI on "Anonymization of Network Trace Data through Differential Privacy"
- 2015-2016, $25,000 Constellation Energy, CoPI on "Energy Education through Green Buildings"
- 2015-2015, $24,930 NIST/MITRE FFRDC, PI on "Anonymization of Network Trace Data"
- 2015-2017, $50,000 NSF I-Corps, Co-PI on "Sensor Technology Box for Smart Health"
- 2014-2015, $99,993 State of MD – TEDCO – MII, PI on "CRAFT: Contextually Revealing Attacks over Flows Tool"
- 2014-2015, $45,000, Constellation Energy, CoPI on "Energy Education through Green Buildings"
- 2013-2014, $45,000 Constellation Energy, CoPI on "UMBC Energy Education through Green Buildings"
- 2012-2015, $399,798 Dept. of Education, CoPI on "Graduate Assistance in Area of National Need"
- 2011-2012, $50,000.00 Northrop-Grumman Corp, PI on "Prediction, Measurement and Circumvention of Cyber Threats through Contextual Semantics"
- 2011-2012, $5,000.00 Paypal Inc., PI on "Instructional Support for IS420 course"
- 2010-2011, $40,000.00 Northrop-Grumman Corp, PI on "Contextual Semantics to counter Cyber Threats"
- 2009-2010, $5,940.00 Institute For Governmental Service and Research (IGSR), PI on "Improvement Assessment of Report Generation for Court Information Systems"
- 2009-2010, $5,000.00 UMBC Entrepreneurship Award, PI on "Innovation and Entrepreneurship in a senior database course"
- 2008-2009, $20,000 Northrop-Grumman (Essex Division), PI on "The effect of Context and Semantic Information for Software Quality Assurance"
- 2008-2009, $20,000 UMBC, PI on "Context and Semantic Information in the context of Software Quality Assurance"
- 2007-2009, $61,734 National Science Foundation, PI on "SGER: Using Context and Semantic Networks to support Software Engineers"
- 2006-2007, $48,500 US Geological Survey (USGS), proposal Co-PI on "Spatiotemporal Data Explorer: An integrated spatiotemporal data warehouse for visualization driven knowledge discovery in water resources management"
- 2005-2005, $115,000 Maryland State Board of Elections, Key Personnel on "Security and Accessibility of E-voting Solutions"
- 2004-2005, $2,996 UMBC DRIF equipment support grant, PI
- 2003-2003, $5,000 UMBC Summer Faculty Fellowship, PI

Patents

- G. Karabatis, Z. Chen, A. AlEroud, F. Yang. "A method for anonymizing network data using differential privacy" Patent filed in 2020, Awarded in 2022. U.S. Patent No. 11,483,294 B2
- G. Karabatis, F. Cheirdari. "Method and System for Reducing False Positives in Static Source Code Analysis Reports Using Machine Learning and Classification Techniques" Regular patent application number 2020-0401702 A1 USPO, Awarded 2020
- G. Karabatis, A. AlEroud. "Method and System for Detecting Cyber-attacks" Regular patent application, USPO, number 61916983

Ph.D. Students

- Antonios Xenakis, 2024, chair
- Manesh Pillai, 2022, chair
- Foteini Cheirdari-Argiropoulos, 2019, chair
- Shawn Johnson, 2019, chair
- Ahmed AlEroud, 2014, chair
- Leonard Traeger, chair
- Sabrina Nourin, chair
- Amir Mojtahedi, member
- Emon Dey, member
- Fatema Hasan, member
- Ira Winkler, member
- Oluwagbemiga Nelson Ajayi, member
- Mohammad Ishtiaque (Abir) Rahman, member
- Debvrat Varshney, 2024, member
- Naima Khan, 2023, member
- Ronak Razavisousan, 2022, member
- Bipendra Basnyat, 2022, member
- Nujood Alodadi, 2022, member
- Lavanya Elluri, 202, member
- Samson Oni, 2021, member
- Amrita Anam, 2019, member
- Yili Zhang, 2018, member
- Nilavra Pathak, 2019, member
- Shaikha Al-Duaij, 2017, member
- Song Chen, 2016, member
- Lei Shi, 2014, member
- Xin Li, 2012, member
- Tamas Gal, 2011, member
- Madhushri Banerjee, 2011, member

- Madhushri Ahluwalia, 2011, member
- Michael McGuire, May 2010, member
- Parag Namjoshi, December 2009, member
- Pimwadee Chaovalit, March 2009, member
- Shilang Tang, August 2008, member
- Boonlit Adipat, May 2008, member
- Shibnath Mukerjee, May 2007, member
- Navin Kumar, May 2006, member
- Nabie Conteh, June 2004, member

M.S. Students

- Leonard Traeger, 2022, co-chair (MS awarded by University of Cologne, Germany)
- Sai Pallaprolu, 2017, chair
- Muthukumar Thevar, 2017, chair
- Adwait Kawatkar, 2015, chair
- Jimish Kadakia, 2015, chair
- Sankalp Sawant, 2015, chair
- Prayank Sharma, 2012, chair
- Ruman Tambe, 2011, chair
- Sejal Shah, 2011, chair
- Eric Tao, 2010, chair
- Shawn P. Johnson, 2009, chair
- Rishi Sankineni, 2017, member
- Sarthak Pathak, 2017, member

Publications

- **Books**
  - I. Alsmadi, G. Karabatis, A. AlEroud, (Eds) "Information Fusion for Cyber-Security Analytics" Springer International Publishing, isbn: 978-3-319-44257-0, 2016.
  - C. Debruyne, H. Panetto, W. Guédria, P. Bollen, I. Ciuciu, G. Karabatis, R. Meersman (Eds) "On the Move to Meaningful Internet Systems: OTM 2019 Workshops" Confederated International Workshops: EI2N, FBM, ICSP, Meta4eS and SIAnA, Rhodes, Greece, October 21–25, 2019, Revised Selected Papers. ISBN 978-3-030-40907-4
- **Peer-Reviewed Works**
  - **Articles**
    - A. Xenakis, Z. Chen, G. Karabatis. "A Cluster-based Approach for Distributed Anonymization of Vertically Partitioned Data" Int'l Journal of Web Engineering Technology, accepted for publication January 2024

- A. Xenakis, S. Nourin, Z. Chen, G. Karabatis, A. Aleroud, and J. Amarsingh. "A Self-adaptive and Secure Approach to Share Network Trace Data". ACM Digital Threats, Volume:4, Number: 4, Article 50. Dec 2023, 20 pages. https://doi.org/10.1145/3617181
- A. Aleroud, F. Yang, S. Pallaprolu, Z. Chen, G. Karabatis. "Anonymization of Network Trace Data through Condensation-based Differential Privacy" *ACM Digital Threats: Research and Practice.* ACM Press. Volume: 2, Issue: 4, pp. 1-23. December 2021
- I. Alazzam, A. AlEroud, Z. Al Latifah, G. Karabatis. "Automatic Bug Triage in Software Systems Using Graph Neighborhood Relations for Feature Augmentation". *IEEE Transactions on Computational Social Systems.* IEEE Press. Volume: 7, Issue: 5, pp. 1288-1303. September 2020.
- A. AlEroud, G. Karabatis. "Queryable Semantics to Detect Cyber-attacks: A Flow-based Detection Approach". *IEEE Transactions on System, Man, and Cybernetics: Systems*. IEEE Press. Volume: 48, Issue: 2, pp. 207-223. January 2018, (online Sept 2016).
- A. AlEroud, G. Karabatis. "Contextual Information Fusion for Intrusion Detection: a Survey and Taxonomy". *Knowledge and Information Systems*, Springer. Volume 52. Number 3. pp: 563-619. September 2017.
- R. Tambe, G. Karabatis, V. Janeja. "Context Aware Discovery in Web Data through Anomaly Detection" International Journal on Web Engineering and Technology. Inderscience Publishers. Volume 10, Number 1. 2015.
- A. AlEroud, G. Karabatis, P. Sharma, P. He. "Context and Semantics for Detection of Cyber-Attacks" International Journal of Information and Computer Security. Inderscience Publishers. Volume 6, Number 1, pp.63-92. March 2014.
- A. AlEroud and G. Karabatis. "Discovering Unknown Cyber Attacks using Contextual Misuse and Anomaly Detection" Academy of Science and Engineering Science Journal. Volume 1, Number 3, December 2012, pp. 106-120
- P. Chaovalit, A. Gangopadhyay, G. Karabatis, Z. Chen "Discrete Wavelet Transform-based Time Series Analysis and Mining" ACM Computing Surveys, Volume 43, Number 2, Article 6, January 2011, pp. 6:1-6:37
- G. Karabatis, Z. Chen, V. Janeja, T. Lobo, M. Advani, M. Lindvall, R.L. Feldmann "Using Semantic Networks and Context in Search for Relevant Software Engineering Artifacts" Journal on Data Semantics, Volume XIV, Lecture Notes in Computer Science LNCS 5880, Springer-Verlag, 2009, pp. 74-104
- N. Kumar, A. Gangopadhyay, G. Karabatis, S. Bapna, Z. Chen "Measuring Interestingness of Discovered Skewed Patterns in Data Cubes," Decision Support Systems, Elsevier, Cambridge, MA, Volume 46, available online September 2008, pp. 429-439, doi:10.1016/j.dss.2008.08.003
- Z. Chen, A. Gangopadhyay, G. Karabatis, S. Holden, M. McGuire "Semantic Integration of Government Data for Water Quality Management," Journal of Government Information Quarterly – Special Issue on Information Integration, Elsevier, Cambridge, MA, Volume 24, Issue 4, October 2007, pp. 716-735
- Z. Chen, A. Gangopadhyay, G. Karabatis, M. McGuire, C. Welty. "Semantic Integration and Knowledge Discovery for Environmental Research", Journal of Database Management, IDEA Group, Hershey, PA, Volume 18, Number 1, January-March 2007, pp. 43-68
- N. Kumar, A. Gangopadhyay, G. Karabatis. "Supporting Mobile Decision Making with Association Rules and Multi-layered Caching", Journal of Decision Support Systems, Elsevier, Cambridge, MA, Volume 43, Number 1, February 2007, pp. 16-30, available online, 27 June 2005

- G. Karabatis. "Using Context in Semantic Data Integration", Journal of Interoperability in Business Information Systems, Volume 1, Number 3, December 2006, pp. 9-21
- N. Kumar, A. Gangopadhyay, G. Karabatis, S. Bapna, Z. Chen. "Navigation Rules for Exploring Large Multidimensional Data Cubes", Journal of Data Warehousing and Mining, IDEA Group, Hershey, PA, Volume 2, Number 4, October-December 2006, pp. 27-48
- A. Umar, G. Karabatis, L. Ness, B. Horowitz and A. Elmagarmid, "Enterprise Data Quality: A Pragmatic Approach," Journal of Information Systems Frontiers, Kluwer, Dordrecht, The Netherlands, Volume 1, Number 3, October 1999, pp. 279-301
- D. Georgakopoulos, G. Karabatis, and S. Gantimahapatruni, "Specification and Management of Interdependent Data in Operational Systems and Data Warehouses," Distributed and Parallel Databases, An International Journal, Kluwer, Dordrecht, The Netherlands, Volume 5, Number 2, April 1997, pp. 121-166
- M. Rusinkiewicz, A. Sheth, and G. Karabatis, "Specifying Interdatabase Dependencies in a Multidatabase Environment", IEEE Computer, IEEE Computer Society Press, Los Alamitos, CA, Volume 24, Number 12, December 1991, pp. 46-53

- **Chapters in Books**
  - G. Karabatis, M. Rusinkiewicz, and A. Sheth, "Interdependent Database Systems," Management of Heterogeneous and Autonomous Database Systems, Morgan-Kaufmann, San Francisco, CA, 1999, pp. 217-252
  - G. Karabatis, M. Rusinkiewicz, and A. Sheth, "Correctness and Enforcement of Multidatabase Interdependencies," Advanced Database Systems, N. Adam and B. Bhargava (editors), Lecture Notes in Computer Science No. 759, Springer-Verlag, New York, NY, 1993, pp. 337-358
  - M. Rusinkiewicz, A. Sheth, and G. Karabatis, "Using Polytransactions to Manage Interdependent Data," Database Transaction Models for Advanced Applications, A. Elmagarmid (editor), Morgan-Kaufmann, San Francisco, CA, 1992, pp. 555-581

- **Conference Proceedings**
  - L. Traeger, A. Behrend, G. Karabatis. "Scoping: Towards streamlined entity collections for multi-sourced Entity Resolution with self-supervised agents" (**Best Paper Award**) Int'l Conference on Enterprise Information Systems (ICEIS). Angers, France. April 2024
  - L. Traeger, A. Behrend, G. Karabatis. "Inteplato: Generating Mappings of Heterogeneous Relational Schemas using Unsupervised Learning" Int'l Conference on Computational Science and Computational Intelligence (CSCI). IEEE Press, Las Vegas, NV, December 2022.
  - S. Nourin, G. Karabatis, F. Argiropoulos. "Measuring Software Security Using Improved CWE Base Scores" CIKM 3rd Int'l Workshop on Privacy, Security, and Trust in Computational Intelligence (PSTCI), Australia November 2021.
  - A. AlEroud, G. Karabatis. "Bypassing Detection of URL-based Phishing Attacks Using Generative Adversarial Deep Neural Networks" Proceedings of the Sixth International Workshop on Security and Privacy Analytics. New Orleans, LA, August 2020, pp. 53–60
  - A. AlEroud, G. Karabatis. "SDN-GAN: Generative Adversarial Deep NNs for Synthesizing Cyber Attacks on Software Defined Networks". International Workshop on Security via Analytics and Applications (SIANA). Part of 2019 OTM Conferences, Rhodes, Greece. Lecture Notes in Computer Science. Springer. October 2019, pp. 211-220

- S. Johnson, G. Karabatis. "A Contextual Driven Approach to Risk Event Tagging". International Workshop on Security via Analytics and Applications (SIANA). Part of 2019 OTM Conferences, Rhodes, Greece. Lecture Notes in Computer Science. Springer. October 2019, pp. 239-248
- M. Pillai, G. Karabatis. "Enhancing spatial query results using semantics and multiplex networks". International Workshop on Heterogeneous Networks Analysis and Mining. Los Angeles, CA, February 2018.
- F. Cheirdari, G. Karabatis. Analyzing False Positive Source Code Vulnerabilities Using Static Analysis Tools. IEEE International Conference on Big Data (Big Data) (pp. 4782-4788) December 2018.
- S. Pallaprolu, R. Sankineni, M. Thevar, G. Karabatis, J. Wang. "Zero-Day Attack Identification in Streaming Data Using Semantics and Spark". BigData Congress, Hawaii, USA. 2017
- A. Aleroud, G. Karabatis. "Methods and techniques to identify security incidents using domain knowledge and contextual information". IFIP/IEEE Symposium on Integrated Network and Service Management (IM). (pp 1040-1045). Lisbon, Portugal. 2017
- F. Cheirdari, G. Karabatis. "On the Verification of Software Vulnerabilities during Static Code Analysis using Data Mining Techniques." In: Panetto H. et al. (eds) On the Move to Meaningful Internet Systems. OTM 2017 Conferences. OTM 2017. Lecture Notes in Computer Science, vol 10574. Springer, Cham
- S. Johnson, G. Karabatis. "Scalable Semantically Driven Decision Trees for Crime Data." Proceedings of the 11th Conference on Semantic Technology for Intelligence, Defense, and Security. November 2016.
- A. Aleroud, Z. Chen, G. Karabatis. Network traffic Anonymization Using a Prefix-Preserving Condensation-based Technique (pp. 934-942). OTM Confederated International Conferences On the Move to Meaningful Internet Systems. Cloud and Trusted Computing. Rhodes, Greece. Springer. October 2016.
- M. Pillai, G. Karabatis. "Using Multiplex Networks to Model Cybersecurity Attack Profiles". OTM Confederated International Conferences On the Move to Meaningful Internet Systems. Cloud and Trusted Computing. Rhodes, Greece. Springer. October 2016.
- G. Karabatis, J. Wang, A. AlEroud. "Towards Adaptive Big Data Cyber-attack Detection via Semantic Link Networks". *The first Workshop of Mission-Critical Big Data Analytics workshop (MCBDA 2016)*. Prairie-View, TX. May 2016.
- A. AlEroud, G. Karabatis. "Beyond Data: Contextual Information Fusion for Cyber Security Analytics" Proceedings of International ACM Symposium on Applied Computing (ACM-SAC 2016), Pisa, Italy. ACM Press. April 2016.
- T. Ding, A. AlEroud, and G. Karabatis. "Multi-granular Aggregation of Network Flows for Security Analysis" IEEE Int'l Conference on Intelligence and Security Informatics (ISI 2015), 27-29 Baltimore, MD. May, 2015.
- A. AlEroud and G. Karabatis. "Context Infusion in Semantic Link Networks to Detect Cyber-attacks: A Flow-based Detection Approach" IEEE International Conference on Semantic Computing (ICSC 2014), pp. 175-182, 16-18 June, 2014, Newport Beach, CA doi: 10.1109/ICSC.2014.29
- A. AlEroud and G. Karabatis. "Detecting Zero-day Attacks Using Contextual Relations" International Conference on Knowledge Management for Organizations (KMO 2014), Santiago, Chile, pp. 373-385. 2-5 September, 2014.

- A. AlEroud, and G. Karabatis. "Toward Zero-Day Attack Identification Using Linear Data Transformation Techniques," Software Security and Reliability (SERE), 2013 IEEE 7th International Conference on, pp.159-168, 18-20 June 2013 doi: 10.1109/SERE.2013.16
- A. AlEroud and G. Karabatis, "A Contextual Anomaly Detection Approach to Discover Zero-Day Attacks" Proceedings of ASE International Conference on Cyber-Security. IEEE CS Press. Academy of Science and Engineering. Washington DC. December 14-16, 2012.
- P. He, L. Zhou, and G. Karabatis, "Using Domain Knowledge to Facilitate Cyber Security Analysis". AMCIS 2012 Conference Proceedings, Seattle, WA, August, 2012
- P. He and G. Karabatis. "Using Semantic Networks to Counter Cyber Threats" IEEE International Conference on Intelligence and Security Informatics (ISI), Extended Abstract, Arlington, VA, June 11-14, 2012. doi: 10.1109/ISI.2012.6284294
- A. AlEroud, G. Karabatis, "A System for Cyber Attack Detection Using Contextual Semantics" International Conference on Knowledge Management, Services and Cloud Computing (KMO 2012), Springer, Advances in Intelligent Systems and Computing. Volume 172, Salamanca, Spain, July 2012, pp 431-442
- M. Lindvall, R. L. Feldmann, G. Karabatis, Z. Chen, V.P. Janeja, "Searching for Relevant Software Engineering Artifacts using Semantic Networks" ACM Symposium on Applied Computing, ACM Press, Honolulu, HI, March 2009, pp. 496-500
- A. Sherman, A. Gangopadhyay, S. Holden, G. Karabatis, A. Koru, C. Law, D. Norris, J. Pinkston, A. Sears, and D. Zhang, "An Examination of Vote Verification Technologies: Findings and Experiences from the Maryland Study" in Proceedings from the 2006 USENIX/ACCURATE Electronic Voting Technology Workshop, August 1, 2006, Vancouver, B.C., Canada
- D. Zhang, G. Karabatis, Z. Chen, B. Adipat, L. Dai, Z. Zhang "Personalization and Visualization on Handheld Devices", ACM Symposium on Applied Computing, ACM Press, Dijon, France, April 2006, pp. 1008-1012
- G. Karabatis, and S. Thatte, "Workflow Technologies for Information Distribution," Proceedings of 1st ATIRP Annual Conference, College Park, MD, January 1997, pp. 283-287
- A. Sheth, and G. Karabatis, "Multidatabase Interdependencies in Industry," Proceedings of the ACM-SIGMOD Conference, ACM Press, Washington DC, May 1993, pp. 483-486
- G. Karabatis, and S. Gantimahapatruni, "Enforcing Data Dependencies in Cooperative Information Systems," Proceedings of the International Conference on Intelligent and Cooperative Information Systems, IEEE Computer Society Press, Rotterdam, The Netherlands, May 1993, pp. 332-341
- Y. Halabi, G. Karabatis, et. al, "Narada: An Environment for Specification and Execution of Multi-System Applications," Proceedings of the Second International Conference on Systems Integration, Morristown, NJ, June 1992, pp. 680-690
- G. Karabatis and A. Sheth "Specifying Interdependent Data: A Case Study at Bellcore," Annual Review of Communications, International Engineering Consortium, Chicago IL, December 1992, pp. 928-937
- G. Karabatis, et. al, "Query Processing in a Heterogeneous Multidatabase Environment," First Annual IEEE Symposium on Parallel and Distributed Processing, IEEE Computer Society Press, Dallas, May 1989, pp. 162-169

- **Other**
  - A. AlEroud, G. Karabatis. "Cyber Attack Detection Using Conceptual Semantics" Moving Target Research National Symposium, Poster presentation, Annapolis, MD, June 2012

- M. Rusinkiewicz, G. Karabatis, et. al., "Omnibase: Design and Implementation of a Multidatabase System" Distributed Processing Technical Committee Newsletter, IEEE Computer Society Press, Los Alamitos, CA, Volume 10, Number 2, November 1988, pp. 20-28

- **Non-Peer Reviewed Works**
  - **Articles**
    - G. Karabatis "Nested Transaction Models" Encyclopedia of Database Systems (2nd Edition), L. Liu, T. Ozsu, editors, Springer-Verlag, New York, NY, 2018, pp. 2485-2489
    - G. Karabatis "Polytransactions" Encyclopedia of Database Systems (2nd Edition), L. Liu, T. Ozsu, editors, Springer-Verlag, New York, NY, 2018, pp. 2775-2776
    - G. Karabatis "Split Transactions" Encyclopedia of Database Systems (2nd Edition), L. Liu, T. Ozsu, editors, Springer-Verlag, New York, NY, 2018, pp. 3665-3666
    - A. AlEroud, G. Karabatis. "Using Contextual Information to Identify Cyber-Attacks". In I. Alsmadi, G. Karabatis, A. AlEroud (Ed.), *Information Fusion for Cyber-Security Analytics* (pp. 1-16). Springer International Publishing, 2016
    - A. AlEroud, G. Karabatis. "A Framework for Contextual Information Fusion to Detect Cyber-Attacks". In I. Alsmadi, G. Karabatis, A. AlEroud (Ed.), *Information Fusion for Cyber-Security Analytics* (pp. 17-51). Springer International Publishing, 2016
    - A. AlEroud, G. Karabatis. "Detecting Unknown Attacks Using Context Similarity". In I. Alsmadi, G. Karabatis, A. AlEroud (Ed.), *Information Fusion for Cyber-Security Analytics* (pp. 17-51). Springer International Publishing, 2016

- **Works Submitted or In Preparation**
  - **Articles**
    - A. Xenakis, Z. Chen, G. Karabatis. "A Novel and Scalable Approach to Consistent Anonymization and Efficient Integration of Distributed Data for Analysis" under review
    - L. Traeger, A. Behrend, G. Karabatis. "Semantically Enriched Entity Linkages with Language Models" under review
    - M. Pillai, G. Karabatis. "Generating Geospatial Ontologies Using Multilayer Networks for Semantically Enriched Queries" in preparation
  - **Conference Proceedings**
    - L. Traeger, A. Behrend, G. Karabatis. "Collective Scoping: Streamlining Entity Collections for Linkages" under review
    - A. Melhem, A. Aleroud, M. Ibrahem, A. Al-Mamun, G. Karabatis. "Cluster-Based and Decentralized Federated Learning for AI-driven Healthcare Analytics in Pervasive Environments" under review
    - L. Traeger, A. Behrend, G. Karabatis. "Collaborative Scoping: Self-Supervised and Distributed Linkability Assessment of Entities" in preparation

Service to the Department

2019 – present, Liaison for Programmatic Innovations

2019 – present, Member, Leadership group of IS department

2021 – present, Member, ADMIT MS Committee

2024 – 2025, Chair, Academic Program Review (APR) Committee

2019 – 2020, Chair, Assessment Committee

2019 – 2020, Member, Undergraduate Program Committee
2019 – 2020, Member, Graduate Program Committee
2019 – 2020, Member, Lecturer/Professor of the Practice (PoP) Online MS Hiring Search Committee
2012 – 2019, Associate Chair for Academic Affairs
2014 – 2019, Member, Planning Committee
2013 – 2019, Member, Budget Committee
2012 – 2018, Chair, Assessment Committee
2012 – 2019, Chair, Adjunct Lecturer Promotion Committee
2012 – 2019, Member, Merit Review Committee
2012 – 2019, Chair, Grade Appeals Committee
2008 – present, Member, Promotion and Tenure Committee
2003 – present, Member, PhD Comprehensive Exam Committee
2018 – 2019, Chair, Adjunct Faculty Committee
2018 – 2019, Chair, Tenure Track Professor Hiring Search Committee on AI/KM
2017 – 2018, Chair, Tenure Track Professor Hiring Search Committee on Health IT
2016 – 2017, Chair, Tenure Track Professor Hiring Search Committee on Data Science
2016 – 2017, Member, Tenure Track Professor Hiring Search Committee on AI/KM
2014 – 2015, Chair, Tenure Track Professor Hiring Committee on Data Science
2014 – 2015, Member, Tenure Track Professor Hiring Committee on AI/KM
2014 – 2015, Member, PoP/GPD for HIT Hiring Committee
2013 – 2014, Member, Tenure Track Professor Hiring Committee
2013 – 2014, Member, Student Recruiting (Online MS in IS) Committee
2013 – 2014, Member, CS/IS Lecturer Hiring Committee
2013 Member, IS Lecturer Hiring Committee
2013 Chair, DP&TC (third-year review) Committee
2012 Chair, Post-tenure Review Committee
2012 Chair, DP&TC (third-year review) Committee
2008 – 2012, Chair, Graduate Program Director for IS Programs
2008 – 2014, Member, Honors and Awards Committee
2007 – 2010, Member, Assessment Committee
2007 – 2012, Member, Marketing Input Group
2006 – 2007, Member, Research Committee
2004 – 2006, Member, Web Committee
2004, 2009, 2010, Member, Merit Review Committee
2003 – 2004, Member, Undergraduate Committee
2002 – 2004, Member, ABET Accreditation Committee

Service to College/University

2022 – present, Member, Faculty Activity Work Group
2013 – present, Director, Entrepreneurship & Innovation Minor
2013 – present, Chair, Entrepreneurship & Innovation Faculty Fellows Committee

2011 – present, Chair, Entrepreneurship Coordinating Committee
2010 – present, Faculty Advisor, Orthodox Christian Fellowship (OCF) student organization
2017 – present, Chair, Commercialization & ENTR REsearch (CENTRE) Funding Initiative
2018 – 2019, Member, Scholar Selection Committee for Center for Women in IT (CWIT)
2018 – 2019, Member, CYBER Scholar Selection Committee (CYBER)
2015 – 2017, Chair, MPS in Entrepreneurship, Innovation, Leadership (EIL) Committee
2013 – 2017, CoEIT Professional Programs Committee
2016 Member, CoEIT Strategic Plan Implementation Committee
2015 Member, CoEIT Strategic Plan Implementation Committee
2014 – 2015, Member, UMBC Strategic Committee on Innovative Curriculum and Pedagogy
2014 Member, Asst. GPD for Eng. Mgmt and Systems Engineering Hiring Committee
2011 – 2013, CoEIT Faculty Fellow for Entrepreneurship
2011 – 2013, Member, UMBC Alex Brown Entrepreneurship Board
2011 – 2013, Member, Entrepreneurship Coordinating Committee
2008 – 2012, Member, Committee of Graduate Program Directors
2008 – 2009, Member, New Student Book Experience Committee
2007 – 2011, Member, UMBC Alex Brown Entrepreneurship Board
2003 – 2009, Member, CWIT Scholarship Committee

Service to Community

1996 – present, Volunteered several hours per week for cultural, religious, and technology community projects and services
2007 – 2012, Volunteer soccer coach/assistant for boys in Howard County, MD

Service to Profession

- 2025, Finance and Registration Chair, Int'l Conference on Pervasive Computing and Communications (PerCom 2025)
- 2011 – present, Editorial Board Member, International Journal on Web Engineering Technology (IJWET)
- 2025, Program Committee member, Knowledge Management for Organizations (KMO'25) Kaohsiung, Taiwan
- 2024, Program Committee member, Knowledge Management for Organizations (KMO'24) Taipei, Taiwan
- 2023, Program Committee member, Knowledge Management for Organizations (KMO'23) Bangkok, Thailand
- 2019, Program Co-Chair, Security via Analytics and Applications (SIANA 2019) Workshop, OTM Conferences, Rhodes, Greece.
- 2019, Program Committee member, Cloud and Trusted Computing (CTC'19) OTM Conferences. Rhodes, Greece.
- 2019, Program Committee member, Web Information Systems and Technologies (WEBIST'19), Vienna, Austria
- 2018, Panelist, National Science Foundation (NSF)
- 2018, Program Committee member, Knowledge Management for Organizations (KMO'19) – Zamora, Spain
- 2018 , Program Committee member, Cloud and Trusted Computing (CTC'18) OTM Conferences. Valleta, Malta.

- 2018, Program Committee member, Web Information Systems and Technologies (WEBIST'18), Seville, Spain
- 2018, Program Committee member, Knowledge Management for Organizations (KMO'18) – Zilina, Slovakia
- 2017, Panelist, National Science Foundation (NSF)
- 2017, Program Committee member, Cloud and Trusted Computing (CTC'17) OTM Conferences. Rhodes, Greece
- 2017, Program Committee member, Web Information Systems and Technologies (WEBIST'17), Porto, Portugal
- 2017, Program Committee member, Knowledge Management for Organizations (KMO'17) – Beijing, China
- 2016, Editor, Book, "Information Fusion for Cyber Security Analytics". Review/approve chapters submitted for the book on cybersecurity analytics.
- 2016, Program Committee member, Web Information Systems and Technologies (WEBIST'16), Rome, Italy
- 2016, Member, Program Committee member, Cloud and Trusted Computing (CTC'16), OTM Conferences. Rhodes, Greece
- 2016, Program Committee member, Knowledge Management for Organizations (KMO'16) – Hagen, Germany
- 2016, Panelist, National Science Foundation (NSF)
- 2015, Program Committee member, Web Information Systems and Technologies (WEBIST'15), Lisbon, Portugal
- 2015, Program Committee member, Knowledge Management for Organizations (KMO'15) – Big Data, Maribor, Slovenia
- 2014, Program Committee member, Web Information Systems and Technologies (WEBIST'14), Barcelona, Spain
- 2013, Session Chair, Software Security and Reliability Conference (SERE-13), Washington DC
- 2013, Program Committee member, Web Information Systems and Technologies (WEBIST'13), Aachen, Germany
- 2012, Program Committee member, Web Information Systems and Technologies (WEBIST'12), Porto, Portugal
- 2012, Program Committee member, Knowledge Management for Organizations (KMO'12) Salamanca, Spain
- 2011, Program Committee member, Web Information Systems and Technologies (WEBIST'11), Noordwijkerhout, The Netherlands
- 2010, Program Committee member, Web Information Systems and Technologies (WEBIST'10), Valencia, Spain
- 2009, Program Committee member, Web Information Systems and Technologies (WEBIST'09), Portugal
- 2008, Program Committee member on 10th International Workshop on Learning Software Organizations (LSO 2008) Frascati - Monteporzio Catone - Rome, Italy
- 2008, Panelist, National Science Foundation (NSF)
- 2008, Program Committee member, ACM Symposium on Applied Computing, (ACM SAC'08) Ubiquitous Computing Track, Fortaleza, Ceará, Brazil

- 2008, Program Committee member, Web Information Systems and Technologies (WEBIST'08), Funchal, Madeira, Portugal
- 2008, Program Committee member, International Workshop on Learning Software Organizations (LSO '08) Rome, Italy
- 2007, Program Committee member, International Conference on Information Systems (ICIS'07), Montreal, Quebec, Canada
- 2007, Program Committee member, IEEE International Conference on Collaborative Computing (CollaborateCom'07), White Plains, NY
- 2007, Program Committee member, ACM Symposium on Applied Computing, (ACM SAC'07) Ubiquitous Computing Track, Seoul, S. Korea
- 2007, Program Committee member, Web Information Systems and Technologies (WEBIST'07), Barcelona, Spain
- 2006, Program Committee member, ACM Symposium on Applied Computing, (ACM SAC'06) Ubiquitous Computing Track, Dijon, France
- 2005, Registration co-chair, ACM Special Interest Group on Management of Data (SIGMOD'05) International Conference, Baltimore, MD
- 2005, Program Committee member, International Workshop on Mobility in Databases and Distributed Systems (MDDS'05), Copenhagen, Denmark
- 2005, Program Committee member, International Conference on Web Information Systems (WISE'05), New York, NY
- 2005, Program Committee member, ACM Symposium on Applied Computing, (ACM SAC'05) Ubiquitous Computing Track, Santa Fe, NM
- 2001, Program Committee member, 17th International Conference on Data Engineering (ICDE'01), Heidelberg, Germany
- 1999, Program Committee member, 9th International Workshop on Research Issues on Data Engineering: Information Technologies for Virtual Enterprises (RIDE-VE'99), Sydney, Australia
- 1998, Publicity Chair and Webmaster, 14th International Conference on Data Engineering (ICDE'98), Orlando, Florida
- 1997—2001 Telcordia Technical representative in the Workflow Management Coalition (WfMC)
- 1994, Organizing Committee member 10th International Conference on Data Engineering, (ICDE'94), Houston, Texas
- Reviewer of papers submitted to journals: Computers and Security, IEEE Transactions on Big Data, Future Generation Computer Systems, Int'l Journal of Web Engineering Technology, Journal of Database Systems, IEEE Transactions on Knowledge and Data Engineering, Information Systems, ACM Transactions on Database Systems, Distributed and Parallel Databases, Enterprise Information Systems, Data Science and Engineering Journal, Very Large Databases Journal, etc.
- Reviewer of papers submitted to conferences (ADB, CollaborateCom, CoopIS, ICDE, ICIS, KMO, LSO, MDDS, PDIS, SAC, SIANA, VLDB, WISE, WEBIST, etc.)
- Member of ACM, IEEE, IEEE-CS

CURRICULUM VITAE

DINA GLAZER

EDUCATION/PROFESSIONAL DEVELOPMENT

M.S.	1995	University of Maryland Baltimore County, Information Systems
B.S.	1993	University of Maryland Baltimore County, Information Systems
MCSE	2000	
CNE	1994	
PIVOT+	July/August 2020	

Experience in Higher Education

August 2021- Present	Associate Undergraduate Program Directory for Advising, IS
July 2019 – Present	UMBC, Senior Lecturer/Advisor, Information Systems
2000 – June 2019	UMBC, Lecturer/Advisor, Information Systems
1993-1995	UMBC, Graduate Research Assistant, Information Systems
1994-1995	UMBC, Instructor, Information Systems
1994	Essex Community College, Instructor

Experience in Other than Higher Education

2000-2001	Aether Systems, Sr. Systems Engineer
1999-2000	Euler American Credit Indemnity, Sr. Systems Engineer
1995-1999	Howard Community College, Network Engineer

SERVICE TO THE DEPARTMENT

2024-2025	Member, Faculty Search Committee (PoP/Lecturer)
2020-2021	Member, Faculty Search Committee (1 Tenure-track)
2019-2020	Member, Faculty Search Committee (3 Tenure-track)
2018-2019	Member, Faculty Search Committee (Pop/Lecturer)
2018-2019	Member, Library Committee
2018	Member, Merit Review Committee
2010-Present	Member, Undergraduate Committee

2006-Present	Liaison, IS Council of Majors
2012-2017	Member, Assessment Committee
2012-2014	Member, Honors and Awards
2011-2012	Member, Library Committee
2008-2011	Chair, Student Recruitment Committee

SERVICE TO THE UNIVERSITY

2020-Present	Member, Special Sessions Committee
2012-Present	Chair, Nominating Committee
2012- 2020	Member, Athletics Policy Committee
2012-Present	Chair, Honors and Awards Committee
2012-Present	Member, Employee of the Quarter Selection Committee

CURRICULUM VITAE

FOAD HAMIDI

EDUCATION

2016	Ph.D. York University, Computer Science
2007	M. Sc. York University, Computer Science
2004	B.A. York University, Computer Science

Experience in Higher Education

2019 – present	UMBC, Assistant Professor
2018 – 2019	UMBC, Research Assistant Professor
2016 – 2018	UMBC, Postdoctoral Research Fellow
2015	University of Seville, Visiting Researcher
2008 – 2016	York University, Research Assistant
2012	York University, Course Director
2008 – 2014	York University, Teaching Assistant

Experience in Other than Higher Education

2013	BITC Bhutan, Overseas Expert
2007	UVATT (CanAssist), Assistive Technology Developer

Honors Received

2024	COEIT Early Career Excellence Award
2022	Special Recognition for Outstanding Review (CHI)
2021	Special Recognition for Outstanding Review (CHI)
2020	Best Paper Nomination, International Conference on Web Accessibility (W4a)
2020	Special Recognition for Outstanding Review (CHI)
2019	Special Recognition for Outstanding Review (CSCW)
2018	Recognition of Contribution to Inclusion and Diversity (CSCW)
2018	Best Paper Award, ACM Conference on Human Factors in Computer Systems (CHI)
2017	Best Paper Nomination, ACM Conference on Computers and Accessibility (ASSETS)
2014	Bridgable "Bridge the Gap Award" for TalkBox system
2014	EECS Graduate TA Teaching Excellence Award
2004	Bachelor of Art with Cum Laude Honours
2004	Honorable Mention, The ACM East Central North American Programming Contest
2002	York University Faculty of Arts Sessional Academic Achievement List
2001	York University Faculty of Arts Sessional Academic Achievement List

Research Support and/or Fellowships

2024 – current	$169,161 (Subaward - total award $1,686,589), NSF, "Introducing Synthetic Biology Using Co-Designed, Culturally Responsive BioMaker Activities for Family Engagement in Underserved Communities", UMBC PI
2024 – current	$337,419 (Collaborative - total award $1,646,534), NSF, "Space for All: Creating Accessible Technology-Rich Makerspaces and Learning Activities for Youth and Young Adults with Autism", UMBC PI
2020 – current	$320,346 (Collaborative - total award $1,497,816), NSF, "Rec-to-Tech: Understanding the Role of Rec Center Educators in Creating Maker-based Technology and Computer Science Learning Hubs for Urban Youth", UMBC PI
2024 – current	$20,000 COEIT Interdisciplinary Proposal (CIP) Award (with Lara Martin)
2024	$8,000 Summer Research Faculty Fellowship (SURFF)
2022	$24,000, UMBC IRC, "Infinite Transformations: A Multimedia Exploration of Embodied Persian Poetry," PI
2022	$2,800, McNair Scholars Research Institute Fellowship (student: Zaria Oliver), UMBC, Faculty Research Advisor
2022	$20,000, Generation Google Scholarship (student: Erin Higgins), UMBC, Faculty Advisor
2022	$1,500, McNair Scholars Spring Research Institute (SRI) Fellowship (student: Ousmane Diop), UMBC, Faculty Research Advisor
2021	$1,000, Undergraduate Research Award (student: Zulekha Karachiwalla), UMBC, Faculty Research Advisor
2020 – 2022	$57,052 (Collaborative - total award $168,367), NSF, "Responding to COVID-19 using High-speed Mesh Wireless Community Internet", UMBC PI
2020 – 2022	$7,776 (REU Supplement), NSF, "Responding to COVID-19 using High-speed Mesh Wireless Community Internet", UMBC PI
2020	$1,000, Undergraduate Research Award (student: Zulekha Karachiwalla), UMBC, Faculty Research Advisor
2016 – 2020	$308,425, NSF, "Making Opportunities for Baltimore Inner City Youth in a 3D Print Shop", PI (transferred from Amy Hurst)
2019	$5,107, ACM SIGCHI, "Diversity and Inclusion Lunch at the 2019 ACM C&C/DIS Conferences," PI
2019	$1,000, Undergraduate Research Award (student: Mikhail Dorfman), UMBC, Faculty Research Advisor
2019	$2,800, McNair Scholars Spring Research Institute (SRI) Fellowship (student: Fayokemi Ojo), UMBC, Faculty Research Advisor
2019	$1,500, The University System of Maryland's Louis Stokes Alliance for Minority Participation (USM LSAMP) Fellowship (student: Fayokemi Ojo), UMBC, Faculty Research Advisor
2017 – 2019	$249,960, NSF, "Rec2Tech: Scaling Informal Technology Education through Makerspaces", co-PI
2017	$1,000, DO-IT Program, UW, "AccessEngineering Minigrant", PI
2014	$1,000, University of Seville's visiting researcher grant, visiting researcher

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Peer-Reviewed Works (student lead authors are identified with a *)

- **Journal Articles**

1. McDonald, N. Stamato, L., Hamidi, F. 2024. Connecting in Crisis: Investigating Equitable Community Internet Access in the US During the COVID-19 Pandemic. ACM J. Comput. Sustain. Soc. Just Accepted (July 2024). https://doi.org/10.1145/3677326
2. Gomez-Gonzalez, I. M., Castro-Garcia, J. A., Merino-Monge, M., Sanchez-Anton, G., Hamidi, F., Mendoza-Sagrera, A., Molina-Cantero, A. J. 2024. Emotional State Measurement Trial (EMOPROEXE): A Protocol for Promoting Exercise in Adult and Children with Cerebral Palsy. J. Pers. Med., 14(5), 521; J. Pers. Med. 2024, 14(5), 521; https://doi.org/10.3390/jpm14050521
3. McDonald, N., Massey, A., Hamidi, F. 2023. Elicitation and Empathy with AI-enhanced Adaptive Assistive Technologies (AATs): Towards Sustainable Inclusive Design Method Education. Journal of Problem-Based Learning in Higher Education, 11(2), 78-99.
4. Hamidi, F., Kidane, T., Owur, P. M., Hynie, M., Baljko. 2023. Supporting Social Inclusion with DIY-ATs: Perspectives of Kenyan Caregivers of Children with Cognitive Disabilities. ACM Trans. Access. Comput. (TACCESS), Article 20, 27 pages.
5. Easley*, W., Hurst, A., Mentis, H., Hamidi, F. 2023. Youths' Usage of an Informal Chatting Tool in an After-school 3D Print Shop. Proc. ACM Hum.-Comput. Interact. 7, CSCW1, Article 118, 20 pages.
6. Walker, J., Stamato, L., Asgarali-Hoffman, S., Hamidi, F., Scheifele, L. 2022. Community Labs in the United States: BioMakerspaces for Life Science Learning. Public Understanding of Science, https://doi.org/10.1177/0963662522113585.
7. Hamidi, F. and Karachiwalla, Z. 2022. Structural Accessibility Barriers and Service Gaps Facing Refugees with Disabilities in the United States. Journal of Enabling Technologies, Vol. 16 No. 3, 189-203.
8. Hamidi, F., Owuor, P., Hynie, M., and Baljko, M. 2022. "Knowledge Comes Through Participation": Understanding Disability through the Lens of DIY Assistive Technology in Western Kenya. Proc. ACM Hum.-Comput. Interact. 6, CSCW1, Article 72, 25 pages.
9. Stamato*, L., Higgins, E., Prottoy, H. M., Asgarali-Hoffman, N., Scheifele, L., Dusman, L., deCarvalho, T. Ascencao, T., Hamidi, F. 2022. Raaz: A Transdisciplinary Exploration at the Intersection of Bioart, HCI, and Community-Engagement. Frontiers in Computer Science, 4.
10. McDonald, N., Massey, A., Hamidi, F. 2021. AI-Enhanced Adaptive Assistive Technologies: Methods for AI Design Justice. Data Engineering, 3.
11. Long*, E., Vijaykumar, S., Gyi, S., Hamidi, F. 2021. Rapid transitions: Experiences with Accessibility and Special Education during the COVID-19 Crisis. Frontiers in Computer Science, 2:617006. doi: 10.3389/fcomp.2020.617006
12. Merritt, T., Hamidi, F., Alistar, M., Menezes, M. 2020. Living Media Interfaces: A Multi-Perspective Analysis of Biological Materials for Interaction. Digital Creativity, 30 (1), 1-21.
13. Scheuerman*, M., Branham, S., and Hamidi, F. 2018. Safe Spaces and Safe Places: Unpacking Technology-Mediated Experiences of Safety and Harm with

Transgender People. Proceedings of the ACM on Human-Computer Interaction, Vol. 2, CSCW, Article 155. (Recognition of Contribution to Diversity and Inclusion).

14. Easley*, W., Hamidi, F., Lutters, W., and Hurst, A. 2018. Shifting Expectations: Understanding Youth Employees' Handoffs in a 3D Print Shop. Proceedings of the ACM on Human-Computer Interaction, Vol. 2, CSCW, Article 47.
15. Hamidi, F., Baljko, M., Kunic, T., and Feraday, R. 2015. TalkBox: A DIY Communication Board Case Study. Journal of Assistive Technologies, 9(4), 187-198.
16. Hamidi, F., Baljko, M., Ecomomopoulos, C., Livingston, N., and Spalteholz, L. G. 2015. Co-designing a speech interface for people with dysarthria. Journal of Assistive Technologies, 9(3), 159-173.
17. Baljko, M. and Hamidi, F. 2014. Knowledge Co-creation and Assistive Technology. Journal of Scholarly and Research Communication, 5(4).
18. Hamidi, F. and Kapralos, B. 2009. A Review of Spatial Sound for Virtual Environments and Games with Graphics Processing Units. The Open Virtual Reality Journal, 1(1): 8-17.

- **Conference Papers**

1. Higgins*, E., Sakowicz, M., Hamidi, F. 2024. An Ecosystem of Support: A U.S. State Government-Supported DIY-AT Program for Residents with Disabilities. Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '24), To appear. Paper acceptance rate 30%
2. Crawford*, K. A., Khoo, Y., Kumar, A., Mentis, H. & Hamidi, F. 2024. Decoding the Privacy Policies of Assistive Technologies. In Proc. of the 21st International Web for All Conference (W4A '24).
3. Vader*, M. L., Pineda, M., Hamidi, F., Kuber, R. 2024. "Pretty Much an Advocate as Well": Investigating the Experiences of Self-Employed Individuals with Visual Impairments. In Proc. of the 21st International Web for All Conference (W4A '24).
4. Asave*, R., Kuber, R., Hamidi, F. 2024. An Investigation of the Experiences of Orientation and Mobility Trainers in India. In Proc. of the 21st International Web for All Conference (W4A '24).
5. Stamato*, L., Prottoy, H., Higgins, E., Scheifele, L., and Hamidi, F. 2024. Message in a Bottle: Investigating Bioart Installations as a Transdisciplinary Means of Community Engagement. Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'24), Article 734, 1–17. Paper acceptance rate 26%
6. Crawford*, K., Spiel, K., and Hamidi, F. 2023. Complex Dynamics: Disability, Assistive Technology, and the LGBTQIA+ Community Center Experience in the United States. Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23), Article 27, 1–15. Paper acceptance rate 30%
7. Higgins*, E., Oliver, Z., and Hamidi, F. 2023. Towards a Social Justice Aligned Makerspace: Co-designing Custom Assistive Technology within a University Ecosystem. Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23), Article 28, 1–13. Paper acceptance rate 30%
8. Hamidi, F., Easley, W., and Hurst, A. 2023. A Quantitative Study of Youth Employees' Use of an Informal Chatting Tool at a Workforce Training Program. Proceedings of the 2023 IEEE Frontiers in Education Conference (FIE), 01-08.

9. Hamidi, F., Easley, W., Hurst, A. 2023. The Impact of Participating in an Afterschool Professional Training Program on Youth Employees (RTP). Proceedings of the 2023 American Society of Engineering Education Conference and Exposition (ASEE'23), paper ID 37703.
10. Prottoy*, H., M., Stamato, L. and Hamidi, F. 2023. "Critical questions are missing": Perspectives of environmental justice activists of Bangladesh on justice and technology. Proceedings of the Ninth Workshop on Computing within Limits (LIMITS'23).
11. Higgins*, E., Posada, J., Kimble-Brown, Q., Abler, S., Coy, A. and Hamidi, F. 2023. Investigating an Equity-based Participatory Approach to Technology-rich Learning in Community Recreation Centers. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, 1-18. Paper acceptance rate 27%
12. Higgins*, E., Stamato, L., Easley, W., Godes, K., Hurst, A., Hamidi, F. 2022. Creating 3D Printed Assistive Technology Through Design Shortcuts: Leveraging Digital Fabrication Services to Incorporate 3D Printing into the Physical Therapy Classroom. Proceedings of the International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22), Article 34, 1-16.
13. Alduljian*, I., Stamato, L., Asgarali-Hoffman, N., Hamidi, F., Walker, J. Masouri, M., and Scheifele, L. 2022. Community biology labs in practice: A Pasteur's quadrant. Transdisciplinarity and the Future of Engineering, 173-183.
14. Wu, T. and Hamidi, F. 2022. Using Arduino Kits and Discord to Implement a Fully Remote Laboratory Course During the COVID-19 Pandemic. Proceedings of the 2022 American Society of Engineering Education Conference and Exposition (ASEE'22), paper ID 36497. Permanent URL: https://peer.asee.org/40440
15. Hamidi, F., Karachiwalla, Z. 2022. Note: "Fear is Grounded in Reality": The Impact of the COVID-19 Pandemic on Refugees' Access to Health and Accessibility Resources in the United States. Proceedings of the 2022 ACM Conference on Computing and Sustainable Societies (COMPASS'22), 661-667.
16. Hamidi, F., Karachiwalla, Z. 2022. "I'm ok because I'm alive": Understanding Socio-cultural Accessibility Barriers for Refugees with Disabilities in the US. Proceedings of the 19th International Web for All Conference (W4A '22), Article 26, 1–11. Paper acceptance rate 35%
17. Nagraj*, A., Kuber, R., Hamidi, F., Parasad, R. 2021. Investigating the Navigational Habits of People who are Blind in India. Proceedings of the International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21), 1-10. Paper acceptance rate 28%
18. Easley*, W., Asgarali-Hoffman, N., Hurst, A., Mentis, H., Hamidi, F. 2021. Using a Participatory Toolkit to Elicit Youth's Workplace Privacy Perspectives. Proceedings of the 2021 European Symposium on Usable Security (EuroUSEC'21), 211-222. Paper acceptance rate 24%
19. Hamidi, F., Coy, A., and Freeland, A. 2021. Planting Seeds: Implementing Maker-Based Learning Programs for Urban Youth. Proceedings of the 2021 American Society of Engineering Education Conference and Exposition (ASEE'21), paper ID 32425.
20. Asgarali-Hoffman*, S. N., Hamidi, F. 2021. Perspectives of Bioartists and Community Lab Organizers on Working with Living Organisms. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21), Article 591, 1-15. Paper acceptance rate 25.7%
21. Hamidi, F., Stamato, L., Scheifele, L., Hammond, R. C. V., and Asgarali-Hoffman, S. N. 2021. "Turning the Invisible Visible": Transdisciplinary Bioart Explorations

in Human-DNA Interaction. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21), Article 592, 1-15. Paper acceptance rate 25.7%

22. Russ*, S. and Hamidi, F. 2021. Online Learning Accessibility During the Covid-19 Pandemic. Proceedings of the 18th International Cross-Disciplinary Conference on Web Accessibility (W4A'21). New York, NY: ACM Press, Article 8, 1-7. Paper acceptance rate 53%
23. Hamidi, F., Freeland, A., Grimes, S., Grimes, S., Moulton, A., and Coy, A. 2020. Expanding Informal Maker-Based Learning Programs for Urban Youth. Proceedings of the 2020 IEEE Frontiers in Education Conference (FIE), 1-9. Paper acceptance rate 55%
24. Wojciechowska*, A., Hamidi, F., Lucero, A., and Cauchard, J. 2020. Chasing Lions: Co-Designing Human-Drone Interaction in Sub-Saharan Africa. Proceedings of the 2020 ACM Designing Interactive Systems Conference (DIS ’20). New York, NY: ACM Press, 141–152. Paper acceptance rate 24%
25. Hamidi, F., Moulton, A., Grimes, S., Grimes, S., and Coy, A. 2020. Using Retrospective Surveys to Assess the Impact of Participating in an Afterschool Maker Learning Program on Youth. Proceedings of the 2020 American Society of Engineering Education Conference and Exposition (ASEE’20), paper ID 29746.
26. Hamidi, F., Poneres, K., Massey, A. and Hurst, A. 2020. Using a Participatory Activities Toolkit to Elicit Privacy Expectations of Adaptive Assistive Technologies. Proceedings of the 17th International Cross-Disciplinary Conference on Web Accessibility (W4A'20). New York, NY: ACM Press, 17:1-17:12 (Best Paper Award Nomination). Paper acceptance rate 62%
27. Hamidi, F., Kumar, S., Dorfman, M., Ojo, F., Kottapalli, M., and Hurst, A. 2019. SenseBox: A DIY Prototyping Platform to Create Audio Interfaces for Therapy. Proceedings of the 13th International Conference on Tangible, Embedded and Embodied Interaction (TEI’19), New York, NY: ACM Press, 25-34. Paper acceptance rate 34%
28. Hamidi, F., Mbullo, P., Onyango, D., Hynie, M. McGrath, S., and Baljko, M. 2018. Participatory Design of DIY Digital Assistive Technologies in Western Kenya. Proceedings of the 2nd African Human-Computer Interaction Conference (AfriCHI’18), New York, NY: ACM Press, 78-88. Paper acceptance rate 37.5%
29. Hamidi, F., Poneres, K., Massey, A., and Hurst, A. 2018. Who Should Have Access to my Pointing Data? Privacy Tradeoffs of Adaptive Assistive Technologies. Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '18), New York, NY: ACM Press, 203-216. Paper acceptance rate 26%
30. Hamidi, F., Easley, W., Grimes, S., Grimes, S., and Hurst, A. 2018. Youth Attitudes Towards Assessment Tools in After-school Informal Learning and Employment Training Programs. Proceedings of the 2018 American Society of Engineering Education Conference and Exposition (ASEE’18), paper ID 21422.
31. Martin-Hammond, A., Hamidi, F., Bhalerao, T., Ortega, C., Ali, A., Hornback, C., Means, C., and Hurst, A. 2018. Designing an Adaptive Web Navigation Interface for Users with Variable Pointing Performance. Proceedings of the 15th International Cross-Disciplinary Conference on Web Accessibility (W4A'18). New York, NY: ACM Press, 16:1-16:10. Paper acceptance rate 35%
32. Hamidi, F., Scheuerman, M., and Branham, S. 2018. Gender Recognition or Gender Reductionism? The Social Implications of Automatic Gender Recognition Systems. Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18). New York, NY: ACM Press, 8:1-8:13. (Best Paper Award, Top 1%). Paper acceptance rate 25%

33. Hamidi, F., Baljko, M., and Gómez, I. 2017. Using Participatory Design with Proxies with Children with Limited Communication. Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '17). New York, NY: ACM Press, 250-259. (Best Paper Award Nomination). Paper acceptance rate 22%
34. Hamidi, F., Grimes, S., Grimes, S., Wong, C. and Hurst, A. 2017. Assessment Tools for an Afterschool Youth Maker Program. Proceedings of the 2017 Conference on Creativity and Fabrication in Education (FabLearn'17). New York, NY: ACM Press, 12:1-12:4. Paper acceptance rate 42%
35. Hamidi, F. and Baljko, M. 2017. Engaging Children Using a Digital Living Media System. Proceedings of the 2017 Conference on Designing Interactive Systems (DIS'17). New York, NY: ACM Press, 711-723. Paper acceptance rate 24%
36. Haworth*, B., Usman, M., Baljko, M. and Hamidi, F. 2016. The Use of Working Prototypes for Participatory Design with People with Disabilities. Proceedings of the 14th International Conference on Computers Helping People with Special Needs (ICCHP'16), Berlin: Springer, 134-141. Paper acceptance rate 50%
37. Hamidi, F. and Baljko, M. 2014. Subversive Interaction Design: Digital Design and Inspiration. Proceedings of the 9th International Conference on Design and Emotion (DE'14), 25-31.
38. Hamidi, F., Comeau, N., Saenz, K., and Baljko, M. 2014. HugBug: A Wearable Interface for Facilitating Digital Design for Children. Proceedings of the 9th International Conference on Design and Emotion (DE'14), 706-709.
39. Hamidi, F., Saenz, K., and Baljko, M. 2014. Sparkles of Brilliance: Incorporating Cultural and Social Context in Codesign of Digital Artworks. Proceedings of the 2014 conference on Interaction design and children (IDC'14). New York, NY: ACM Press, 77-84. Paper acceptance rate 31%
40. Hamidi, F. and Baljko, M. 2014. Rafigh: A Living Media Interface for Speech Intervention. Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems (CHI'14). New York, NY: ACM Press, 1817-1820. Paper acceptance rate 26%
41. Hamidi, F., Baljko, M. Kunic, T., and Feraday, R. 2014. Do-It-Yourself (DIY) Assistive Technology: A Communication Board Case Study. Proceedings of the 13th International Conference on Computers Helping People with Special Needs (ICCHP'14), Berlin: Springer, 287-294. Paper acceptance rate 50%
42. Hamidi, F. and Baljko, M. 2012. Reverse-Engineering Scanning Keyboards. Proceedings of the 13th International Conference on Computers Helping People with Special Needs (ICCHP'12), Berlin: Springer, 431-438. Paper acceptance rate 50%
43. Hamidi, F. and Baljko, M. 2012. Using Social Networks for Multicultural Creative Collaboration. Proceedings of the International Conference on Intercultural Collaboration (ICIC'12), New York, NY: ACM Press, 39-46. Paper acceptance rate 60%
44. Hamidi, F., Baljko, M., Livingston, N., and Spalteholz, L. 2010. CanSpeak: A Customizable Speech Interface for People with Dysarthric Speech. Proceedings of the International Conference on Computers Helping People with Special Needs (ICCHP'10). Berlin: Springer, 605-612. Paper acceptance rate 50%
45. Spalteholz, L., Lin, K. F., Livingston, N., and Hamidi, F. 2008. KeySurf: A Character Controlled Browser for People with Physical Disabilities. Proceedings of the 17th World Wide Web Conference (WWW'08). New York, NY: ACM Press, 31-39. Paper acceptance rate 12%

- **Book Chapters**
    1. Hamidi, F., Scheuerman, M. and Branham, S. Gender is Personal – Not Computational. 2023. In: E. Rodriguez (Ed.), The Conversation on Gender Diversity. Baltimore, MD: JHU Press.
    2. Hamidi, F., Mbullo, P., Hynie, M., Baljko, M., and McGrath, S. 2017. Potentials of Digital Assistive Technology and Special Education in Kenya. In: C. Ayo, & V. Mbarika (Eds.), Sustainable ICT Adoption and Integration for Socio-Economic Development, 125-151. Hershey, PA: IGI Global.

- **Accepted Workshop Proposals**
    1. Mankoff, J., Crawford, K., Weise, J., Mack, K., Hamidi, F. 2023. A11yFutures: Envisioning the Future of Accessibility Research. Proceedings of the ACM SIGACCESS Conference on Computer and Accessibility (ASSETS'23), 1-4.
    2. Struzek, D., Cerna, K., Paluch, R., Bittenbinder, S., Müller, C., Reuter, A., Stamato, L., Subasi, O., Hamidi, F., Vines, J. 2021. Designing for new Forms of Vulnerability: Exploring transformation and empowerment in times of COVID-19. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems is the premier international conference on Human-Computer Interaction (CHI '21), Article 82, 1–5.
    3. Hamidi, F., Müller, C., Baljko, M., Schorch, M., Lewkowicz, M. and Stangl, A. Engaging with Users and Stakeholders: The Emotional and the Personal. Proceedings of the 19th International Conference on Supporting Group Work (GROUP '16), 453-456, New York: ACM Press, 2016.

- **Refereed Posters, Demos, and Videos**
    1. Coy, A. and Hamidi, F. 2023. Collaborative: Understanding the Role of Informal STEM Educators in Creating Maker-based and Community-Centered Technology and Computer Science Learning Hubs for Urban Youth. Poster Presented at NSF AISL PI Meeting, Alexandria, VA.
    2. Hamidi, F. 2023. Raaz: Transcendence through Creating Transgenic Poetic Wine. Interdisciplinary Conference on Taboo, Transgression, and Transcendence, Malta.
    3. Gómez-González, I. M., Molina-Cantero, A. J., Castro-García, J. A., Merino-Monge, M., Pousada-García, T., Hamidi, F., Meriggi, P. 2022. Physiological Computing as a Facilitator for the Promotion of Physical Activity in People with Functional Diversity.
    4. Lopez-Brown, K., Hamidi, F. 2022. Digital Divide During the COVID-19 Crisis: Lack of Internet Connectivity and Community Mesh Networks. UMBC Review, 23.
    5. El-Ashry, A., Zhang, X., Shrotri, S., Abler, S., Hamidi, F. 2021. Exploring the Collaboration Possibilities of Distributed Making for Storytelling Using 3D Printing Pens. Proceedings of the 2021 CSCW Conference Extended Abstracts (CSCW EA' 21), 44-48.
    6. Hamidi, F. 2020. Rafigh: A Living Media Interface to Engage and Motivate Children with Disabilities. Proceedings of the Global Community BioSummit 4.0, Virtual.
    7. Hamidi, F., Bouhmad, A., and Coy, A. 2020. Responding to COVID-19 with Community Internet. 2020 Virtual Conference (CRA'20). Virtual. https://youtu.be/Y5Yi3MI2UDQ
    8. Hamidi, F., Grimes, S., Grimes, S., Moulton, A., and Coy, A. 2020. Scaling Informal Technology Education through Makerspaces. 2020 Conference for the American Society of Engineering Education (ASEE'20). Virtual.

9. Easley, W., McCoy, D., Grimes, S., Grimes, S., Hamidi, F., Lutters, W., and Hurst, A. 2018. Scaling Informal Technology Education through Makerspaces. Proceedings of the 2018 CSCW Conference Extended Abstracts (CSCW EA' 18), 221-224.
10. Poneres, K., Hamidi, F., Massey, A., and Hurst, A. 2018. Using Icons to Communicate Privacy Characteristics of Adaptive Assistive Technologies. Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '18), 388-390.
11. Martin-Hammond, A., Hamidi, F., Bhalerao, T., Ali, A., Hornback, C., Means, C., and Hurst, A. The Participatory Design of an Adaptive Interface to Support Users with Changing Pointing Ability. Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '17), 343-344 ACM, New York, NY, USA, 2017.
12. Baljko, M., Hynie, M., McGrath, S., Hamidi, F., Oracha, P., Mbullo, P., and Onyango, D. Fabrication Lab in a Kit (FLiK): DIY Assistive Technology for Children with Disabilities in Kenya. International Society for the Advancement of Science in Africa Conference (SASA), Kigali, Rwanda, 2017.
13. Hamidi, F., Young, T. S., Sideris, J., Ardeshiri, R., Leung, J., Rezai, P., and Whitmer, B. Using Robotics and 3D Printing to Introduce Youth to Computer Science and Electromechanical Engineering. Proceedings of the 2017 CHI conference Extended Abstracts on Human Factors in Computing Systems (CHI EA' 17), 942-950, ACM New York, 2017.
14. Hamidi, F., Merino, M., Gomez, I., Lopez, S. Molina, A. and Baljko, M. A Wearable System for Multisensory Stimulation Therapy for Children. Proceedings of the 2017 CHI conference Extended Abstracts on Human Factors in Computing Systems (CHI EA' 17), 1655-1662, ACM New York, 2017.
15. Hurst, A., Grimes, S., McCoy, D., Carter., N., Easley, W., Hamidi, F., and Salib, G. Lessons Learned Creating Youth Jobs in an Afterschool Maker Space. 2017 Conference for the American Society of Engineering Education (ASEE'17). Columbus, OH, 2017.
16. Hamidi, F. and Baljko, M. Facebook use in Bhutan: A Comparative Study. Graphics Interface Poster Proceedings (GI'14), 1-2, New York: ACM Press, 2014.
17. Hamidi, F. and Baljko, M. Rafigh: A Living Media Interface for Learning Games. CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14). 407-410. New York: ACM Press, 2014.
18. Hamidi, F. and Baljko, M. Rafigh: An Edible Living Media Installation. Proceedings of the 8th International Conference on Tangible, Embedded and Embodied Interaction (TEI '14). 345-346. New York: ACM Press, 2014.
19. Hamidi, F., Baljko, M., Moakler, A. and Gadot, A. Synchrum: A Tangible Interface for Rhythmic Collaboration. Adjunct Proceedings of the 25th Annual Symposium on User Interface Software and Technology (UIST '12), 63-64, New York: ACM Press, 2012.
20. Hamidi, F., and Baljko, M. Collaborative Poetry on the Facebook Social Network. Proceedings of the International Conference on Supporting Group Work (GROUP10), 305-306. New York: ACM Press, 2010.
21. Hamidi, F. and Baljko, M. Speech Elicitation for Voice Banking using Augmented Everyday Objects. Poster presented at the ALS society of Canada 6th Annual ALS Research Forum, Toronto, Ontario, May 2010.
22. Hamidi, F. Using Interactive Objects for Speech Intervention. SIGACCESS Accessible Computing 96, 28-31, New York: ACM Press, January 2010.

Non-Peer-Reviewed Works

○ **Invited Papers**

1. Horvath, A., Beloff, L., Bertel, L. B., Boros, J., Cebolla, L., Fricker, P., Hamidi, f., Hanczyc, M. M., Jochum, E., Lochtefeld, M., Merritt, T., Vissonova, K. 2023. Weaving Hybrid Futures: Sustainability in Higher Education with PBL Through Art, Science, and Robotics – Special Issue. Journal of Problem-Based Learning, 11, 2, I-VII.
2. Shinohara, K. and Hamidi, F. 2021. Introduction to the Special Issue on ASSETS'21. ACM Transactions on Accessible Computing, 14, 4, Article 18e (October 2021), 2 pages.
3. Hamidi, F. 2020. DIY Assistive Technology Prototyping Platforms: An International Perspective. IEEE Pervasive Health, 18(4), 12-16.
4. Hamidi, F., Saenz, K., and Baljko, M. Echoes of Diversity: Using Maker Activities to Support Children's Learning and Empowerment. Revista DIS, 29-38, 2017.
5. Hamidi, F., and Baljko, M. Makers with a Cause: Fabrication, Reflection and Community Collaboration. Proceedings of the International Conference on Distributed, Ambient, and Pervasive Interactions, 49-61, 2015.

○ **Workshop Papers and Presentations**

1. Stamato, L., Hamidi, F. Controlling Transformation: Youth Experience of Synthetic Biology Competition. Sustainable Unmaking: Designing for Biodegradation, Decay, and Disassembly (Workshop at CHI'24), May 2024.
2. Hamidi, F., Higgins, E. An Equity-based Participatory Approach to Technology-rich Learning in Community Recreation Centers. Provost's Teaching & Learning Symposium, UMBC, April 2023.
3. Chen, L., Shah, P., Prabhu, K., Daghrity, L., Shetty, S., Delgado, M. L., Hamidi, F., Godwin, K., Lipsmeyer, L. 2023. ABii at School: Some Initial Findings from a Long-term In-school Field Study with a Commercial Robot-assisted Learning System. Robots for Learning Workshop HRI4L (Workshop at Human Robot Interaction Conference), Stockholm, Sweden, March 2023.
4. Hamidi, F. Reflecting on the Privacy of Assistive Technologies. Accessibility and Disability in CS Education (Workshop at SIGCSE'23), Toronto, Canada, March 2023.
5. Higgins, E., Hamidi, F. Rec-to-Tech: Implementation of a Training Program for Educators to Lead a Youth Program in Baltimore Recreation Centers. Reimagining Systems for Learning Hands-on Creative and Maker (Workshop at CHI'22), April 2022 (online).
6. Stamato, L., Hamidi, F. Reflections on Art, Practice, Technology, and Solidarity "There is no justice, just us": Making Mosaics of Justice in Social Justice Human-Computer Interaction (Workshop at CHI'22), April 2022, (online).
7. Prottoy, H. M., Yao, Y., Hamidi, F. Understanding account sharing practices for online resources at Bangladesh. Capital-Area Colloquium on Trustworthy and Usable Security/Privacy, December 2021 (online).
8. Hamidi, F. Distributed Making: Teaching Design and Physical Modeling at Home Using 3D Pens. Silver Linings: Lessons Learned from Teaching during the Pandemic, September 2021 (online).
9. Hamidi, F. DIY Assistive Technology Platforms for Learning and Inclusion. Human Computer Interaction Consortium (HCIC'21), June 2021 (online).
10. McDonald, N., Hamidi, F., Massey A., Mentis, H. Developing Intersectional Elicitation Tools to Understand the Privacy Concerns and Challenges of Disabled

Vulnerable Users. Human Computer Interaction Consortium (HCIC'21), June 2021 (online).

11. Brown. K., Wright R. M., Laguna, D., Stamato, L., McDonald, N., and Hamidi, F. Digital Divide During the COVID-19 Crisis: Lack of Internet Connectivity and Community Mesh Networks. Designing for New Forms of Vulnerability – Workshop at CHI'21 Conference. May 2021 (online).
12. Stamato, L. & Hamidi, F. 2021. Exploring Program Administrator Technology Views
    and Use in Support of Informal Maker Education.
    2021 CRA-WP Grad Cohort for Women, Virtual.
13. McDonald, N., Stamato, L., Bouhmad, A., Moulton, A., Coy, A., and Hamidi, F. Private Alternatives: Community Mesh Internet During COVID-19. Privacy and Pandemics: Responsible Uses of Technology and Health Data During Times of Crisis – An International Tech and Data Conference. October 2020 (online).
14. Stamato, L., and Hamidi, F. Encountering Challenges, Drawing on Assets: Exploring Alternatives in Maker-Based Learning Programs for Youth in an Underserved Urban Setting. From Needs to Strengths: Operationalizing an Assets-Based Design of Technology. October 2020 (online).
15. Hamidi, F., Massey, A., Easley, W., Mentis, H., and Hurst, A. Facilitating Privacy Conversations with Vulnerable Populations. Workshop on Privacy and Power: Acknowledging the Importance of Privacy Research and Design for Vulnerable Populations. April 2020 (online).
16. Hamidi, F., Poneres, K., Massey, A., and Hurst, A. Perspectives of People with Essential Tremors on the Privacy of Adaptive Assistive Technologies. Workshop on AI Fairness for People with Disabilities. Pittsburgh, PA, USA, October 2019.
17. Hamidi, F. Using an Assistive Technology Prototyping Platform to Teach Human-Centered Computing. Provost's Teaching & Learning Symposium, UMBC, September 2019.
18. Hamidi, F., Poneres, K., Massey, A., and Hurst, A. The User Privacy of Adaptive Assistive Technologies. 3rd Workshop on Inclusive Privacy and Security. Baltimore, MD, USA, August 2018.
19. Scheuerman, M., Hamidi, F., and Branham, S. (Ab)user-Centered Design? Considering the Involvement of Abusive Users in the Design Process. Understanding "Bad Actors" Online. Montreal, Canada, April 2018.
20. Hamidi, F. Universal Design: An Intercultural Perspective. Accessing Higher Ground Conference. Westminster, CO, USA, November 2017.
21. Hamidi, F., Saenz, K., and Baljko, M. The Silent Language of Materials: Gender, E-Textiles and Mayan Weaving. HCI across Borders Symposium (HCIxB), Denver, CO, May 2017.
22. Hamidi, F., Saenz, K., and Baljko, M. Echoes of Diversity: Using Making for Empowerment and Learning. MX Design Conference, Mexico City, Mexico, October 2015.
23. Hamidi, F., Mbullo, P., Hynes, M., Baljko, M., and McGrath, S., Digital Assistive Technology and Assistive Technology in Kenya: Potentials. Medicine and Marginality Workshop, Kisumu, Kenya, December 2014.
24. Hamidi, F., and Baljko, M. Empowerment Through Interaction: A Living Media Interface for Children with Disabilities. Paper presented at the 2014 Interaction Design for Children with Disabilities Workshop (IDCD'14), June 2014.
25. Hamidi, F. and Baljko, M. Automatic Speech Recognition: A Shifted Role in Early Speech Intervention. Proceedings of the 4th Workshop on Speech and Language Processing for Assistive Technologies (SPLAT'13), 55-61, 2013.

26. Hamidi, F., and Baljko, M. A Reverse-Huffman Algorithm for Text Entry Interface Evaluation. Paper presented at the CHI 2012 Workshop on Designing and Evaluating Text Entry Methods. Austin, Texas, May 2012.
27. Hamidi, F., Spalteholz, L., and Livingston, N. Web-Speak: A Customizable Speech-Based Web Navigation Interface for People with Disabilities. Paper presented at the 23rd Annual International Technology & Persons with Disabilities Conference (CSUN'08), Northridge, California, March 2008.

○ **Technical Reports**

1. Gomez-Gonzalez, I. M., Castro-Garcia, J. A., Merino-Monge, M., Sanchez-Anton, G., Hamidi, F., Mendoza-Sagrera, A., Molina-Cantero, A. J. Emotional State Measurement Trial (EMOPROEXE): A Protocol for Promoting Exercise in Adult and Children with Cerebral Palsy. Preprints 2024, 2024011607. https://doi.org/10.20944/preprints202401.1607.v1
2. Matychak, X., Hamidi, F., Coy, A. An Approach to Digital Equity that Leverages Social and Technical Capital: Recommendations for Community Anchor Institutions. White Paper by Digital Harbor Foundation, Baltimore, MD, June 2023.
3. Future of Privacy Forum. NSF Convergence Accelerator - Privacy and Pandemics: Responsible Use of Data During Times of Crisis, October 2020.
4. Hamidi, F. and Dorji, T. C. E-Work in Bhutan: Redefining Employment. Technical Report, Thimphu, Bhutan, May 2013.
5. Hamidi, F. Digital Tangible Games for Speech Intervention. Technical Report (CSE-2012-02), York University, Toronto, March 2012.

Editorial Reviewed Works

1. Hamidi, F., Scheuerman, M. and Branham, S. Gender is Personal – Not Computational. The Conversation (May 2018). https://theconversation.com/gender-is-personal-not-computational-90798 (>11k reads)
2. Hamidi, F., Scheuerman, M. and Branham, S. Can Gender Be Computed? Scientific American (May 2018). https://www.scientificamerican.com/article/can-gender-be-computed/
3. Hamidi, F. and Baljko, M. Inviting Silence: An Ambient Digital Living Media System in the Home. interactions 25, 2 (Feb. 2018), 82-84.

Online Publications

1. Hamidi, F., Branham, S. The Diversity and Inclusion Lunch at the 2019 ACM C&C/DIS Conferences. August 2019. https://medium.com/@fhamidi/the-diversity-and-inclusion-lunch-at-the-2019-acm-c-c-dis-conferences-318f0ccc9f37
2. Scheuerman, M. Spiel, K., Haimson, O., Hamidi, F., Branham, S. HCI Guidelines for Gender Equity and Inclusivity. May 2019. https://www.morgan-klaus.com/gender-guidelines.html
3. Hamidi, F. CanSpeak: Co-Designing a Customizable Speech Interface for Computer Access. Enables.me, December 2015. http://enables.me/canspeak-codesigning-a-customizable-speech-interface/

Presentations

Invited Keynotes

- Co-designing Accessible Futures: Inclusive Assistive Technology Design Approaches. Invited keynote at the Universal Design Summit, Starkloff Disability Institute, Virtual, September 2021.
- Participatory Design for Emerging Technologies. Invited keynote at the First Workshop on Multi-Cultural Human-Robot Interaction, AfriCHI'18, Windhoek, Namibia, December 2018.

Invited Talks

- Hamidi, F. Climate Change and Migration. Talk at the University of Washington (remote), Seattle, WA, January 2024.
- Hamidi, F. Investigating Transdisciplinary Approaches for Community-engagement. Talk at Georgia Tech, Atlanta, GA, November 2023.
- Hamidi, F. Community-based Participatory Design Investigating Emerging Technologies. Talk at HCIL, University of Maryland, College Park, MD, November 2023.
- Hamidi, F. Interactive Systems Research Center (ISRC). Talk at Design Forge 2023, Elon University, Elon, NC, March 2023.
- Hamidi, F. Interactive Systems Research Center (ISRC). Talk at IS Research Spotlight Day, November 2022.
- Hamidi, F. "I'm Ok Because I'm Alive": Understanding Socio-cultural Accessibility Barriers for Refugees with Disabilities in the US. Online partner talk at AccessComputing, October 2022.
- Hamidi, F. Supporting Empowerment and Mitigating Harm through Participatory Approaches to Assistive Technology Design. Invited talk at the University of Aalborg, Denmark, May 2022.
- Hamidi, F. Towards Participatory Living Media Interfaces. Invited talk (ABRA Soft Robotics and Sustainability Workshop) at the University of Aalborg, Denmark, May 2022.
- Hamidi, F. Participatory Approaches for Inclusivity and Equity in HCI. Invited talk at the University of California, Merced, September 2021.
- Hamidi, F. Towards Participatory Living Media Interfaces. Artificial Biology, Robotics and Art – University of Aalborg, Denmark, June 2021.
- Coy, A., Bouhmad, A., Hamidi, F. Responding to COVID-19 with Community Internet. 2021 NSF Smart & Connected Communities PI Meeting Virtual Conference (S&CC'21). Virtual talk, April 2021.
- Hamidi, F. Hiding in Plain Sight: Art as Resilience. Invited talk at the University of Toronto, February 2021.
- Hamidi, F. Responding to COVID-19 with Community Internet. COVID Information Commons Research Webinar, December 2020.
- Hamidi, F. Community-based Participatory Design: Creating, learning and innovating together. Seminar at Information Systems Department, UMBC, December 2020.
- Hamidi, F. Rafigh: A Living Media Interface. Lightening Talk at BioSummit 4.0, October 2020.

- Hamidi, F. Designing Participatory Futures. Online partner talk at AccessComputing, July 2020.
- Hamidi, F. Community-Engaged Innovation: Co-Designing Emerging Technologies with Diverse Stakeholders. Invited Webinar at the International Federation of Engineering Education Societies (IFEES), June 2020.
- Hamidi, F. Designing Participatory Futures. Invited talk at the Currents speaker series, Dresher Center, UMBC, Baltimore, MD, USA, April 2020.
- Hamidi, F. Participatory Design of Emerging Technologies. Invited talk at University of Michigan, Ann Arbor, Michigan, USA, December 2019.
- Hamidi, F. Participatory Design of Emerging Technologies. Invited talk at New York University (NYU), New York, New York, USA, July 2019.
- Hamidi, F. Participatory Design of DIY Digital Assistive Technology in Western Kenya. Invited talk at Northwestern University, Chicago, USA, February 2019.
- Hamidi, F. Participatory Design for Inclusion and Empowerment. Invited talk at Virginia Tech, Blacksburg, USA, November 2018.
- Hamidi, F. Participatory Design for Inclusion and Empowerment. Invited talk at James Madison University, Harrisonburg, USA, November 2018.
- Hamidi, F. Incorporating Stakeholder Perspectives When Designing Digital Systems. Invited talk at the University of Toronto, Toronto, Canada, August 2018.
- Hamidi, F. Universal Making: Do-it-Yourself Assistive Technology. Invited Ignite Talk at the 2018 Nation of Makers (NOMCON) Conference, Santa Fe, USA, June 2018.
- Hamidi, F. Transcending Invisible Lines. Invited talk at the 2018 Labs @ Light City, Baltimore, USA, April 2018.
- Hamidi, F. Motivating User Agency through Caring and Acting. Invited talk at the University of Maryland, College Park, Baltimore, USA, October 2017.
- Hamidi, F. Of Mushrooms and Alebrijes: Using Digital Media for Engagement and Participation. Invited talk at the University of Maryland, Baltimore County, Baltimore, USA, August 2016.
- Hamidi, F. Digital Design for Social Good. Invited talk at the Universidad Iberoamericana Ciudad de México, Mexico City, Mexico, October 2015.
- Hamidi, F., Mbullo, P., Baljko, McGrath, S., M., and Hynes, M. Community University Partnerships to Build Participatory Digital Assistive Technology Solutions in Kenya. Society for the Advancement of Science in Africa Conference, Toronto, Canada, August 2015.
- Hamidi, F. Design Diversity: Co-Design for Inclusion and Empowerment. Subtle Technologies, Toronto, Canada, May 2014.
- Hamidi, F. Technology and Happiness. Invited talk at the Universidad Iberoamericana Ciudad de México, Mexico City, Mexico, November 2013.
- Baljko, M. and Hamidi, F. Knowledge Co-Creation and Assistive Technology. Presentation at the York Symposium on the Scholarship of Engagement, York University, Toronto, October 2013.
- Hamidi, F. Technology and Happiness. Invited talk at Electronic Technology Department, University of Seville, Seville, Spain, August 2013.
- Hamidi, F. Technology and Happiness. Invited talk at Bhutan Media Lab, Thimphu, Bhutan, May 2013.
- Hamidi, F. Technology and Happiness. Invited talk at Royal Thimphu College, May 2013, Thimphu, Bhutan.
- Hamidi, F. Technology for Empowerment and Inclusion. Invited talk at the University of Siegen. July 2012, Siegen, Germany.

- Hamidi, F., and Amiri, S. Digital Activism: Technology, Empowerment and Awareness. Invited talk at Beit Zatoun, January 2012, Toronto, Ontario.
- Hamidi, F. Synchrum: A Collaborative Game. Demo-talk at Maker Kids Toronto, November 2012, Toronto, Ontario.

Invited Panels

- Baltimore Community Efforts Toward Sociotechnical Justice, Northeast Digital Equity Summit, Virtual, September 2023
- LSAMP Summer Research Fellowship Professional Development Seminar: Exploring Different Career Pathways in STEM – Faculty, Virtual, July 2023
- Making with Purpose Panel, Making and Makerspaces in Electrical and Computer Engineering Education Workshop, ECEDHA Conference, New Orleans, LA, March 2022
- UMBC Information Systems NSF CAREER Awardees' Panel, Virtual, February 2022
- BioSummit 5.0: Constructing Community Bio: Diverse Perspectives on Community Building for Teaching and Learning, Virtual, November 2021
- UMBC Center for Innovation, Research, and Creativity in the Arts presents Tahir Hemphill, Virtual, November 2021
- NSF AISL PI meeting: Challenges and Opportunities in working WITH vs. FOR communities and audiences, Virtual, October 2021
- NSF S&CC PI meeting: Responding to the COVID-19 Pandemic – S&CC RAPID Awards, Virtual, October 2021
- UMBC Pandemic Preparedness Research in Information Systems, Virtual, November 2020
- UMBC New Faculty Welcome Panel, Virtual, August 2020

Symposia (refereed)

- Infinite Transformations: Multimedia Explorations of Embodied Persian Poetry, International Education Week, UMBC, November 2022
- Interdisciplinary Research Panel, UMBC IS Research Spotlight Day, November 2022
- UMBC FDC Revitalizing Class Discussion Panel (led to creation of Faculty-to-Faculty tipsheet), Virtual, September 2022
- UMBC Exploring Your Options: What does Research Look Like in COEIT? Virtual, August 2022
- Computer Research Association (CRA) Career Mentoring Workshop, Washington, DC, February 2022
- Sound Studies Symposium, UMBC, April 2021
- Consortium for the Science of Sociotechnical Systems Research (CSST) Summer Institute Fellow, New Brunswick, NJ, June 2019
- Future Innovators Summit, Ars Electronica 2017, Linz, Austria, September 2017
- Early Career Development Symposium, International Conference on Human Factors in Computing Systems (CHI'17), Denver, CO, May 2017
- AccessEngineering Capacity Building Institute (CBI), Seattle, WA, April 2017

Media Activities

- YFile. 2024. Creating accessibility through both research and training. https://yfile.news.yorku.ca/2024/02/22/creating-accessibility-through-both-research-and-training/
- UMBC Magazine. 2023. Found in Translation. https://umbc.edu/stories/researchers-artists-open-to-interpretation/

- UMBC Magazine. 2023. Mapping a Movement. https://umbc.edu/stories/researchers-artists-open-to-interpretation/
- Hyperallergic. 2023. Hip Hop and the Machine. https://hyperallergic.com/806083/hip-hop-and-the-machine-rap-reaserch-lab-tahir-hemphill/
- Baltimore Fishbowl. 2023. BmoreArt's Picks: February 21 – February 27. https://baltimorefishbowl.com/stories/bmorearts-picks-february-21-27/
- Baltimore Fishbowl. 2023. BmoreArt's Picks: January 31 – February 6. https://baltimorefishbowl.com/stories/bmorearts-picks-january-31-february-6/
- The Rolla Daily News. 2021. Starkloff Disability Institute to host 7th Universal Design Summit. https://www.therolladailynews.com/story/news/2021/08/17/starkloff-disability-institute-host-7th-universal-design-summit/8172194002/
- UMBC News. 2021. UMBC celebrates 25th Undergraduate Research and Creative Achievement Day with an expanded global audience. https://news.umbc.edu/umbc-celebrates-the-25th-undergraduate-research-and-creative-achievement-day-with-an-expanded-global-audience/
- UMBC News. 2020. UMBC's newest computing grads, from bachelor's to Ph.D., share stories of connection, support, opportunity. https://news.umbc.edu/umbcs-newest-computing-grads-from-bachelors-to-ph-d-share-stories-of-connection-support-opportunity/
- Technical.ly. 2020. 'I went from sad to happy': Project Waves connected this Baltimore resident to community-based internet. https://technical.ly/baltimore/2020/12/17/project-waves-resident/
- Technical.ly. 2020. Project Waves will provide internet to 250 Baltimore households in 2021. https://technical.ly/baltimore/2020/12/02/project-waves-nsf-grant/
- South Pittsburgh Reporter. 2020. Pittsburgh joins Baltimore to address digital divide. https://www.sopghreporter.com/story/2020/11/11/news/pittsburgh-joins-baltimore-to-address-digital-divide/20976.html
- Technical.ly. 2020. Digital Harbor Foundation, UMBC win $1.5M grant to grow youth tech programming in Baltimore, Pittsburgh rec centers. https://technical.ly/baltimore/2020/11/05/rec-tech-digital-harbor-foundation-pittsburgh/
- UMBC News. 2020. News Rankings Honor UMBC Strengths in Teaching, Innovation, and Inclusion. https://news.umbc.edu/bestcolleges2021/
- WYPR On the Record (Radio Interview). Surfing the Net with Project Waves. 2020. https://www.wypr.org/post/surfing-net-project-waves
- UMBC News. UMBC's Foad Hamidi receives NSF RAPID grant to expand free, secure internet access in Baltimore during COVID-19 and beyond. 2020. https://news.umbc.edu/umbcs-foad-hamidi-receives-nsf-rapid-grant-to-expand-free-secure-internet-access-in-baltimore-during-covid-19-and-beyond/
- UMBC News. Wearable sensors and infrared cameras: Introducing UMBC's User Studies Lab. 2020. https://news.umbc.edu/wearable-sensors-and-infrared-cameras-introducing-umbcs-user-studies-lab/
- Anderton, K. DIY assistive technology prototypes can help people with disabilities to communicate. 2020. https://www.news-medical.net/news/20200211/DIY-assistive-technology-prototypes-can-help-people-with-disabilities-to-communicate.aspx
- TechXplore. DIY tools TalkBox and SenseBox help people with disabilities to communicate. 2020. https://www.news-medical.net/news/20200211/DIY-

assistive-technology-prototypes-can-help-people-with-disabilities-to-communicate.aspx
- Diário da Saúde. Tecnologias assistivas do tipo Faça Você Mesmo. 2020. https://www.diariodasaude.com.br/news.php?article=tecnologias-assistivas-faca-voce-mesmo&id=14010
- Zepp, M. DIY tools TalkBox and SenseBox help people with disabilities to communicate. 2020. https://www.eurekalert.org/pub_releases/2020-02/uomb-dtt021120.php
- Wenger, Y. Movement aims to make Baltimore the 'city that codes' — and it's starting young. 2018. The Baltimore Sun (Online). https://www.baltimoresun.com/education/bs-md-baltimore-digital-coders-20181026-story.html
- Haimson, O. Gender Inclusivity at SIGCHI. 2018. https://medium.com/@haimson/gender-inclusivity-at-sigchi-b1cbee213faf
- ACM CSCW Blog. Safe Spaces and Safe Places: Unpacking Technology-Mediated Experiences of Safety and Harm with Transgender People. 2018. https://link.medium.com/qTEkoLmmGR
- UMBC Magazine. Ideas Illuminated at 2018 Light City. 2018. https://magazine.umbc.edu/ideas-illuminated-at-2018-light-city/
- Radio Österreich 1 (Ö1). Radiokolleg - Naturvergessenheit (Audio Interview), 2018. http://oe1.orf.at/programm/20180215/506630
- Ars Electronica. Future Innovators Summit (Video), 2018. https://www.aec.at/ai/en/fis/ & https://www.youtube.com/watch?v=NYE5gbkQtdc
- La Informacion. Researchers from the University of Seville develop new technologies that improve the quality of life for the disabled (in Spanish), 2016
- http://politahumming.blogspot.mx/2015/10/foad-hamidi-digital-design-for-social.html
- Polita. Foad Hamidi, Digital Design for Social Good @ IBERO, 2015. http://shr.gs/wkQ5ejF
- Lassonde School of Engineering news. Lassonde Talkbox team wins top prize at Toronto Maker Faire. 2014. http://eecs.lassonde.yorku.ca/news/lassonde-talkbox-team-wins-top-prize-at-toronto-maker-faire/
- Lassonde School of Engineering news. Lassonde Students Engineer Magic on a Global Stage. 2014. http://lassonde.yorku.ca/articles/lassonde-students-engineer-magic-global-stage
- less stuff:: more design. Design & Emotion. 2014. http://lessstuffmoredesign.blogspot.com/
- Chester, K. A Bhutan tech primer: early signs of startups and e-commerce. 2013. https://www.techinasia.com/bhutan-tech-startups-ecommerce-primer
- Dorji, S. Talk by Mr. Foad Hamidi, 2013. http://sonamdorji505.blogspot.com/2013/05/talk-by-mr-foad-hamidi_10.html
- Tollefsen, M. Sound Control of the PC. 2011. http://medialt.no/news/en-US/sound-control-of-the-pc-summary-from-the-pilot-project/732.aspx

Creative Achievements

Juried Works

○ **Exhibitions**

- Raaz, with Linda Dusman, Tagide DeCarvalho, Alan Wonneberger, Rian Ciela Hammond, Inspired by Words by Loosenart, Millepiani Exhibition Space, Rome, Italy, October 4th- 12th, 2021.
- Rafigh: An Edible Living Media Installation. Ludwig-Maximilians-Universität München (LMU), Munich, Germany, February 17th - 19th, 2014.
- Mountain Water. Entry in the International Centre for Integrated Mountain Development photo contest, 2013.

Non-Juried Works

○ **Exhibitions**

- Infinite Transformations with Linda Dusman, Carol Hess, Alan Wonneberger, Tagide DeCarvalho, Lee Boot, Ryan Zuber, Baltimore Dance Project, UMBC, MD, February 9th-10th, 2024
- Infinite Transformations with Linda Dusman, Alan Wonneberger, Tagide DeCarvalho, Lee Boot, Ryan Zuber, Black Box, UMBC, MD, May 24th, 2023
- Sublitezas collaborative art group exhibit, Cultivamos Cultura, São Luis, Portugal, August 13th, 2022.
- Raaz with Linda Dusman, Alan Wonneberger, Tagide DeCarvalho, Interactive Systems Research Center, UMBC, MD, March 3rd-4th, 2022.
- Raaz with Linda Dusman, Alan Wonneberger, Tagide DeCarvalho, Livewire11: Rewired New Music Festival, UMBC, MD, October 22nd-23rd, 2021.
- Raaz: A Multimedia Bioart Installation, with Linda Dusman, Alan Wonneberger, Tagide DeCarvalho, Baltimore Underground Science Space (BUGSS), Baltimore City, MD, October 17th, 2021.
- Liberation: An Interactive Video Installation, with Alexander Moakler, Assaf Gadot and Sahand Amiri. Digital Media Showcase, York University, Toronto, April 3rd, 2012.

TEACHING AND STUDENT ADVISING

UMBC Graduate Teaching

- 2023 Fall, Special Topics in HCI – Participatory Design and Community Engagement (IS698) – new course preparation
- 2022 Fall, Human-Computer Interaction (HCC760)
- 2021 Fall, Human-Computer Interaction (HCC760)
- 2021 Spring, User Interfaces Prototyping and Development (HCC613)
- 2020 Fall, Human-Computer Interaction (HCC760)
- 2020 Spring, User Interfaces Prototyping and Development (HCC613)
- 2019 Fall, Human-Computer Interaction (HCC760)
- 2019 Spring, User Interfaces Prototyping and Development (HCC613)

UMBC Undergraduate Teaching

- 2024 Spring, Fundamentals of Human-Computer Interaction (IS303)
- 2022 Fall, Fundamentals of Human-Computer Interaction (IS303)
- 2021 Fall, Fundamentals of Human-Computer Interaction (IS303), co-instructor

UMBC Independent Studies

- 2024 Fall, Independent Study in Human-Centered Computing (HCC801)
- 2024 Spring, Human-Centered Computing Seminar (HCC810)
- 2024 Spring, Independent Study in Human-Centered Computing (HCC801)
- 2023 Spring, Independent Study in Human-Centered Computing (HCC801)
- 2023 Spring, Independent Study in Human-Centered Computing (HCC700)
- 2023 Fall, Human-Centered Computing Seminar (HCC810)
- 2023 Fall, Independent Study in Human-Centered Computing (HCC700)
- 2022 Fall, Human-Centered Computing Seminar (HCC810)
- 2022 Fall, Independent Study in Human-Centered Computing (HCC700)
- 2022 Spring, Independent Study in Human-Centered Computing (HCC801)
- 2021 Spring, Independent Study in Information Systems (IS400)
- 2021 Fall, Human-Centered Computing Seminar (HCC810)
- 2021 Fall, Independent Study in Human-Centered Computing (HCC801)
- 2021 Spring, Independent Study in Human-Centered Computing (HCC700)
- 2021 Spring, Independent Study in Human-Centered Computing (HCC801)
- 2020 Spring, Independent Study in Information Systems (IS400)
- 2020 Spring, Independent Study in Human-Centered Computing (HCC700)
- 2020 Spring, Human-Centered Computing Seminar (HCC810)
- 2020 Fall, Human-Centered Computing Seminar (HCC810)
- 2020 Fall, Independent Study in Human-Centered Computing (HCC700)
- 2019 Spring, Independent Study in Information Systems (IS400)
- 2019 Fall, Human-Centered Computing Seminar (HCC810)
- 2019 Fall, Independent Study in Human-Centered Computing (HCC700)
- 2019 Spring, Human-Centered Computing Seminar (HCC810)
- 2018 Fall, Human-Centered Computing Seminar (HCC810)
- 2018 Spring, Human-Centered Computing Seminar (HCC810)
- 2018 Spring, Independent Study in Human-Centered Computing (HCC700)
- 2017 Fall, Independent Study in Information Systems (IS400)
- 2017 Spring, Independent Study in Information Systems (IS400)
- 2017 Fall, Human-Centered Computing Seminar (HCC810)
- 2017 Fall, Independent Study in Human-Centered Computing (HCC700)
- 2017 Spring, Independent Study in Human-Centered Computing (HCC700)
- 2017 Spring, Human-Centered Computing Seminar (HCC810)

Non-UMBC Undergraduate Teaching

- 2014 Summer, Introduction to the Theory of Computation (CSE2001). TA, York University
- 2014 Winter, Building Interactive Systems (CSE1720). TA, York University
- 2013 Winter, Building Interactive Systems (CSE1720). TA, York University
- 2013 Fall, User Interfaces (CSE3461). TA, York University
- 2013 Fall, Software Design (CSE3311). TA, York University
- 2013 Winter, Design and Analysis of Algorithms (CSE3101). TA, York University
- 2012 Fall, User Interfaces (CSE3461). TA, York University
- 2012 Fall, Design and Analysis of Algorithms (CSE3101). TA, York University
- 2012 Summer, Design and Analysis of Algorithms (CSE3101). TA, York University
- 2012 Winter, Hypermedia and Multimedia Technology (CSE4461). Instructor, York University

Guest Lectures

- Understanding Socio-cultural Accessibility Barriers for People with Disabilities in Kenya (HCC729) – Spring 2023
- Community engagement in Baltimore City – UMBC Fika internal talk – Spring 2023
- Understanding Socio-cultural Accessibility Barriers for Refugees with Disabilities in the US (IS 698/800) – Spring 2023
- Community-based Participatory Design (Grand Challenges Scholars, UMBC) – Spring 2022
- Inclusive Making (EECS397, 497) – Spring 2019
- Fundamentals of Human-Computer Interaction (IS303) – Spring 2018
- Developing Interfaces for Rehabilitation (HCC742) – Spring 2018
- Fundamentals of Human-Centered Computing (HCC629) – Fall 2017
- Developing Interfaces for Rehabilitation (HCC742) – Fall 2017
- Fundamentals of Human-Computer Interaction (IS303) – Spring 2017
- User Interface Prototyping and Development (HCC613) – Spring 2017

Academic Workshops

- Hamidi, F., Hemphill, T., Higgins, E. Irington, J. Rap Research Lab: Maximum Distance, Minimum Displacement - Robot Arm Demonstration. Collaborative workshop at DARE Lab, Baltimore, February 2023.
- Hynie, M., Korntheuer, A., Hamidi, F. Collaborative approaches to resettlement challenges for refugees living with disabilities. Transdisciplinary World Café with the Now! Advocacy Group Crossroads/Handicap International. Workshop at Metropolis Conference, Berlin, September 2022.
- Hamidi, F. Community-based Participatory Design. Online workshop at Arizona State University (ASU), February 2021.
- Hamidi, F. Pandemic Preparedness Research in Information Systems Departmental Research Showcase, UMBC, November 2020.
- Hamidi, F., Stamato, L., Lopez, K., Wright, R., Laguna, D. Impact Workshop - Community-Engaged Research and Responding to COVID-19 with Community Mesh Internet. Center for Women in Technology (CWIT), UMBC, November 2020.
- Whitmer, B., Schmidt, R., Young, T., Hamidi, F., Rezai, P., Ardeshiri, R. and Leung, J. Lassonde Technology Faire – 3D Printing Workshops. Youth workshops organized by CIVDDD - ICTC, York University, Toronto, April 2014.
- Hamidi, F. and Whitmer, B. Digital Design. Youth workshop organized by CIVDDD - ICTC, York University, Toronto, Canada, November 2013.
- Hamidi, F., and Baljko, M. Assistive Technology Research - Community Partnerships. Workshop at the 13th International Conference on Computers Helping People with Special Needs (ICCHP'12), Linz, Austria, July 2012.

Community-Engaged Training Workshops

- Hamidi, F., Mbullo, P., Hynie, M., McGrath, S., and Baljko, M. Fabrication-Lab-in-a-Kit (FLiK) Workshop. Kisumu, Kenya, June 2019.
- Hamidi, F., Hynie, M., McGrath, S., Mbullo, P., Onyango, D., Oracha, P., and Baljko, M. DIY-AT Community Building Workshop Facilitator Training. Kisumu, Kenya, June 2017.
- Baljko, M., Feraday, R., Hamidi, F., Kunic, T., Haworth, B., and Boeva, Y. TalkMake: Making your own TalkBox Workshop. Toronto Mini Maker Faire, Toronto, November 2014.

- Mbullo, P., Hynes, M., McGrath, S., and Hamidi, F. Partners in Transformation: Stakeholders Consultative Forum. Kisumu, Kenya, June 2014.
- Hamidi, F., Saenz, K. and Saenz, M. Collaborative Digital Design Workshop. Workshop in collaboration with Kopalli Arte Publico, Oaxaca, Mexico, June 2014.
- Hamidi, F., Saenz, K. and Saenz, M. Collaborative Digital Design Workshop. Workshop in collaboration with Kopalli Arte Publico, Oaxaca, Mexico, November 2013.
- Hamidi, F. and Baljko, M. Collaborative MakeShop Sessions: Critical Maker Workshops. York University, Toronto, September-December 2013.
- Hamidi, F. Effective Communication. Workshop at Bhutan Innovation & Technology Centre, Thimphu, Bhutan, April 2013.

Postdoctoral Fellows Mentoring

Tahir Hemphill, UMBC, 2021 (with Lee Boot, Lisa Moren, Linda Dusman)
Nora McDonald, UMBC, 2020 (with Helena Mentis)

Ph.D. Student Dissertation Research Advising (Chair)

- Marie Sakowciz, Human-centered Computing, Dissertation Examination Committee Chair, UMBC, expected completion 2027
- Kirk Crawford, Human-centered Computing, Dissertation Examination Committee Chair, UMBC, expected completion 2026
- Hasan Mahmud Prottoy, Human-centered Computing, Dissertation Examination Committee Chair, UMBC, expected completion 2025
- Erin Higgins, Human-centered Computing, Dissertation Examination Committee Chair, UMBC, expected completion 2025
- Lydia Stamato, Human-centered Computing, Dissertation Examination Committee Chair, UMBC, expected completion 2024
- William B. Easley, Human-centered Computing, Dissertation Examination Committee co-Chair, UMBC, 2020 (co-advised with Dr. Helena Mentis) (Completed)

Ph.D. Students Dissertation Committee Member

- Nisa Asgarali-Hoffman, Human-centered Computing, External Dissertation Examination Committee Member, University of Maryland, College Park, 2024-
- Akiri Surely, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2023-
- Evelyn Kempe, Information Systems, Dissertation Examination Committee Member, UMBC, 2022-
- Azin Semsar, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2020-2021 (Completed)
- Gabrielle Salib, Human-centered Computing, External Dissertation Examination Committee Member, Drexel University, 2020-2022 (Completed)
- Iman Alshathri, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2020-2023 (Completed)
- Hirak Ray, Human-centered Computing, UMBC, 2020-2022 (Completed)
- Adegboyega Akinsiku, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2019-2022 (Completed)
- Flynn Wolf, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2021 (Completed)
- Ali Abdolrahmani, Human-centered Computing, Dissertation Examination Committee Member, UMBC, 2021 (Completed)

Master's Students Thesis Committee Member

- Ghazal Mojtahedi, Intermedia and Digital Arts, MFA Examination Committee Member, UMBC, 2024-
- Anirudh Nagraj, Human-centered Computing, Thesis Examination Committee Member, UMBC, 2021 (Completed)
- Lydia Stamato, Human-centered Computing, Thesis Examination Committee Member UMBC, 2020 (Completed)
- Kellie Gable, Human-centered Computing, Thesis Examination Committee co-Chair, UMBC, 2018 (Completed)
- Morgan Scheuerman, Human-centered Computing, Thesis Examination Committee co-Chair, UMBC, 2017 (Completed)

Master's Students Research Advising

- Yetunde Okueso, Human-centered Computing, Faculty Research Advisor, UMBC, 2023
- Jennifer Posada, Human-centered Computing, Faculty Research Advisor, UMBC, 2023
- Serena Gyi, Human-centered Computing, Faculty Research Advisor, UMBC, 2022
- Savani Sachin Shrorti, Human-centered Computing, Faculty Research Advisor, UMBC, 2020
- Tsion Kidane, Human-centered Computing, Faculty Research Advisor, UMBC, 2021
- Xinran Zhang, Human-centered Computing, Faculty Research Advisor, UMBC, 2020
- Jason Charney, Human-centered Computing, Faculty Research Advisor, UMBC, 2019
- Sruti Vijaykumar, Human-centered Computing, Faculty Research Advisor, UMBC, 2019
- Amy Freeman, Human-centered Computing, Faculty Research Advisor, UMBC, 2019
- Christopher Wong, Human-centered Computing, Faculty Research Advisor, UMBC, 2017
- Sanjay Kumar, Human-centered Computing, Research Advisor, UMBC, 2017
- Tejas Bhalerao, Human-centered Computing, Research Advisor, UMBC, 2017

Undergraduate Students Research Advising

- Amal Aulakh, Psychology, Faculty Research Advisor, UMBC, 2024
- Thomas Ajala, Mechanical Engineering, Faculty Research Advisor, UMBC, 2023
- Robiniho Valdivia, Psychology, Faculty Research Advisor, UMBC, 2023-
- Jamie Iringan, Mechanical Engineering, Faculty Research Advisor, UMBC, 2023
- Zaria Oliver, Mechanical Engineering, Faculty Research Advisor, UMBC, 2022-2023
- Ousmane Diop, History, Faculty Research Advisor, UMBC, 2022
- Amina El-Ashry, Information Systems, Faculty Research Advisor, UMBC, 2020-
- Jennifer Posada, Information Systems, Faculty Research Advisor, UMBC, 2021-2023
- Susanna Abler, Individualized Study Program, Faculty Research Advisor, UMBC, 2019-2021
- Zulekha Karachiwalla, Computer Engineering, Faculty Research Advisor, UMBC, 2020-2021

- Rushaad Wright, Business Technology Administration, Faculty Research Advisor, UMBC, 2020-2021 (Winner of COEIT Student Leadership Award)
- Karina Brown-Lopez, Information Systems, Faculty Research Advisor, UMBC, 2020-2021 (Winner of COEIT Student Leadership Award)
- Daniel Laguna, Information Systems, Faculty Research Advisor, UMBC, 2020-2021
- Kai Wisner, Mechanical Engineering, Research Advisor, UMBC, 2019-2020
- Fayokemi Ojo, Computer Science and Engineering, Research Advisor, UMBC, 2018-2019
- Mikhail Dorfman, Mathematics, Research Advisor, UMBC, 2018
- Christian Ortega, Computer Engineering, Research Advisor, Texas A&M University, 2017
- Megha Kottapalli, Computer Science and Engineering, Research Advisor, UMBC, 2017
- Loryn Chen, Information Systems, Research Advisor, UMBC, 2017
- Li Yin, Lassonde School of Engineering, Research Advisor, York University, 2016

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Department

- 2024, Director, Interactive Systems Research Center (ISRC)
- 2024, UMBC representative, AccessComputing
- 2023, Director, Interactive Systems Research Center (ISRC)
- 2023, session chair, Undergraduate Research Outreach and Opportunities
- 2023, Committee member, Graduate HCC Committee
- 2023, Committee member, Research Committee
- 2023, UMBC representative, AccessComputing
- 2022, Director, Interactive Systems Research Center (ISRC)
- 2022, Committee member, Graduate HCC Committee
- 2022, Committee member, Merit Review Committee
- 2022, Committee member, Research Committee
- 2022, UMBC representative, AccessComputing
- 2021, Committee member, Research Committee
- 2021, Judge, Graduate Research Poster Day Judge
- 2021 Committee member, Junior Faculty Launch Committee – Dr. Yaxing Yao
- 2021, UMBC representative, AccessComputing
- 2021, Faculty Advisor for Events, Interactive Systems Research Center (ISRC)
- 2020, Faculty Advisor for Events, Interactive Systems Research Center (ISRC)
- 2020, Committee member, Faculty Search Committee
- 2020, Faculty lead, Pandemic Preparedness Research in Information Systems
- 2020, PhD Student Open Seminar Faculty Lead
- 2020, UMBC representative, AccessComputing
- 2019, UMBC representative, AccessComputing
- 2019, PhD Student Open Seminar Faculty Lead
- 2019, Faculty Advisor for Events, Interactive Systems Research Center (ISRC)

- 2018, Faculty Advisor for Events, Interactive Systems Research Center (ISRC)
- 2017, Faculty Advisor for Events, Interactive Systems Research Center (ISRC)

Service to the University and College

- 2024, COEIT Research Day, Session Chair
- 2024, CWIT Faculty Cyber Scholar Candidates Interviewer
- 2024, Faculty Senator
- 2023, UMBC Imaging Research Center (IRC), Reviewer for the Faculty Research Fellowship
- 2023, Faculty Senator
- 2023, UMBC Public Humanities Advisory Committee
- 2022, Faculty Senator
- 2022, UMBC Public Humanities Advisory Committee
- 2022, Committee Member, Fellows for Faculty Diversity Program Nomination Committee

Service to the Research Community

- 2024, Doctoral Colloquium Mentor, Conference on Computers and Accessibility (ASSETS)
- 2024, Doctoral Colloquium Mentor, Conference on Fairness, Accountability, and Transparency (FAccT)
- 2024, Technology First Task Force Member, Maryland Department of Health
- 2024, Reviewer, Biotechnology Design Journal
- 2024, Program Committee Member, ACM Conference on Computers and Accessibility (ASSETS)
- 2024, Reviewer, ACM Designing Interactive Systems (DIS)
- 2024, Advisory Board Member, NSF Nurturant STEM, PIs: Andrew Coy, Maria Olivares
- 2023, Technology First Task Force Member, Maryland Department of Health
- 2023, Advisory Board Member, NSF Nurturant STEM, PIs: Andrew Coy, Maria Olivares
- 2023, Reviewer, American Society of Engineering Education (ASEE)
- 2023, Associate Chair, ACM Designing Interactive Systems (DIS)
- 2022, Technology First Task Force Member, Maryland Department of Health
- 2022, Subject Matter Expert, UMD's Grand Challenges Program
- 2022, Advisory Board Member, NSF Nurturant STEM, PIs: Andrew Coy, Maria Olivares
- 2022, Session Chair, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2022, Program Committee Member, ACM Conference on Computers and Accessibility (ASSETS)
- 2022, Associate Chair, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2022, Reviewer, Transactions on Computer-Human Interaction (TOCHI)
- 2022, Reviewer, Computer Supported Cooperative Work (CSCW) Journal
- 2021, Technology First Task Force Member, Maryland Department of Health
- 2021, Reviewer, International Journal of Child-Computer Interaction (IJCCI)
- 2021, Reviewer, The Australian Conference on Human-Computer Interaction (Oz'CHI)
- 2021, Associate Chair, ACM Annual Conference on Human Factors in Computing Systems (CHI)

- 2021, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI), Special Recognition for Outstanding Review
- 2021, Best Artifact Competition Co-Chair, ACM Conference on Computers and Accessibility (ASSETS)
- 2021, Program Committee Member, ACM Graphics (GI)
- 2020, Session Chair, IEEE Frontiers in Education (FIE)
- 2020, Session Chair, ASEE Annual Conference & Exposition
- 2020, Associate Chair, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2020, Program Committee Member, ACM Student Research Competition (SRC)
- 2020, Program Committee Member, ACM Conference on Computers and Accessibility (ASSETS)
- 2020, Reviewer, IEEE Frontiers in Education (FIE)
- 2020, Reviewer, The International Conference on New Interfaces for Musical Expression (NIME)
- 2020, Reviewer, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
- 2020, Reviewer, ASEE Annual Conference & Exposition
- 2020, Program Quality Assessment Committee Member, Digital Harbor Foundation (DHF)
- 2019, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI), Special Recognition for Outstanding Review
- 2019, Reviewer, ASEE Annual Conference & Exposition
- 2019, Accessibility and Diversity Co-Chair, ACM Conferences on Designing Interactive Systems (DIS'19) and Creativity & Cognition (C&C'19)
- 2019, Member of Organizing Committee, International Cross-Disciplinary Conference on Web Accessibility (Web4All)
- 2019, Student Research Competition Co-Chair, ACM Conference on Computers and Accessibility (ASSETS)
- 2019, Reviewer, The International Conference on New Interfaces for Musical Expression (NIME)
- 2019, Reviewer, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), Special Recognition for Outstanding Review
- 2019, Program Quality Assessment Committee Member, Digital Harbor Foundation (DHF)
- 2018, Student Research Competition Judge, ACM Conference on Computers and Accessibility (ASSETS)
- 2018, Reviewer, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
- 2018, Reviewer, ASEE Annual Conference & Exposition
- 2018, Reviewer, ACM Transactions on Accessible Computing (TACCESS)
- 2018, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2017, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2017, Reviewer, International Journal of Human-Computer Studies
- 2016, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2015, Reviewer, ACM Annual Conference on Human Factors in Computing Systems (CHI)
- 2016, Reviewer, International Journal of Human-Computer Studies

- 2016, Reviewer, Journal of Assistive Technologies
- 2015, Reviewer, IEEE Potentials
- 2014, Reviewer, IEEE Potentials

Service to the Profession

- 2023, Reviewer for a NASA Proposal
- 2022, Reviewer for an NSF Proposal Review Panel
- 2021, Reviewer for an NSF Proposal Review Panel
- 2021, Reviewer for a MITACS Proposal Review
- 2019, Reviewer for an NSF Proposal Review Panel
- 2018, Reviewer for an NSF Proposal Review Panel
- 2017, Reviewer for an NSF Proposal Review Panel

Public Engagements and Demonstrations

- DARE Lab and ISRC Tours, PhD Open House, UMBC, 2024
- ISRC & DARE Lab Tour, Queen Anne's County 8th Grade Student Visit, UMBC, 2024
- ISRC & DARE Lab Tour, CWIT Bites & Bytes Day, UMBC, 2024
- ISRC and DARE Lab Tours, COEIT (150 participants), UMBC, 2024
- ISRC and DARE Lab Tours, COMP101 (6 tours), UMBC, 2023
- ISRC and DARE Lab Tours, IS Welcome Week Reception, UMBC, 2023
- ISRC and DARE Lab Tours, Computing and Engineering Transfer Institute, UMBC, 2023
- ISRC and DARE Lab Tours, Research Experiences for Undergraduates (REUs) in Smart Computing and Communications, UMBC, 2023
- ISRC and DARE Lab Tours (4 Tours), Summer Enrichment Academy, UMBC Institute for Extended Learning, UMBC, 2023
- DARE Lab Tour, STARS Computing Corps, UMBC, 2023
- DARE Lab and ISRC Tours, PhD Open House, UMBC, 2023
- DARE Lab Tour, CWIT Bites & Bytes Day, UMBC, 2023
- DARE Lab Tour, Open World DEIA Georgian Delegation Visit, UMBC, 2023
- Baltimore UnderGround Science Space (BUGSS), Project Presentation, Baltimore, 2022
- DARE Lab Tour, CWIT Bites & Bytes Day, UMBC, 2022
- Baltimore UX Meetup, Baltimore, 2019
- MDTAP TA Talks & Tours, MDTAP, 2019
- PAD Lab tour, CWIT Bites & Bytes Day, UMBC, 2019
- Capitol Hill Maker Faire, Washington DC, 2018
- PAD Lab tour, Creative Coders, UMBC, 2017
- PAD Lab tour, 2nd Annual Career Explorations in Computing, UMBC, 2017
- ISRC table, Gadgets & Gears Day, Maryland Science Center, 2017
- PAD Lab tour, National Center for Women & Information Technology, 2017
- GaMaY Lab presentation, Toronto Mini Maker Faire, Toronto Public Library, 2014

Updated: December 9, 2024

CURRICULUM VITAE

JAMES FOULDS

EDUCATION

Ph.D.	2014	University of California, Irvine, Computer Science
M.S. (First Class Honours)	2008	University of Waikato, Computer Science
B.C.M.S. (First Class Honours)	2006	University of Waikato, Artificial Intelligence

Experience in Higher Education

2023 – present	University of Maryland, Baltimore County, Associate Professor, Information Systems
2017 – 2023	University of Maryland, Baltimore County, Assistant Professor, Information Systems
2015 – 2017	University of California, San Diego, Postdoctoral Scholar, ITA Data Science Fellow
2016 – 2017	University of California, San Diego, Lecturer, Computer Science and Engineering
2014 – 2015	University of California, Santa Cruz, Postdoctoral Scholar, Comp. Sci. and Eng.
2008 – 2014	University of California, Irvine, Research Assistant, Computer Science
2008 – 2008	University of Waikato, Research Assistant, Computer Science
2006 – 2006	University of Waikato, Research Assistant, Computer Science
2005 – 2007	University of Waikato, Teaching Assistant, Computer Science and Philosophy
2003 – 2005	University of Waikato, Research Assistant, Computer Science

Experience in Other than Higher Education

2013 – 2013	Yahoo Labs, Research Intern
2006 – 2007	University of Waikato, Software Engineer on the WEKA data mining system
2006 – 2007	University of Waikato, Software Engineer on a Turing machine teaching tool

Honors Received

2023	Top Reviewer, AISTATS 2023
2022	Top Reviewer, AISTATS 2022
2021	NSF CAREER Award
2020	Top Reviewer, NeurIPS 2020 (awarded free registration)
2019	Top Reviewer, NeurIPS 2019 (awarded free registration)
2016	Best Presentation runner-up, Southern California Machine Learning Symposium
2008	Dean's Fellowship, UC Irvine ICS, $18,000 USD + 1st year tuition fees
2007	Master's Research Scholarship, University of Waikato, $12,000 NZD
2007	SCMS Scholarship , University of Waikato, $3000 NZD
2006	Ramanujan Centenary Prize, University of Waikato School of Computing and Mathematical Sciences, for best overall performance in the BCMS degree
2006	Best Honours Project Award, University of Waikato, Department of C.S.
2006	Prior Society Prize in Philosophy, Runner up, highly commended, U. Waikato
2006	New Zealand Computer Society Level 3 Tertiary Scholarship, $2500 NZD

2006	Honours Study Award, University of Waikato SCMS, $3000 NZD
2005	2nd in New Zealand/10th in Australasia, ACM S. Pacific Programming Contest
2002	Entrance Scholarship, U. Waikato Dept. of C. S., covered 1st year tuition fees

Research Support and/or Fellowships

Awarded Grant Proposals

2024 – 2029 $3,394,663, National Institutes of Health (NIH). PI: Ian Stockwell. CoPIs: **James Foulds**, et al., *The Development, Implementation, and Evaluation of a Social Engagement Support System*

2024 – 2025 $15,000 (in-kind contribution), Cyber Pack Ventures. PI: Shimei Pan. CoPIs: **James Foulds** and Charissa Cheah. *Analyzing User Engagement and Susceptibility to LLM Hallucinations*

2023 – 2024 $45,000.00, Sponsored by Northeastern University, Janeja, Vandana (Principal), Chen, Zhiyuan (Co-Principal), Brown, Michael (Co-Principal), Kleinsmith, Andrea (Co-Principal), **Foulds, James** (Co-Principal), Casas, Augusto (Co-Principal), Joshi, Karuna (Co-Principal), Saulynas, Sidas (Co-Principal), *Pathways to PostBac IS Online Computing Certifications*

2021 – 2025 $567,095, National Science Foundation (NSF), PI: **James Foulds**, *CAREER: Fair Artificial Intelligence for Intelligent Humans: Removing the Barriers to Deployment of Fair AI Technologies*

2019 – 2022 $604,398, National Science Foundation (NSF), PI: Hamed Pirsiavash, CoPIs: Frank Ferraro, Cynthia Matuszek, Naghmeh Karimi, Damian Doyle, Senior Personnel: **James Foulds**, et al., *MRI, Acquisition of a Heterogeneous GPU Cluster to Facilitate Deep Learning Research at UMBC*

2019 – 2022 $297,928, National Science Foundation (NSF), PI: **James Foulds**; coPIs: Shimei Pan, Ian Stockwell, *AI-DCL: Fairness for the Allocation of Healthcare Resources*

2019 – 2019 $50,000, National Science Foundation (NSF) OAC, PI: Shimei Pan; CoPIs: **James Foulds**; Vandana Janeja, *Workshop on Including Ethics in Data Science Pedagogy*

2019 – 2022 $174,869, National Science Foundation (NSF), PI: **James Foulds**, *CRII: RI: A Little Uncertainty is Good for Everyone: Bayesian Models for Fairness, and Fairness for Bayesian Models*

2018 – 2020 $101,402, National Institute of Standards (NIST) MSE 60NANB18D227, PI: **James Foulds**; coPI: Shimei Pan, *Differential Fairness for Artificial Intelligence and Machine Learning Systems: Unbiased Decisions with Biased Data*

Consultant Roles for Grants

2020 – 2022 $2,400,000, National Science Foundation (NSF), PIs: D. W. Rice, R. Richardson, L. Hatley, K.E. Freeman, C. Winston-Proctor, Consultants: **James Foulds** and Shimei Pan, *HBCU-UP Broadening Participation Research Center*

2020 – 2022 $49,511, Maryland Center for Computing Education (MCCE), PIs: P.A. Young, D. Kariuki, Consultant: **James Foulds**, *Exploring Computational Thinking with Preservice Teachers & Teacher Education Instructors*

Ph.D. Students

Graduated Ph.D. Advisees (Primary Advisor)

- Rashidul Islam (Spring 2018 – Spring 2022). Passed final defense 6.16.2022 (chair). Passed proposal exam Spring 2021. Passed comprehensive exam Fall 2019. Thesis title: "Intersectional Fairness in Machine Learning: Measurements, Algorithms, and Applications"
    - *IS Department Student Research Symposium (formerly known as Graduate Student Poster Day) Awards 2022: Overall winner, PhD Student Research Award (completed dissertation proposal category).*

- *IS Department Graduate Student Poster Day Awards 2021: Overall winner, PhD Student Research Award (completed dissertation proposal category).*
- *IS Department Graduate Student Poster Day Awards 2021: 1st place, Poster Competition (completed research category).*

Current Ph.D. Advisees (Primary Advisor)

- Ali Nour (Spring 2024 – present) Independent study Spring 2024
- Aryeh Englander (Summer 2022 – present. Currently on hiatus as of Fall 2023.)
- Alden Dima (Summer 2022 – present) Passed comprehensive exam before joining my lab.
- Kiran Prabhu (Fall 2021 – present) Passed comprehensive exam 10.13.2023
- Mahbub Rahman (Summer 2019 – present) Passed proposal defense 10.1.2022. Passed comprehensive exam Spring 2021.
  - *IS Department Graduate Student Poster Day Awards 2021: 1st-equal, audience choice in the Poster Competition (late breaking research category).*
  - *IS Department Graduate Student Poster Day Awards 2021: Honorable mention, Poster Competition (late breaking research category).*
- Samin Semsar (Fall 2022 – present) Passed comprehensive exam 10.13.2023. Independent study Fall 2022.

Current Ph.D. Co-Advisees

- Pronob Barman (Spring 2023 – present). Primary advisor: Tera Reynolds. Passed proposal defense 5.3.2024
- Fatema Hasan (Spring 2021 – present) Primary advisor: Shimei Pan. Passed proposal defense 3.28.2022

Former Ph.D. Co-Advisees

- Ziqian Zeng (Fall 2019 – Fall 2020) HKUST Ph.D. student who visited Shimei Pan's lab. I was an informal co-mentor, not on committee. Graduated HKUST 2021
- Jack Shan (Spring 2019 – present) Formerly primary advisor (UMBC): Shimei Pan. Now at Temple University. Informal co-mentor, not currently on committee.

Former Ph.D. Advisees

- Masnoon Nafees (Fall 2019 – 2021). Passed comprehensive exam Spring 2021.
- Kamrun Naher Keya (Spring 2018 – Spring 2023. Currently on semi-permanent hiatus) Passed comprehensive exam Fall 2020.
  - *IS Department Graduate Student Poster Day Awards 2021: 1st equal, audience choice in the Poster Competition (completed research category)*

Ph.D. Committee Member

- Sara Khanjani, comprehensive, 10.11.2023, proposal 1.8.2025 *(upcoming, scheduled)*
- Akila Sampath, comprehensive 9.28.2023, proposal 12.4.2024
- Uzma Hasan, comprehensive 10.9.2023, proposal 11.11.2024
- Xiangxiang Kong comprehensive 3.4.2024, comprehensive retake 10.4.2024
- Md Alomgeer Hussein comprehensive 9.23.2024
- Maloy Kumar Devnath, comprehensive 9.29.2023, proposal 8.28.24
- Md Mahmudur Rahman, proposal 8.31.2023, final defense 7.19.2024
- Jumman Hossain, proposal 6.20.2024
- Noshaba Nasir Bhalli, comprehensive 5.29.2024
- Pronob Barman, proposal 5.3.2024
- Tashnim Chowdhury, proposal 7.6.2022, final defense 4.15.2024
- Khondoker Hossain, proposal 9.21.2022, final defense 3.26.2024
- Emam Hossain, comprehensive 3.7.2024
- Kelvin Echenim, comprehensive 3.6.2024

- Sultan Ahmed comprehensive 3.1.2024
- Leonard Traeger, proposal 2.1.2024
- Azim Khan, comprehensive 10.16.2023
- Samin Semsar, comprehensive 10.13.2023
- Francis Nji comprehensive 10.12.2023
- Sancharee Chowdhury, comprehensive 10.12.2023
- Zahid Hassan Tushar, comprehensive 10.10.2023
- Nadeem Ahmed, comprehensive 10.5.2023
- Joyce Padela, comprehensive 10.5.2023
- Muhammad Hasan Ferdous, comprehensive, 3.13.2023, comprehensive retake 10.2.2023
- Catherine Ordun, proposal, 10.7.2022, final defense 9.18.2023
- Redwan Walid, final defense 8.29.2023
- Xin Huang, proposal 9.1.2022, final defense 7.26.2023
- Homayra Alam, comprehensive, 3.10.2023
- Xingyan Li, comprehensive, 3.8.2023
- Maryam Alomair, comprehensive, 3.7.2023
- Omar Faruque, comprehensive, 3.3.2023
- Munshi Mahbubur Rahman, proposal, 10.31.2022 (**chair**)
- Jal Irani, comprehensive exam (*scheduled, postponed*)
- Khondoker Hossain
- Rashidul Islam **(chair)**, final defense 6.16.2022, proposal defense 5.5.2021
- Abu Zaher Md Faridee, final defense 6.2.2022, proposal defense 4.28.2021
- Neha Singh, final defense 5.27.2022, proposal defense 10.29.2020, comprehensive exam 10.24.2018
- Manish Pillai, final defense 4.27.2022
- Fatema Hasan, proposal defense 3.28.2022
- Antonios Xenakis, comprehensive exam 2nd attempt 3.11.2022, comprehensive exam 10.1.2021
- Seraj Mostafa, comprehensive exam 3.4.2022
- Redwan Walid, proposal 12.6.2021, comprehensive exam 10.6.2020
- Arpita Roy, final defense 7.22.2021, proposal defense 12.3.2019
- Pei Guo, final defense 5.10.2021, proposal defense 12.16.2019
- Neil Kpamegan, comprehensive exam 2nd attempt 3.8.2021, comprehensive exam 9.29.2020
- Wenbin Zhang, final defense 10.8.2020, proposal defense 11.11.2019
- Isıl Doga Yakut Kılıç, proposal defense 2.7.2020
- Nilavra Pathak, final defense 4.26.2019, proposal defense 11.15.2017
- H M Sajjad Hossain, final defense 4.25.2019, proposal defense 11.27.2017
- Timothy Casey, comprehensive exam 10.11.2018
- Bipendra Basnyat, comprehensive exam 10.5.2018

Master's Students

Graduated M.S. Thesis Advisees (Primary Advisor)

- Ketki Deshpande, MS thesis defense 4.16.2020 (chair)

Current M.S. Thesis Advisees (Primary Advisor)

- Parisa Eslami (Spring 2024 – present)
- Abdulai Ben Kamara (Summer 2024 – present)

Current M.S. Volunteer Researchers (Primary Advisor)

- Trupti Lnu (Spring 2024 – present)

M.S. Thesis Committee Member

- Indrajeet Ghosh, M.S. thesis defense 5.26.2020

M.S. Independent Study Advisees

- Josna Chandramohan (Independent Study, Spring 2022)
- Krishna Patel (Independent Study, Spring 2021)
- Dharmil Shah (Independent Study, Spring 2021)
- Sambhaw Sharma (Independent Study, Spring 2021)
- Pranvat Singh (Independent Study, Spring 2021)
- Akarshika Singhal (Independent Study, Fall 2020. Research volunteer Spring 2021)
- Nishigandha Karle (Independent Study, Fall 2020)
- Ninad Sawant (Independent Study, Fall 2020)
- Vamshi Yenmangandla (Independent Study, Fall 2020)
- Vibhor Dharmadhikari (Independent Study, Spring 2020)
- Pranali Kulkarni (Independent Study, Spring 2020)
- Neeharika Kusampudi (Independent Study, Spring 2020)
- Kamlesh Pai (Independent Study, Spring 2020)
- Harish Ramamoorthy (Independent Study, Spring 2020)
- Ashwathy Sureshkumar (Independent Study, Spring 2020)
- Priyanka Jadhav (Independent Study, Fall 2019)
- Taif Ghiwaa (Independent Study, Spring 2018)
- Divya Kavaturi (Independent Study, Spring 2018)

Undergraduate Students

Current Undergraduate Advisees

- Gabriela Schweers (Fall 2024 – present). Undergraduate researcher supported by Cyber Pack Ventures grant
- Chielota Uma (Fall 2024 – present). Undergraduate researcher supported by Cyber Pack Ventures grant

Former Undergraduate Advisees

- Shaniah Reece (Fall 2022 – Spring 2023), Independent Study Fall 2022
    - *Winner of the Center for Women in Technology (CWIT) Student Professional Excellence Award, UMBC, 2023*
    - *Winner of a UMBC Center for Women in Technology (CWIT) Cyber-Scholar Program Scholarship. Cyber Scholars are awarded $5,000-$15,000 per year for 4 years.*
- Anthony Rivera (Fall 2021 – Spring 2023). Independent Study Spring 2022, Undergraduate Research Award (URA) mentor
    - *Winner of a UMBC Undergraduate Research Award (URA) supporting his work with me from Sept 2022 – Sept 2023, $1,500. Project: Fair needs-based ranking of the Medicaid Waitlist.*
    - *Winner of the Student Leadership Award, College of Engineering and Information Technology (COEIT), UMBC, 2022. (This is a college-level award. He was the winner for the Department of Information Systems.)*

- Jordan Troutman (Spring 2019 – 2021). Research mentor, Undergraduate Research Award (URA) mentor
    - *Winner of the Knight-Hennessy Scholarship to attend the Stanford Ph.D. program*
    - *Winner of the Goldwater Scholarship*

  - *Winner of a UMBC Undergraduate Research Award (URA), supporting his work with me from June 2019 – May 2020, $1,500. Project: A Fair Evaluation of the Effectiveness of the Violence Risk Appraisal Guide.*
- Syeda Fatima (Fall 2019), Independent Study
- Nithya Prakash (Spring 2019), CWIT Cyber-Scholar mentor
  - *Winner of a UMBC Center for Women in Technology (CWIT) Cyber-Scholar Program Scholarship. Cyber Scholars are awarded $5,000-$15,000 per year for 4 years.*

High-School Students

Former High-School Mentees

- Gavin Tantleff (Summer 2022 – Summer 2023) Baltimore Polytechnic Institute (BPI) Ingenuity Research Practicum Program
- Elyjah Bassford (Summer 2020 – Summer 2021) Baltimore Polytechnic Institute (BPI) Ingenuity Research Practicum Program

Other Mentees

Current Other Mentees

- Hridita Roy (Spring 2024 – present)

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications (student mentee co-authors indicated with an asterisk)

Peer-Reviewed Works
Peer-Reviewed Conference Papers

- F. Hasan*, Y. Li, J. R. Foulds, S. Pan, and B. Bhattacharjee. DoubleDistillation: Enhancing LLMs for informal text analysis using multistage knowledge distillation from speech and text. In Proceedings of the 26th ACM International Conference on Multimodal Interaction (ICMI), pages 526–535, 2024. **(Nominated for best paper award)**

- R. Islam*, S. Pan, and J. R. Foulds. Fair inference for discrete latent variable models: An intersectional approach. In Proceedings of the 2024 ACM International Conference on Information Technology for Social Good, (GoodIT 2024), pages 188–196, New York, NY, USA, 2024. Association for Computing Machinery.

- M. M. Rahman*, S. Pan, and J. R. Foulds. Towards a unifying human-centered AI fairness framework. In Proceedings of the 2024 ACM International Conference on Information Technology for Social Good, (GoodIT 2024), page 88–92, New York, NY, USA, 2024. Association for Computing Machinery. **(Best paper award – work in progress track)**

- M. A. Khan*, N. Ahmed*, J. Padela*, M. S. Raza, A. Gangopadhyay, J. Wang, J. R. Foulds, C. Busart, R. F. Erbacher. Flood-ResNet50: Optimized Deep Learning Model for Efficient Flood Detection on Edge

Device. In *Proceedings of the 22nd International Conference on Machine Learning and Applications (ICMLA)*, 2023.

- P. G. Feldman, S. Pan, and J. R. Foulds. The Keyword Explorer Suite: A toolkit for understanding online populations. In *Companion Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI)*, *IUI '23 Companion*, 2023. **(Main conference acceptance rate 24%)**

- C. Wang*, K. Wang*, A. Bian*, R. Islam*, K. N. Keya*, J. Foulds, and S. Pan. Do humans prefer debiased AI algorithms? A case study in career recommendation. *27th Annual Conference on Intelligent User Interfaces (IUI),* 2022. **(*Acceptance rate 24.5%*)**

- S. Ali*, S. A. M. Mostafa*, X. Li*, S. Khanjani*, J. Wang, J. Foulds, and V. Janeja. Benchmarking probabilistic machine learning models for Arctic sea ice forecasting. *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2022.

- R. Islam*, K.N. Keya*, Z. Zeng*, S. Pan, and J. R. Foulds. Debiasing career recommendations with neural fair collaborative filtering. In *Proceedings of The Web Conference (WWW 2021), ArXiv preprint arXiv:2009.08955v1 [cs.IR]*, 2021. **(*Acceptance rate 20.6%*)**

- R. Islam*, S. Pan, and J. R. Foulds. Can we obtain fairness for free? *Proceedings of the Fourth AAAI / ACM Conference on Artificial Intelligence, Ethics, & Society (AIES)*, 2021. **(*Acceptance rate 37.3%*)**

- K.N. Keya*, R. Islam*, S. Pan, I. Stockwell, and J. R. Foulds. Equitable allocation of healthcare resources with fair survival models. In *Proceedings of the 2021 SIAM International Conference on Data Mining (SDM 2021),* SIAM, 2021. **(*Acceptance rate 21.25%*)**

- Z. Zeng*, R. Islam*, K. Keya*, J. Foulds, Y. Song, and S. Pan. Fair representation learning for heterogeneous information networks. *Proceedings of the 15th International AAAI Conference on Web and Social Media (ICWSM), arXiv Preprint arXiv:2104.08769v1 [cs.AI]*, 2021. **(*Acceptance rate 20%*)**

- K. Deshpande*, S. Pan, and J. R. Foulds. Mitigating demographic bias in AI-based resume filtering. *Fairness in User Modeling, Adaptation and Personalization Workshop (FairUMAP 2020), Adjunct Publication of the 28th ACM Conference on User Modeling, Adaptation and Personalization*, 2020.

- J. R. Foulds, R. Islam*, K. Keya*, and S. Pan. Bayesian modeling of intersectional fairness: The variance of bias. *SIAM International Conference on Data Mining (SDM), ArXiv preprint arXiv:1811.07255 [cs.LG]*, 2020. **(*Acceptance rate 24%*)**

- J. R. Foulds, R. Islam*, K. Keya*, and S. Pan. An intersectional definition of fairness. *36th IEEE International Conference on Data Engineering (ICDE), ArXiv preprint arXiv:1807.08362 [CS.LG]*, 2020. (***Typical acceptance rate 18%***)

- J. R. Foulds, M. Park, K. Chaudhuri, and M. Welling. Variational Bayes in private settings (VIPS) (extended abstract). *29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI 2020) Journal Track*, 2020. **(*Invited to submit to IJCAI Journal Track by editors of JAIR and peer reviewed. Journal track acceptance rate unknown, main conference acceptance rate 12.4%*)**

- R. Islam* and J. R. Foulds. Scalable collapsed inference for high-dimensional topic models. In *Proceedings of the 2019 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL),* 2019. **(*Long paper acceptance rate 26.3%*)**

- N. Pathak*, J. R. Foulds, N. Roy, N. Banerjee, and R. Robucci. A Bayesian data analytics approach to buildings' thermal parameter estimation. In *Proceedings of the Tenth ACM International Conference on Future Energy Systems (ACM e-Energy),* 2019. **(*Long paper acceptance rate 24.3%*)**

- J. R. Foulds. Mixed membership word embeddings for computational social science. *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS),* 2018. **(*Acceptance rate 33.2%*)**

- M. Park, J. R. Foulds, K. Chaudhuri, and M. Welling. DP-EM: Differentially private expectation maximization. *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS),* 2017. **(*Acceptance rate 31.7%*)**

- J. R. Foulds, J. Geumlek, M. Welling, and K. Chaudhuri. On the theory and practice of privacy-preserving Bayesian data analysis. In *Proceedings of the 32nd Conference on Uncertainty in Artificial Intelligence (UAI),* 2016. **(*Acceptance rate 31%*)**

- Grycner, G. Weikum, J. Pujara, J. R. Foulds, and L. Getoor. RELLY: Inferring hypernym relationships between relational phrases. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing (EMNLP),* pages 971–981, Lisbon, Portugal, September 2015. Association for Computational Linguistics. **(*Long paper acceptance rate 26.2%)***

- S. Fakhraei, J. R. Foulds, M. Shashanka, and L. Getoor. Collective spammer detection in evolving multi-relational social networks. In *Proceedings of the 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD),* 2015. **(*Acceptance rate 19.5%*)**

- J. R. Foulds, S. H. Kumar, and L. Getoor. Latent topic networks: A versatile probabilistic programming framework for topic models. In *Proceedings of The 32nd International Conference on Machine Learning (ICML),* 2015. **(*Acceptance rate 26%*)**

- X. He, T. Rekatsinas, J. R. Foulds, L. Getoor, and Y. Liu. HawkesTopic: A joint model for network inference and topic modeling from text-based cascades. In *Proceedings of the 32nd International Conference on Machine Learning (ICML),* 2015. **(*Acceptance rate 26%*)**

- P. Kouki, S. Fakhraei, J. R. Foulds, M. Eirinaki, and L. Getoor. HyPER: A flexible and extensible probabilistic framework for hybrid recommender systems. In *Proceedings of the 9th ACM Conference on Recommender Systems (RecSys),* 2015. **(*Acceptance rate 21%*)**

- A. Ramesh, S. H. Kumar, J. R. Foulds, and L. Getoor. Unsupervised models of aspect-sentiment for online course discussion forums. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics (ACL),* 2015. **(*Long paper acceptance rate 25%*)**

- D. Sridhar, J. R. Foulds, B. Huang, M. Walker, and L. Getoor. Joint models of disagreement and stance in online debate. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics (ACL),* 2015. (***Long paper acceptance rate 25%***)

- J. R. Foulds and P. Smyth. Annealing paths for the evaluation of topic models. In *Proceedings of the Thirtieth Conference Conference on Uncertainty in Artificial Intelligence (UAI),* 2014. **(*Acceptance rate 32%*)**

- J. R. Foulds and P. Smyth. Modeling scientific impact with topical influence regression. In *Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing (EMNLP),* pages 113–123, Seattle, Washington, USA, October 2013. Association for Computational Linguistics. **(*Long paper acceptance rate 27%*)**

- J. R. Foulds, L. Boyles, C. DuBois, P. Smyth, and M. Welling. Stochastic collapsed variational Bayesian inference for latent Dirichlet allocation. In *Proceedings of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD),* 2013. (***Acceptance rate 17.2%***)

- DuBois, J. R. Foulds, and P. Smyth. Latent set models for two-mode network data. In *Proceedings of the 5th International AAAI Conference on Weblogs and Social Media (ICWSM),* 2011. **(*Acceptance rate 20%*)**

- J. R. Foulds, A. Asuncion, C. DuBois, C. T. Butts, and P. Smyth. A dynamic relational infinite feature model for longitudinal social networks. In *Proceedings of the 14th International Conference on AI and Statistics (AISTATS),* 2011. **(*Recent acceptance rates between 28%–36%*)**

- J. R. Foulds, N. Navaroli, P. Smyth, and A. Ihler. Revisiting MAP estimation, message passing and perfect graphs. In *Proceedings of the 14th International Conference on AI and Statistics (AISTATS),* 2011. (***Recent acceptance rates between 28%–36%***)

- J. R. Foulds and P. Smyth. Multi-instance mixture models and semi-supervised learning. In *SIAM International Conference on Data Mining (SDM),* 2011. (***Recent acceptance rates between 22%–29%***)

- J. R. Foulds and E. Frank. Speeding up and boosting diverse density learning. In *Proceedings of the 13th International Conference on Discovery Science (DS),* 2010. (***Acceptance rate 51%***)

- J. R. Foulds and E. Frank. Revisiting multi-instance learning via embedded instance selection. In *Proc. 21st Australasian Joint Conference on AI (AI),* 2008. (***Long paper acceptance rate 29%***)

Peer-Reviewed Journal Papers

- C. Wang*, K. Wang*, A. Y. Bian*, R. Islam*, K. N. Keya*, J. R. Foulds, and S. Pan. When Biased Humans Meet Debiased AI: A Case Study in College Major Recommendation. *ACM Transactions on Interactive Intelligent Systems (TIIS)*, 13(3):17, 2023

- R. Islam*, K. N. Keya*, S. Pan, A. D. Sarwate, and J. R. Foulds. Differential fairness: An intersectional framework for fair AI. *Entropy*, 25(4):660, 2023.

- K. Keya*, Y. Papanikolaou, and J. R. Foulds. Neural embedding allocation: Distributed representations of topic models. *Computational Linguistics*, 48 (4): 1021–1052, 2022.

- M. Park, J. R. Foulds, K. Chaudhuri, and M. Welling. Variational Bayes in private settings (VIPS). *Journal of Artificial Intelligence Research (JAIR)*, 68:109–157, 2020.

- J. T. Morton*, A. Aksenov, L.-F. Nothias-Scaglia, J. R. Foulds, R. A. Quinn, M. H. Badri, T. L. Swenson, M. W. Van Goethem, T. R. Northen, Y. Vasquez-Beaza, M. Wang, N. A. Bokulich, A. Watters, S.-J. Song, R. Bonneau, P. C. Dorrestein, and R. Knight. Learning representations of microbe-metabolite interactions. *Nature Methods*, 2019.

- Y. Papanikolaou, J. R. Foulds, T. N. Rubin, and G. Tsoumakas. Dense distributions from sparse samples: Improved Gibbs sampling parameter estimators for LDA. *Journal of Machine Learning Research*, 18(62):1–58, 2017.

- J. R. Foulds and E. Frank. A review of multi-instance learning assumptions. *Knowledge Engineering Review*, 25(1), 2010.

- J. R. Foulds and L. R. Foulds. Bridge lane direction specification for sustainable traffic

management. *Asia-Pacific Journal of Operational Research*, 23(2), 2006.

- J. R. Foulds and L. R. Foulds. A probabilistic dynamic programming model of rape seed harvesting. *International Journal of Operational Research*, 1(4), 2006.

Peer-Reviewed Workshop Papers (Competitive Peer-Review Process)

- P. Feldman, A. Dant, and J.R. Foulds. Killer apps: Low-speed, large-scale AI weapons. *5th Workshop on Human-AI Co-Creation with Generative Models (HAI-GEN 2024). IUI '24 Companion: Companion Proceedings of the 29th International Conference on Intelligent User Interfaces. ArXiv preprint arXiv:2402.01663 [cs.CY, cs.CR, cs.LG],* 2024.

- P. Feldman, S. Tiwari*, C. Cheah, J. R. Foulds, and S. Pan. Analyzing COVID-19 tweets with transformer-based language models. *Proceedings of the 6th International Workshop on Social Sensing (SocialSens 2021), an ICWM 2021 Full-Day Workshop, ArXiv preprint arXiv:2104.10259v3 [cs.CL]*, 2021.

- M. Nafees*, S. Pan, Z. Chen, and J. R. Foulds. Impostor GAN: Toward modeling social media user impersonation with generative adversarial networks. *2nd International Workshop on Deceptive AI @ IJCAI 2021 (DeceptAI 2021)*, 2021.

- K. Keya*, R. Islam*, S. Pan, I. Stockwell, and J. R. Foulds. Equitable allocation of healthcare resources with fair Cox models. *AAAI Fall Symposium on AI in Government and Public Sector (AAAI FSS-20)*, 2020.

- J. R. Foulds, R. Islam*, K. Keya*, and S. Pan. Differential fairness. *NeurIPS 2019 Workshop on Machine Learning with Guarantees*, 2019.

- R. Islam*, K. Keya*, S. Pan, and J. R. Foulds. Mitigating demographic biases in social media-based recommender systems. *The 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) Social Impact Track (extended abstract)*, 2019.

- M. Park, J. R. Foulds, K. Chaudhuri, and M. Welling. Private topic modeling. *NIPS Workshop on Private Multi-Party Machine Learning (PMPML)*, 2016.

- Grycner, G. Weikum, J. Pujara, J. R. Foulds, and L. Getoor. A unified probabilistic approach for semantic clustering of relational phrases. In *4th Workshop on Automated Knowledge Base Construction (AKBC)*, 2014.

- D. Sridhar, J. R. Foulds, B. Huang, M. Walker, and L. Getoor. Collective classification of stance and disagreement in online debate forums. In *Bay Area Machine Learning Symposium (BayLearn)*, 2014.

- J. R. Foulds and D. Görür. Diverse personalization with determinantal point process eigenmixtures. In *NIPS Workshop on Personalization*, 2013.

- J. R. Foulds and P. Smyth. Robust evaluation of topic models. In *NIPS Workshop on Topic Models*, 2013.

- J. R. Foulds and P. Smyth. Modeling scientific impact with topical influence regression. In *NIPS Workshop on Algorithmic and Statistical Approaches for Large Social Network Data Sets*, 2012.

Peer-Reviewed Symposium Papers (Non-Competitive Peer Review Process)

- G. Shan*, A. Roy*, J. Foulds, and S. Pan. Causal feature selection with dimension reduction for interpretable text classification. *9th Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL 2022). ArXiv preprint arXiv:2010.04609v1 [cs.LG]*, 2022.

- K. Deshpande*, S. Pan, and J. R. Foulds. Mitigating socio-lingustic bias in job recommendation. *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2020.

- M. Rahman* and J. R. Foulds. End-to-end joint modeling for fake news detection. *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2020.

- C. Wang*, K. Wang*, A. Bian*, R. Islam*, K. Keya*, J. R. Foulds, and S. Pan. A user study on a de-biased career recommender system. *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2020.

- T. Ghiwaa* and J. R. Foulds. Training WGANs with peer instruction. In *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2018.

- R. Islam* and J. R. Foulds. Towards a highly efficient online inference algorithm for latent Dirichlet allocation. In *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2018.

- K. Keya* and J. R. Foulds. Neural embedding allocation: Distributed representations of words, topics, and documents. In *Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL)*, 2018.

- J. R. Foulds. Mixed membership word embeddings. In *SoCal Machine Learning Symposium (SCMLS)*, 2016.

Non-Peer-Reviewed Works

Journal Issues Edited, and Contributions Therein

- S. Pan and J. R. Foulds, editors. *Bulletin of the IEEE Technical Committee on Data Engineering*, volume 44(4). IEEE Computer Society, 2021.

- S. Pan and J. R. Foulds. Letter from the special issue editors. In S. Pan and J. R. Foulds, editors, *Bulletin of the IEEE Technical Committee on Data Engineering*, volume 44(4). IEEE Computer Society, 2021.

- J. R. Foulds and S. Pan, editors. *Bulletin of the IEEE Technical Committee on Data Engineering*, volume 43(4). IEEE Computer Society, 2020.

- J. R. Foulds and S. Pan. Are parity-based notions of AI fairness desirable? In J. R. Foulds and S. Pan, editors, *Bulletin of the IEEE Technical Committee on Data Engineering*, volume 43(4), pages 51–73. IEEE Computer Society, 2020.

- J. R. Foulds and S. Pan. Letter from the special issue editors. In J. R. Foulds and S. Pan, editors, *Bulletin of the IEEE Technical Committee on Data Engineering*, volume 43(4). IEEE Computer Society, 2020.

Public Testimonies

- J.R. Foulds and V. Janeja. Written testimony in support of Maryland house bill 1174 State Government – Technology Advisory Commission – Established, by

Delegates Hill, Guzone, Howard, Qi, and Wu., 2024.

- V. Janeja and J.R. Foulds. Written testimony in support of Maryland house bill 1132 state government – technology and science advisory commission– established, by Delegates Hill, Charles, Qi, Ruth, and Wu., 2023.

- V. Janeja and J. R. Foulds. Written testimony in support of Maryland house bill 1323, algorithmic decision systems – procurement and discriminatory acts, by Delegate Hill., 2021.

Non-Peer Reviewed Reports

- J. T. Morton*, D. McDonald, A. Aksenov, L.-F. Nothias-Scaglia, J. R. Foulds, R. A. Quinn, M. H. Badri, T. L. Swenson, M. W. Van Goethem, T. R. Northen, Y. Vasquez-Beaza, M. Wang, N. A. Bokulich, A. Watters, S.-J. Song, R. Bonneau, P. C. Dorrestein, and R. Knight. Revisiting microbe-metabolite interactions: Doing better than random. *BioRxiv preprint, DOI: https://doi.org/10.1101/2019.12.10.871905*, 2019.

Theses

- J. R. Foulds. *Latent Variable Modeling for Networks and Text: Algorithms, Models and Evaluation Techniques*. PhD thesis, University of California, Irvine, 2014.

- J. R. Foulds. Learning instance weights in multi-instance learning. Master's thesis, University of Waikato, Hamilton, New Zealand, 2008.

- J. R. Foulds. Learning to play the game of Go. Honours thesis, University of Waikato, Hamilton, New Zealand, 2006.

Works Submitted or in Preparation

Books

- Ian H. Witten, Eibe Frank, Mark A. Hall, Christopher J. Pal, and J. R. Foulds. *Data mining: practical machine learning tools and techniques (5th edition)*. Morgan Kaufmann / Elsevier, Cambridge, MA, 2024 (in preparation).

Peer-Reviewed Papers Submitted to Selective Conferences, with Publicly Available Preprints

- Z. Khanjani*, C. Mallinson, J. R. Foulds, and V. P. Janeja. ALDAS: Audio-linguistic data augmentation for spoofed audio detection. ArXiv preprint arXiv:2410.15577 [cs.SD], 2024.

- P. Feldman, J. R. Foulds, and S. Pan. RAGged edges: the double-edged sword of retrieval-augmented chatbots. ArXiv preprint arXiv:2403.01193v2 [cs.CL], 2024.

- P. Feldman, J. R. Foulds, and S. Pan. Trapping LLM hallucinations using tagged context prompts. ArXiv preprint arXiv:2306.06085 [cs.CL], 2023.

- F. Hasan*, Y. Li, J. R. Foulds, B. Bhattacharjee, and S. Pan. Teach me with a Whisper: Enhancing large language models for analyzing spoken transcripts using speech embeddings. ArXiv preprint arXiv:2311.07014v1 [cs.CL], 2023.

- G. J. Cancro*, S. Pan, and J. R. Foulds. Tell me something that will help me trust you: A survey of trust calibration in human-agent interaction. *ArXiv preprint arXiv:2205.02987 [cs.HC]*, 2022.

- P. G. Feldman, A. P. Dant, J. R. Foulds, and S. Pan. Polling latent opinions: A method for computational sociolinguistics using transformer language models. *ArXiv preprint arXiv:2204.07483 [cs.CL]*, 2022.

- F. Hasan*, K. S. Xu, J. R. Foulds, and S. Pan. Learning user embeddings from temporal social media data: A survey. *ArXiv preprint arXiv:2105.07996v1*, 2021

- K. Prabhu*, S. Semsar*, and J. R. Foulds. Simulation of a predictive policing model to corroborate the theory of discriminatory bias due to feedback loops, 2023 (submitted for publication).

Presentations

Conference/Poster Presentations (Juried/Refereed)

Note: All conference and workshop publications were presented at the event, either by myself or by a student co-author. This list contains additional invited presentations, and presentations accepted based on an abstract.

Presentations with Refereed Abstracts

- James Foulds and Shimei Pan. SDM 2023 tutorial: "*How to Design a Fair Data Mining System: Navigating the Trade-Offs*," Minneapolis, MN, April 2023

- Kevin Xu and James Foulds. SDM 2021 tutorial: "*Mining Dynamic Networks with Generative Models*," online presentation. (Previously accepted to SDM 2020 but cancelled due to COVID-19, re-reviewed and accepted at SDM 2021), May 2021

- V. Janeja (primary presenter), S. Pan, J. Foulds, L. Boot. UMBC Provost's Teaching and Learning Symposium. Including Ethics in Data Science Pedagogy: Why, What and How?, UMBC, Sept. 2019

- J. T. Morton, A. Aksenov, R. Knight, S. J. Song, R. Bonneau (primary presenter), M. Badri, T. Northen, Marc Van Goethem, T. Swenson, R. Quinn, J. R. Foulds, L.-F. Nothias-Scaglia, P. Dorrestein. The 27th Conference on Intelligent Systems for Molecular Biology / the European Conference on Computational Biology (ISMB/ECCB) 2019 Abstracts. Identifying microbe-metabolite interactions with a compositional matrix factorization, July 2019

- K. Xu and J.R. Foulds. ICWSM 2018 tutorial: Generative Models for Social Media Analytics: Networks, Text, and Time, Stanford, CA, June 2018

Conference/Poster Presentations (Non-Juried/Refereed)

Invited conference presentations

- J.R. Foulds and S. Pan. Keynote talk: SIAM Data Mining (SDM 2023) Workshop on Algorithmic Fairness in Artificial intelligence, Machine learning and Decision Making (AFair-AMLD 2023), "*Human-Centered Approaches to AI Fairness*," Minneapolis, MN, April 2023

- Keynote Panel: "*Implementing Intersectionality in Algorithmic Fairness*," ACM Conference on Fairness, Accountability, and Transparency (ACM, FAccT 2022), Seoul, South Korea (panel presentation), June 2022

- 2019 Advancing Ethical Research (AER) Conference, hosted by Public Responsibility in Medicine and Research (PRIM&R). Panelist/presenter in *From Fortnite to Facebook: Data Security and Breaches, Downstream Harms, and the (Precarious) Role of IRBs*, Boston, MA, Nov. 2019

- Workshop on Including Ethics in Data Science Pedagogy (EDSP 2019), panel moderator and presenter, Alexandria, VA, June 2019

- K. Xu and J.R. Foulds. SBP-BRIMS 2016 invited tutorial: *Generative Models for Social Network Data*, UCDC, Washington DC, July 2016

Non-Refereed and Invited Presentations.

- Update on the Online MS Program, IS Advisory Board Meeting, UMBC, April 2024

- Computer & Data Sciences Colloquium, "*Biased AIs and How to Fix Them: Bridging the Gap Between the Fair AI Paradigm and the Humans it is Meant to Help*," Case Western Reserve University, Cleveland, OH, March 2024

- Digital Health Disparities class, *"Algorithmic Bias and Healthcare,"* UMBC (guest lecture), March 2024

- Oral testimony in support of Maryland house bill 1174 State Government – Technology Advisory Commission – Established, by Delegates Hill, Guzone, Howard, Qi, and Wu. Maryland General Assembly, Health and Government Operations Committee, March 2024.

- U.S. SEC AI Community of Practice Seminar, "*Biased AIs and How to Fix Them: Bridging the Gap Between the Fair AI Paradigm and the Humans it is Meant to Help*," US Securities and Exchange Commission (SEC) (online presentation), Nov. 2023

- Charissa Cheah and James Foulds. Presentation summarizing our report as subcommittee co-chairs for "*UMBC Bold: The Research Enterprise. A Campus Conversation,*" Research and Creative Achievement Council, UMBC, Oct. 2023

- *Building Blocks: Big Data Policy*, panelist, School of Public Policy, UMBC, Oct. 2023

- AI/ML PhD Student Open Seminar, "*AI Fairness + Latent Variable Modeling + YOU!,"* Department of Information Systems, UMBC, Oct. 2023

- Charissa Cheah and James Foulds. Session co-chair for "*UMBC Bold: The Research Enterprise. A Campus Conversation,*" Session 2 (online), UMBC, March 2023

- Oral testimony in support of Maryland house bill house bill 1132 state government – technology and science advisory commission – established, by Delegates Hill, Charles, Qi, Ruth, and Wu. Maryland General Assembly, Appropriations Committee (online testimony), March 2023

- Digital Health Disparities class, *"Algorithmic Bias and Healthcare,"* UMBC (guest lecture), March 2023

- Charissa Cheah and James Foulds. Session co-chair for "*UMBC Bold: The Research Enterprise. A Campus Conversation,*" Session 1 (in-person), UMBC, March 2023

- Information Theory and Applications (ITA) Workshop, "*Fair Inference for Discrete Latent Variable Models*," San Diego, CA, Feb. 2023

- NSF CAREER Grant Workshop, CNMS & COEIT, UMBC, Jan. 2023

- BCH AI and Machine Learning Working Group, "*An Intersectional Definition of Fairness and Fair Allocation of Healthcare Resources*," Boston Children's Hospital, Boston, MA, Jan. 2023

- Ingenuity Project 10th Grade Speaker Series, "*Fairness and Bias in AI: How Can We Make Artificial Intelligence Work for Everyone?,"* Baltimore Polytechnic Institute, Baltimore, Nov. 2022.

- Department of Information Systems Advisory Board Meeting, *"Research in the Department: NSF CAREER Award,"* UMBC (online presentation), March 2022

- Digital Health Disparities class, *"Algorithmic Bias and Healthcare,"* UMBC (online guest lecture), March 2022

- Fika Faculty Research Presentation, "*Fairness and Bias in AI + Latent Variable Modeling,*" Department of Information Systems, UMBC (online talk), Feb. 2022

- UMBC / RHUL Research Catalyst Meeting, *"Fairness and Bias in AI + Latent Variable Modeling + YOU!,"* Royal Holloway, University of London (RHUL) and UMBC (online talk), Feb. 2022

- CAREER Award Panel, Department of Information Systems, UMBC (online panel presentation), Feb. 2022

- AI/ML PhD Student Open Seminar, *AI Fairness + Latent Variable Modeling + YOU!,* Department of Information Systems, UMBC, Oct. 2021

- Forbes Corridor Colloquia: Responsible AI, *"Responsible AI: How Can We Make Artificial Intelligence Work for Everyone?,"* online seminar series jointly hosted by the University of Pittsburgh & Carnegie Mellon University (online talk), Oct. 2021

- Center for Women in Technology (CWIT) Cyber Practicum, *"Fairness and Bias in AI: An Intersectional Approach,"* UMBC (online talk), Sept. 2021

- UMBC New Faculty Welcome Event, Faculty Development Center, UMBC (online panel presentation), Aug. 2021

- COEIT Social Responsibility Week, *"Socially Responsible Research,"* UMBC (online panel presentation), March 2021

- Oral testimony in support of Maryland House Bill 1323, Algorithmic Decision Systems – Procurement and Discriminatory Acts, by Delegate Hill. Maryland General Assembly, Health and Government Operations Committee (online testimony), March 2021

- AI/ML PhD Student Open Seminar, *AI Fairness + Latent Variable Modeling + YOU!,* Department of Information Systems, UMBC, Oct. 2020

- Leidos Innovations Center (LInC) AI/ML reading group meeting, Leidos, Arlington, VA (online talk), Oct. 2020

- Baltimore Polytechnic Institute Ingenuity Project Seniors, "*How to Make Machine Learning Work for Everyone*," Baltimore, MD (online talk, presentation to high-school students in a

research program), Oct. 2020

- Faculty Development Center (FDC) *Workshop on Concept Mapping* (presenter), UMBC, Feb. 2020
- AI/ML PhD Student Open Seminar, *Latent Variable Modeling + AI Fairness + YOU!,* Department of Information Systems, UMBC, Oct. 2019
- National Science and Technology Medal Foundation (NSMTF) panelist, "*Science Unscripted: Conversation with AI Experts*," UMBC. The audience included a group of specially selected high-school students, Oct. 2019
- UMBC Information Systems Department Research Seminar, Sept. 2019
- University of Southern California (USC) Information Sciences Institute (ISI), Artificial Intelligence Seminar, August 2019
- Escape Velocity 2019 by the Museum of Science Fiction, Gaylord National Resort & Convention Center, National Harbor, Washington, D.C., May 2019
- RIKEN Center for Advanced Intelligence Project (AIP), Tokyo, Japan, April 2019
- University of Baltimore School of Law, Legal Hackers Baltimore meeting, March 2019
- Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb. 2019
- Maryland State Bar Association Conference, Towson, MD, Feb. 2019
- Johns Hopkins University, Applied Physics Laboratory (APL) Seminar, Dec. 2018
- UMBC, guest lecture for Introduction to Data Science class, Dec. 2018
- Johns Hopkins University, Center for Language and Speech Processing (CSLP) Seminar, Nov. 2018
- Artificial Intelligence Maryland (MD-AI) Seminar, Emerging Technology Centers (ETC), Baltimore, MD, Nov. 2018
- Federal Trade Commission (FTC) Hearing on Artificial Intelligence and Algorithmic Decision Tools, Howard University School of Law, Washington, DC, Nov. 2018
- AI/ML PhD Student Open Seminar, *Latent Variable Modeling + AI Fairness + YOU!,* Department of Information Systems, UMBC, Oct. 2018
- AAAI Fall Symposium on AI for Government and Public Sector Applications, Arlington, VA, Oct. 2018
- Networking and Information Technology Research and Development (NITRD) Interagency Working Group on Privacy R & D, National Coordination Office, Washington, DC, Sept. 2018
- George Mason University, UMBC Group Visit on Cognitive Computing, Sept. 2018
- National Institute of Standards (NIST) Gaithersburg, AI Community of Interest Seminar, June 2018
- UMBC, ACM Faculty Seminar, April 2018
- UMBC, Discussant for a screening of the AlphaGo documentary, Feb 2018

- AI/ML PhD Student Open Seminar, *Latent Variable Modeling for Data Big and Small, with Perspectives on the Big Data Revolution,* Department of Information Systems, UMBC, Oct. 2017
- UMBC, March 2017
- Oregon State University, March 2017
- Tulane University, March 2017
- UC Riverside, March 2017
- Boston College, Feb. 2017
- California State University – Long Beach, Feb. 2017
- UCSD, Artificial Intelligence Seminar, Jan. 2017
- USC, Artificial Intelligence Seminar, May 2016
- UCSD, Angela Yu's lab, April 2016
- UCI, Center for Machine Learning and Intelligent Systems Seminar, Jan. 2016
- UCSD, Artificial Intelligence Seminar, Nov. 2015
- Banff International Research Station (BIRS), New Perspectives for Relational Learning
- Workshop, April 2015
- eBay Research Labs, August 2014

Media Activities (radio or television interviews, for example)

- Featured in Inquiring Minds Research Publication, UMBC Research and Creative Achievement, segment titled "*Working to Improve Fairness of AI Systems*," March 2023
- James Foulds and Shaniah Reece. WJZ News (prime-time), Baltimore's CBS News affiliate, segment on "Finding Equity and Unbias through Artificial Intelligence," Feb. 2023
- Amber Taylor (Host), Earl Young, James R. Foulds, Sonia Kumar (contributors). ACLU Maryland Podcast: Racism, Algorithms, and the Fight for Redemption, Oct. 2019

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Service to the Department

- IS Department Research Committee, Fall 2024
- IS Department Graduate Program Director (GPD), Online MS in IS, Fall 2023 – present
- Chair, IS Department Graduate Committee (Online MS), Fall 2023 – present

- IS Department Workload Policy Working Group, Fall 2023 – Spring 2024
- IS Department MS Advising (course approvals and course selection advice for between around 10 – 30 MS students per semester), Spring 2018 – present
- IS Department Graduate Committee (IS on Campus), Spring 2023
- IS Department Graduate Committee (HCC), Spring 2023
- IS Department Graduate IS Admissions Committee, Spring 2023
- IS Department Graduate Committee (IS on Campus), Fall 2022
- IS Department Graduate Committee (HCC), Fall 2022
- IS Department Graduate IS Admissions Committee, Fall 2022
- IS Department Research Committee, Spring 2022
- IS Department Vision Committee (developing vision and mission statements for the department), Spring 2022
- IS Department Student Research Symposium. Co-Organizer. Spring 2022.
- IS Department Research Committee, Fall 2021
- IS Department Vision Committee (developing vision and mission statements for the department), Fall 2021
- IS Department Student Poster Day. Co-Organizer. Judge of Best Poster Contest. Spring 2021.
- IS Department Research Seminar Organizer, Spring 2021.
- IS Department Research Committee, Spring 2021.
- IS Department Search Committee, UMBC Postdoctoral Fellows For Faculty Diversity, Fall 2020.
- IS Department Research Seminar Organizer, Fall 2020.
- IS Department Research Committee, Fall 2020.
- IS Department Research Seminar Organizer, Spring 2020.
- IS Department Research Committee, Spring 2020.

- IS Department Research Seminar Organizer, Fall 2019.
- IS Department Research Committee, Fall 2019.
- IS Department Tenure-Track Search Committee, Fall 2019 – Spring 2020.
- IS Department AI/KM Tenure-Track Search Committee, Fall 2018 – Spring 2019.

Service to the University

- Committee Member, UMBC Research and Creative Achievement Council (RCAC), Fall 2023 – Spring 2026
- Committee Member, Selection Committee, UMBC Strategic Awards for Research Transitions (START), Spring 2023
- Subcommittee Co-Chair, UMBC Bold: The Research Enterprise. A Campus Conversation, Spring 2023
- Committee Member, Search Committee, Associate Dean for Academic Programs and Learning. Chair: Erin Lavik. Spring 2021.
- Committee Member, Launch Committee (COEIT initiative providing mentorship for new tenure-track faculty), Md. Osman Gani, Summer 2020 – Spring 2021

Service to the Community

- Mentor, Baltimore Polytechnic Institute (BPI) Ingenuity Research Practicum Program. High school student mentored: Gavin Tantleff. Summer 2022 – Summer 2023
- Mentor, Baltimore Polytechnic Institute (BPI) Ingenuity Research Practicum Program. High school student mentored: Elyjah Bassford. Summer 2020 – Summer 2021

Service to the Profession

Conference Organization

- Co-Organizer, Workshop on Including Ethics in Data Science Pedagogy (EDSP 2019)
- Workflow Chair, Artificial Intelligence and Statistics (AISTATS) 2019 conference
- Co-Chair, Information Theory and Applications (ITA) workshop 2017
- Co-Chair, Information Theory and Applications (ITA) workshop 2016

Journal Special Edition Editor

Shimei Pan and James Foulds (co-editors), Bulletin of the IEEE Technical Committee on Data Engineering 44:(4) Special Issue on Responsible AI and Human-AI Interaction

James Foulds and Shimei Pan (co-editors), Bulletin of the IEEE Technical Committee on Data Engineering 43:(4) Special Issue on Interdisciplinary Perspectives on Fairness and Artificial Intelligence Systems

Book Reviewing

- Morgan Kaufmann / Elsevier. *Present edition reviewer of I. Witten et al., Data Mining: Practical Machine Learning Tools and Techniques (4th edition)*

Grant Proposal Reviewing

- NSF, panel reviewer (1 panel), 2022
- George Mason University, Office of Research Innovation and Economic Impact (ORIEI): Take it to the Next Level – Multidisciplinary Research Seed Funding Initiative in Sustainability, Biohealth Digital Innovation, proposal reviewer
  (The winning projects each received funding of up to $100K each plus tuition and health insurance for one full-time doctoral student per project, for an award duration of 12 to 18 months), 2022
- NSF, panel reviewer (1 panel), 2021
- NSF, panel reviewer (1 panel), 2020
- NSF, panel reviewer (1 panel), 2019
- NSF, ad-hoc reviewer (1 proposal), 2019
- George Mason University, Transdisciplinary Centers for Advanced Study panel reviewer.
  (The winning centers each received funding of $125,000 per year for up to 5 years.), 2019
- National Fund for Scientific and Technological Development (FONDECYT) of the Chilean National Commission for Scientific and Technological Research (CONICYT), 2018 FONDECYT Regular Competition, 2017

Journal Reviewing

- Machine Learning Journal (editorial board member) , 2024
- Machine Learning Journal (editorial board member) , 2023
- Machine Learning Journal (editorial board member) , 2022
- IEEE Trans. Information Theory, 2022
- Machine Learning Journal (editorial board member), 2021
- Statistics and Computing, 2021
- TACL, 2020
- Nature Communications, 2020

- TACL, 2019
- DAMI, 2019
- Nature Communications, 2019
- TACL, 2018
- MLJ, 2017
- TACL, 2017
- FGCS, 2017
- JMLR, 2016 or earlier
- JAIR, 2016 or earlier
- Annals of Applied Statistics, 2016 or earlier
- Neural Computation, 2016 or earlier
- MLJ, 2016 or earlier
- AIJ, 2016 or earlier
- ACM TIST, 2016 or earlier
- TACL, 2016 or earlier
- IEEE TNNLS, 2016 or earlier
- IEEE TKDE, 2016 or earlier
- DAMI, 2016 or earlier
- SWJ, 2016 or earlier
- CAMWA, 2016 or earlier

Conference Program Committee Reviewer

Note: years are when the reviewing was done, which is not necessarily the year that the conference took place.

- AISTATS, 2024
- IJCAI 2024 (emergency reviewer)
- ACL Rolling Review, 2024
- NeurIPS ethics reviewer, 2023

- AISTATS **(Awarded top reviewer status for being in the top 10% of reviewers for the AISTATS 2023 conference)**, 2023
- ICLR, 2023
- ACL Rolling Review, 2023
- ACL Rolling Review, 2022
- AISTATS, 2022
- ECML PKDD Demo Track, 2022
- ICLR, 2022
- NeurIPS, 2022
- ACM FaCCT, 2021
- AISTATS **(Awarded top reviewer status for being in the top 10% of reviewers for the AISTATS 2022**
- **conference)** , 2021
- NeurIPS, 2021
- ICLR, 2021
- NeurIPS Workshop on Privacy in Machine Learning (PRiML), 2021
- ICML (**area chair**) , 2020
- NeurIPS **(awarded free registration as one of the top reviewers)** , 2020
- AISTATS, 2020
- SBP-BRiMS, 2020
- EMNLP, 2020
- ICML (**area chair**), 2019
- AAAI (**Senior Program Committee member**), 2019
- NeurIPS **(awarded free registration as one of the top reviewers)**, 2019
- IJCAI, 2019
- NeurIPS Workshop on Privacy in Machine Learning (PRiML), 2019
- NAACL, 2018
- ACL, 2018
- ICML, 2018

- IJCAI, 2018
- UAI, 2018
- WWW, 2018
- BigNet Workshop, 2018
- ICML, 2017
- ICLR, 2017
- IJCAI, 2017
- UAI, 2017
- ACL, 2017
- NIPS, 2016 or earlier
- ICML, 2016 or earlier
- AAAI, 2016 or earlier
- IJCAI, 2016 or earlier
- AISTATS, 2016 or earlier
- UAI, 2016 or earlier
- ACL, 2016 or earlier
- NAACL, 2016 or earlier
- WWW, 2016 or earlier
- ICRA, 2016 or earlier
- IEEE BigData, 2016 or earlier
- NIPS Topic Models Workshop, 2016 or earlier

Programming Contest Problem Sponsor/Problem Reviewer

- ACM South Pacific Region Programming Contest, 2007–2008
- New Zealand Programming Contest, 2007

TEACHING

Courses Taught

- IS 698/800 Special Topics in IS: Artificial Intelligence (Spring 2024, UMBC)
- IS 603 Decision Making Support Systems (Fall 2023, UMBC)
- IS 698/800 Ethical and Responsible AI (Fall 2023, UMBC)
- IS 757 Deep Learning (Spring 2023, UMBC)
- IS 427 Introduction to Artificial Intelligence: Concepts and Applications (Spring 2022, UMBC)
- IS 698/800 Special Topics in IS: Probabilistic Machine Learning (Fall 2021, UMBC)
- IS 603 Decision Making Support Systems (Fall 2021, UMBC)
- IS 603 Decision Making Support Systems (Spring 2021, UMBC)
- IS 733 Data Mining (Fall 2020, UMBC)
- IS 428 Data Mining Techniques and Applications (Fall 2020, UMBC)
- IS 733 Data Mining (Spring 2020, UMBC)
- IS 428 Data Mining Techniques and Applications (Fall 2019, UMBC)
- IS 733 Data Mining (Fall 2019, UMBC)
- IS 733 Data Mining (Spring 2019, UMBC)
- IS 698/800 Special Topics in IS: Probabilistic Machine Learning (Fall 2018, UMBC)
- IS 733 Data Mining (Spring 2018, UMBC)
- IS 733 Data Mining (Fall 2017, UMBC)
- CSE291D Latent Variable Models (Spring 2017, UCSD)
- CSE291D Latent Variable Models (Spring 2016, UCSD)

Teaching Assistant

Teaching Assistant, University of Waikato, Hamilton, New Zealand. I was a teaching assistant for the following courses one or more times between 2005–2007

- Logic and Computation
- Critical Reasoning
- Introduction to Logic

- Logic and Programming
- Introduction to Computer Science 1
- Introduction to Computer Science 2

CURRICULUM VITAE

VANDANA JANEJA

EDUCATION

PhD	2007	Rutgers University, Management, Information Technology
M.B.A	2007	Rutgers University, Management, Information Technology
M.S	2001	New Jersey Institute of Technology, Computer Science
M.S	1999	Devi Ahilya Vishwa Vidhyalaya, India, Computer Management
B.S	1997	Devi Ahilya Vishwa Vidhyalaya, India, Geology
Diploma	1997	National Institute of Information Technology, India, Honors Diploma in Systems Management

Experience in Higher Education

10/2023-	Associate Dean for Research and Faculty Development, College of Engineering and Information Technology, UMBC
11/2020-10/2023	Chair, Information Systems Department, UMBC
8/2019-11/2020	Interim Chair, Information Systems Department, UMBC
3/2022-	Director, iHARP, NSF-HDR Institute for Harnessing Data and Model Revolution in the Polar Regions
7/2019-	Professor of Information Systems, UMBC
9/2018-9/2021	Expert in the Directorate for Computer and Information Science and Engineering (CISE), National science Foundation (NSF)
2018- 2019	Graduate Program Director, Online Masters Program, Information Systems, UMBC
2014 –2019	Associate Professor of Information Systems, UMBC
2007 –2014	Assistant Professor of Information Systems, UMBC
2001 - 2001	New Jersey Institute of Technology, Adjunct Faculty, Computer Science

Experience in Other than Higher Education

01/2002 - 06/2007	Center for Information Management, Integration and Connectivity (CIMIC), Rutgers State University, Research Associate
08/2001 - 12/2001	Network Security Solution, NJ, Senior Software Engineer
02/2001 - 07/2001	Site Gain Inc., NJ, Senior Software Engineer
05/2000 – 01/2001	New Jersey Institute of Technology, Research Assistant
01/2000 – 05/2000	New Jersey Institute of Technology, Teaching Assistant
12/1997 - 01/1999	Compi World Services, India, Software Engineer
03/1999 – 05/1999	MBH Systems & Softwares Pvt. Ltd., India, Software Eng.

Research Support

06/23/2024- 06/30/2026	CIRC: DEV: Community Infrastructure for Advancing Audio Deepfake Detection, $749,623.00, PI
04/2024- 03/2026	Research Infrastructure: CC* Data Storage: Broadening UMBCs Data Storage footprint to Advance Scientific Research and Discovery, $498,122, Co-PI

11/2023- 10/2027	Collaborative Research: SCIPE: Enhancing the Transdisciplinary Research Ecosystem for Earth and Environmental Science with Dedicated Cyber Infrastructure Professionals, UMBC PI $999,668, total with UMCES $3,840,827
01/2022 -12/2026	iHARP- NSF HDR institute for Harnessing Data and Model Revolution in the Polar Regions, one of the 5 NSF HDR institutes, PI, NSF, $13,000,000
	iHARP Supplementary funding, PI, $700,002, Expanding the iHARP community and its links to the HDR ecosystem REU supplement, PI, NSF, $32,000
6/2022-5/2024	Enabling Interdisciplinary Collaboration: Improving Human Discernment of Audio Deepfakes via Multi-level Information Augmentation, PI, NSF, $299,839 REU supplement, PI, NSF, $32,000
10/2019- 7/2024	Undergraduate Data Science at Scale (UDSS), NSF, $3,000,000, Sr. Personnel (UMBC Lead -$320,999)
05/2019-04/2020	Workshop on Including Ethics in Data Science Pedagogy, NSF, $50,000, Co-PI
9/2015-8/2019	Integrating Cybersecurity with Undergraduate IT Programs, NSF, $399,753, PI (transferred official PI status to Dr. Aryya Gangopadhyay as of 9/17 – due to COI rules for AAAS STP fellowship, served as ex-officio PI)
9/2017-8/2018	Dynamic Reputation Scoring Model for Real Time Anomaly Detection, CISCO, $151,195, Co-PI
9/2015 - 8/2016	Discovering Anomalous Spatio-temporal Associations, U.S. Army Corps, $44,981 PI
2015- 2016	Big Data analytics, Ekagra software Technologies, through CHMPR-NSF I/UCRC, $90000, PI
	2015-2016 Institutional Support for Post-Family Leave Faculty Research Reintegration Award, Travel support, Research Writing Coach support, through NSF EAGER On Ramps to Full Professor
12/2013 – 12/2015	Biomedical Informatics for Clinical Decision Support, sponsor: Northrop Grumman, through CHMPR-NSF I/UCRC, $40,000, Co-PI
12/2013 – 12/2014	Big Data Analytics with the LexisNexis HPCC System, Sponsor LexisNexis, through CHMPR-NSF I/UCRC, $40,000, Co-PI
02/2009 - 01/2010	Anomaly Detection for Traffic Monitoring Data, sponsor: MDoT-State Highway Administration, $53,580, Co-PI.

Fellowships and Awards

2024	University System of Maryland, Board of Regents Faculty Award for *Excellence in Scholarship or Research*
2022-2024	UMBC ADVANCE Cohort member
6/2020 – 6/2022	Fellow in the Executive Leadership in Academic Technology, Engineering and Science (ELATES) Program, 2020-2022 Cohort
2020-2021	UMBC ADVANCE Cohort member
07/2019- 06/2021	Innovation Fellow, Ethical considerations in data science curricula, UMBC- Hrabowski Innovation Fund
09/2017 – 08/2018	AAAS Science & Technology Policy Fellow at the Directorate for Computer and Information Science and Engineering(CISE), Office of the Assistant Director, National Science Foundation
2009-2010	Special Research Assistantship/Initiative Support (SRAIS), UMBC
2009	Kauffman Grant for Entrepreneurship in Data Science, UMBC
2011	Summer Faculty Fellowship (SFF), UMBC
2008	Summer Faculty Fellowship (SFF), UMBC
2005-2006	Rutgers Business School Dean's Fellowship
2004, 2005	Rutgers Business School Dean's Summer award

Ph.D. Students

Chair

- Alabi Jamiu Ahmed, Expected graduation, 2028, Chair
- Noshaba Bhalli, Expected graduation, 2028, Chair
- Akila Sampath, Expected graduation, 2027, Co-Chair
- Maloy Kumar Devnath, Expected graduation, 2027, Chair
- Rohan Putatunda, Expected graduation, 2026, Chair
- Tolulope Ale, Expected graduation, 2026, Chair
- Francis Nji, Expected graduation, 2026, Co-Chair
- Zhara Khanjani, Expected graduation, 2026, Chair
- Ira Winkler, Expected Graduation, 2025, Chair
- Chhaya Kulkarni, Expected Graduation 2025, Chair
- Faisal Quader, November 2020, Chair, Technuf LLC.
- Mohammad Alodadi, October 2020, Chair, NIH- Leidos
- Ali Azari , Dec-2015, Chair, CVS Pharmacy
- Josephine Namayanja, May-2015, Chair, Associate Executive Director, iHARP
- Yanan Sun, May-2014, Chair, Booz Allen Hamilton
- Lei Shi, May-2014, Chair, Airbnb
- Mike McGuire, Apr-2010, Co-Chair, Associate Professor - Towson University

Member

- Manesh Pillai, May 2022, Member
- Nujood Alodadi, Apr 2022, Member
- Ronak Razavisousan, 2022, Member
- Iyanuoluwa Odebode, Apr-2019, Member
- Foteini Cheirdari, Apr-2019, Member
- Yuanyuan Feng, Proposal Dec-2018, Member
- Lawrence Sebald, Proposal - Nov-2017, Member
- Amrita Anam, 2019, Member
- Ibrahim Toure, Jun-2017, Member
- Mohammad Arif Ul Alam, Proposal-August-2016, Member
- Rose Yesha, Apr-2016, Member
- Fan Yang, Proposal - Feb- 2016, Member
- Cailing Dong, Jun-2017, Member
- Amir Karami, Jun-2015, Member
- Ahmed Aleroud, Nov-2014, Member
- Song Chen, Aug-2014, Member
- Hayden Wimmer, Jul-2013, Member
- Madhu Ahluwalia, Apr-2011, Member

Master's Students

Chair

- Atefeh Zebeli, Dec-2022, Project Advisor
- Anna Tuz, Dec-2022, Project Advisor
- Rajan Yadav, May-2022, , Project Advisor
- Sudeep Mishra, May-2022, , Project Advisor
- Henanksha Sainani, Jun-2018, Chair
- Suraksha Shukla, Dec 2016, Chair
- Prathamesh Walkikar, Dec-2016, Chair
- Vasundhara Misal, Oct-2016, Chair
- Anuja Kench, May-2015, Co-Chair
- Akshay Grover, May-2015, Co-Chair
- Jay Gholap, Dec-2015, Chair
- Kundala Das, Aug-2013, Chair
- Prerna Mohod, May-2012, Chair
- Abdulrahman Alothaim, May-2012, Chair
- Revathi Palanisamy, May-2010, Chair
- Peng He, Dec-2010, Chair
- Mukta Gupta, Dec-2008, Project Advisor

Member

- Ankur Nagar, Apr-2019, Member
- Muthukumar Thevar, Apr-2017, Member
- Jimish Kadakia, Nov-2015, Member
- Vivek Desai , Jun-2015, Member
- Nilesh Chaturvedi, Jun-2013, Member
- Prayank Sharma, Jul-2012, Member
- Rashmi Nadubeediramesh, Apr-2011, Member
- Ruman Tambe, Apr-2011, Member

- Sejal Shah, May-2011, Member
- Dongjin Kim, Nov-2010, Member
- Shawn Johnson, Apr-2009, Member

Undergraduate Students

- Kavin Manivanan, Data Science Scholar, 2024
- Ashraf Khawooya, Data Science Scholar, 2024
- Kiffy Nwosu, Data Science Scholar, REU, 2023, 2024
- Chloe Evered, Data Science Scholar, REU, 2023
- Olisa Okolo, Data Science Scholar, Fall 2021
- Sindhoori Mukka, Data Science Scholar, Fall 2021
- Christophe Haddad, Data Science Scholar, Fall 2021
- Harrison DeFord, Data Science Scholar, Fall 2021
- Adam Goldstein, UC Berkeley, Ethical thinking in Data Science, Summer 2021
- Olisa Okolo, Trajectory mining, Summer 2021
- Tilina Alzaben, Data Science Scholar, Spring 2021
- Curtis Byrd, Data Science Scholar, Spring 2021
- Anya Hosseini, Data Science Scholar, Spring 2021
- Sadia Rahman, Data Science Scholar, Spring 2021
- Gabrielle Watson, Cyber Scholar, Deep Fake Detection, 2020
- Aminat Alabi, Bias in cybersecurity solutions, 2020
- Mackenzie Harwood, Ethical thinking in Data Science, Summer 2020
- Adrian Reyes, Data Analytics for anomaly detection using Tensor flow on Google cloud, Fall 2019
- Jarrett Early, Cloud based anomaly detection, Spring 2018, Faculty advisor for cybersecurity project
- Alfonso Delayney, McNair Scholar Program - Evaluating Gait Monitoring and Fall Management Technologies, Spring 2013, Mentor
- David Lewis, Project 1: An Empirical Evaluation of Similarity Coefficients, Project 2: Web Mining and Visualization, role: Research Advisor, Spring 2009, Research advisor and co-author
- Brian Lewis, MinDS: A two-phased approach to Mining for Document Similarity, Spring 2009, Research advisor and co-author
- Joy Pemberton, Classification for Spatial Neighborhood Discovery, Spring 2009, Research Advisor

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications (**Note:** Graduate Student Names are in listed *italics,* postdoctoral researchers and research faculty are listed in *italics~,* undergraduate students are listed in *italics**)

Book

1. Data Analytics for Cybersecurity, V. P. Janeja, Cambridge Press, April 2022

Peer-Reviewed Works

Refereed Journal Articles

2. C Mallinson, VP Janeja, C Evered, Z Khanjani, L Davis, NB Bhalli, Kifekachukwu Nwosu, A place for (socio) linguistics in audio deepfake detection and discernment: Opportunities for convergence and interdisciplinary collaboration, Language and Linguistics Compass 18 (5), e12527
3. *Walkikar, P., Shi, L., Tama, B.A.*~,Janeja V.P. Discovery of multi-domain spatiotemporal associations. Geoinformatica, Springer Nature Journal(2023). https://doi.org/10.1007/s10707-023-00506-4
4. *Zahra Khanjani*, *Gabrielle Watson**, Vandana P. Janeja: Audio deepfakes: A survey. Frontiers Big Data 5 (2022)
5. *Maisha, Nuzhat, Chhaya Kulkarni*, Narendra Pandala, Rose Zilberberg, Leasha Schaub, Leslie Neidert, Jacob Glaser, Jeremy Cannon, Vandana Janeja, and Erin B. Lavik. "PEGylated Polyester Nanoparticles Trigger Adverse Events in a Large Animal Model of Trauma and in Naïve Animals: Understanding Cytokine and Cellular Correlations with These Events." ACS nano 16, no. 7 (2022): 10566-10580.
6. *Prerna Mohod*, Vandana P. Janeja:Density-Based Spatial Anomalous Window Discovery. Int. J. Data Warehous. Min. 18(1): 1-23 (2022)
7. *Quader, F.,* & Janeja, V. P. (2021). Insights into Organizational Security Readiness: Lessons Learned from Cyber-Attack Case Studies. Journal of Cybersecurity and Privacy, 1(4), 638-659.
8. Vandana P. Janeja, Josephine M. Namayanja, Yelena Yesha, *Anuja Kench, Vasundhara Misal*: Discovering Similarity Across Heterogeneous Features: A Case Study of Clinico-Genomic Analysis. Int. J. Data Warehous. Min. 16(4): 63-83 (2020)
9. Emre Eftelioglu, Shashi Shekhar, James Hudson, Lucas Joppa, Chaitanya K. Baru, Vandana P. Janeja:Data Science for Earth: An Earth Day Report. SIGKDD Explor. 22(1): 4-7 (2020)
10. *James R. Clavin,* Sisi Duan, Haibin Zhang, Vandana P. Janeja, Karuna P. Joshi, Yelena Yesha, Lucy C. Erickson, Justin D. Li:Blockchains for Government: Use Cases and Challenges. Digit. Gov. Res. Pract. 1(3): 22:1-22:21 (2020)
11. *Henanksha Sainani, Josephine M. Namayanja, Guneeti Sharma, Vasundhara Misal,* Vandana P. Janeja: IP Reputation Scoring with Geo-Contextual Feature Augmentation. ACM Trans. Manag. Inf. Syst. 11(4): 26:1-26:29 (2020)
12. *Josephine M. Namayanja,* Vandana P. Janeja: Change Detection in Large Evolving Networks. IJDWM 15(2): 62-79 (2019)
13. V. P. Janeja, *J. Gholap, P. Walkikar,* Y. Yesha, N.I Rishe, M. A. Grasso: Collaborative data mining for clinical trial analytics. Intell. Data Anal. 22(3): 491-513 (2018)
14. *Y. Feng, C.K. Wong,* V.P. Janeja, R. Kuber, and H.M. Mentis, 2016. Comparison of tri-axial accelerometers step-count accuracy in slow walking conditions. Gait & Posture. *DOI: http://dx.doi.org/10.1016/j.gaitpost.2016.12.014,* In press
15. *R. Tambe*, G. Karabatis, V. P. Janeja, Context aware discovery in web data through anomaly detection. Int. J. Web Eng. Technol. 10(1): 3-30 (2015)
16. *L. Shi*, A. Gangopadhyay, and V. P. Janeja. "STenSr: Spatio-temporal tensor streams for anomaly detection and pattern discovery." Knowledge and Information Systems 43.2 (2015): 333-353.
17. *S. Chen*, V.P. Janeja, Human Perspective to Anomaly Detection for Cybersecurity, Journal of Intelligent Information Systems, 42(1): 133-153 (2014).
18. *M. McGuire*, V.P. Janeja, A. Gangopadhyay, Mining Trajectories of Moving Dynamic Spatio-Temporal Regions in Sensor Datasets, in Data Mining and Knowledge Discovery, 28(4): 961-1003 (2014)

19. *M. McGuire*, V.P. Janeja, A. Gangopadhyay, (in press). Mining sensor datasets with spatio-temporal neighborhoods. To appear in Journal of Spatial Information Science (JOSIS), http://www.josis.org/index.php/josis/article/view/94, 6(1): 1-42 (2013)
20. *S. Dey*, V. P. Janeja, and A. Gangopadhyay, Discovery of Temporal Neighborhoods through Discretization Methods, Intell. Data Anal. 18(4): 609-636 (2014)
21. V.P. Janeja and *R. Palanisamy*, Multi Domain Anomaly Detection in Spatial Datasets, Knowledge and Information Systems Journal, DOI: 10.1007/s10115-012-0534-5, 36(3): 749-788 (2013)
22. *L. Shi* and V. P. Janeja, Discovery of anomalous windows through a Robust nonparametric Multivariate Scan Statistic (RMSS), International Journal of Data Warehousing and Mining, 9(1), 28-55, January-March 2013
23. *A. Azari*, V.P. Janeja, A. Mohseni, Healthcare Data Mining: Predicting Hospital Length of Stay (PHLOS), Accepted to the International Journal of Knowledge Discovery in Bioinformatics (IJKDB), IJKDB 3.3 (2012): 44-66. Web. 6 Sep. 2013. doi:10.4018/jkdb.2012070103
24. J*. M. Namayanja*, V.P. Janeja, An Assessment of Patient Behavior Over Time–Periods: A Case Study of Managing Type 2 Diabetes Through Blood Glucose Readings and Insulin Doses, Journal of Medical Systems, DOI: 10.1007/s10916-012-9894-3, November 2012, Volume 36, pp 65-80
25. *J. M. Namayanja*, V. P. Janeja, Subspace Discovery for Disease Management: A Case Study in Metabolic Syndrome. IJCMAM 2(1): 38-59 (2011)
26. V. P. Janeja, A. Gangopadhyay, *S. H. Mohammadi, R. Palanisamy*: Discovery of anomalous spatio-temporal windows using discretized spatio-temporal scan statistics. Statistical Analysis and Data Mining 4(3): 276-300 (2011)
27. *L. Shi*, V.P. Janeja: Anomalous Window Discovery for Linear Intersecting Paths. IEEE Trans. Knowl. Data Eng. 23(12): 1857-1871 (2011)
28. *D. M. Lewis**, V. P. Janeja: An Empirical Evaluation of Similarity Coefficients for Binary Valued Data. IJDWM 7(2): 44-66 (2011)
29. V. P. Janeja, N. Adam, V. Atluri, J.S. Vaidya. Spatial neighborhood based anomaly detection in sensor datasets Data Mining and Knowledge Discovery, Data Mining and Knowledge Discovery, special issue on Outlier Detection, 20(2), March 2010, pp. 221-258, Springer.
30. G. Karabatis, Z. Chen, V. P. Janeja, *Tania Lobo, Monish Advani*, Mikael Lindvall, Raimund L. Feldmann, Using Semantic Networks and Context in Search for Relevant Software Engineering Artifacts, Journal on Data Semantics XIV, Lecture Notes in Computer Science, Volume 5880, 2009, pp 74-104
31. V.P. Janeja and V. Atluri, Random walks to identify anomalous free-form spatial scan windows. IEEE Transactions on Knowledge and Data Engineering (TKDE), Volume 20(10), 2008.
32. V.P. Janeja and V. Atluri, Spatial outlier detection in heterogeneous neighborhoods. Intelligent Data Analysis, Volume 13(1), 2008

Refereed Conference and Workshop Papers

33. *R. Putatunda,* S. Purushotham, V.P. Janeja, SEATTNET: UNET Enhanced with Squeeze-Excited Attention Gates for Ice-Calving Front Segmentation, 23rd International Conference on Machine Learning and Applications (ICMLA), 2024
34. *M. Devnath, Sudip Chakraborty~*, V.P. Janeja, CMAD: Advancing Understanding of Geospatial Clusters of Anomalous Melt Events in Sea Ice Extent, 32nd ACM

SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2024)

35. *Chhaya Kulkarni,* Nikki Prive, V. P. Janeja, Interactive Assessment of Variances of High-Resolution Model Features in Digital Twin Simulations, 32nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2024)
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Selected Presentations

- Speaker, Transdisciplinarity in Audio Deepfake Discernment with Expert-in-the-loop AI Models, Federal Information Integrity R&D Interagency Working Group (IIRD IWG), March 2024

- Speaker, Harnessing Data for Disaster Management : From Polar Regions to our Backyards, Focus Group on AI for Natural Disaster Management (FG-AI4NDM), UN environment, ITU, World Meteorological Organization, March 2024
- Speaker, Synergy of Sciences, UMBC Earth Day symposium, April 2023
- Panelist, Challenges in Faculty Hiring, ADSA Data Science Leadership Summit, May 2023
- Panelist, Climate Action Coalition - Information & Climate Action: A research agenda for iSchools, iConference, March 2023
- Panelist, Panel "Navigating Mid-Career Transitions", AAAS STPF Career Summit, Feb 13, 2023
- Panelist, Panel "The Future of AI for Spatiotemporal Big Data" at DeepSpatial Workshop at KDD 2022: https://www.cs.emory.edu/~sgu33/workshop/DeepSpatial2022/
- Panelist, Climate-smart computing panel at CRA Snowbird conference July 2022 (agenda:https://cra.org/events/2022-cra-conference-at-snowbird/#agenda): The biennial CRA
  Conference at Snowbird
- Panelist, Diversity perspectives in Data Science Education, 2021 National Workshop on Data Science Education, University of California, Berkeley
- Panelist, Undergraduate Data Science Education at Scale, 2020 National Workshop on Data Science Education, University of California, Berkeley
- Ethical Perspectives in Data Science, Workshop on Including Ethics in Data Science Pedagogy, June 2019
- V.P. Janeja, Data Heterogeneity: Bane or Boon for Data Science?, U.S. Department of Health and Human Services (HHS), Administration for Children and Families (ACF), Office of Refugee Resettlement (ORR)Unaccompanied Alien Children (UAC) program, March 2019.
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- V.P. Janeja, Invited Panelist, Data Analytics on IoT: Applications, Impacts and Vulnerabilities, 19th International Conference on. Distributed Computing and Networking (ICDCN 2018) 4-7 January 2018, Varanasi, India
- V.P. Janeja, An Undergraduate Education Perspective to Data Analytics for Cybersecurity, International Workshop on Analytics for Security in Cyber Physical Systems, 2018, Varanasi, India

- V.P. Janena, Panelist on COEIT junior faculty session on educational research, March, 2018
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- V.P. Janeja, Data Analytics for Heterogeneous datasets, Utah, 2015, CHMPR Board meeting
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SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

USM

- 2020-2021 USM COVID 19 Task Force on Research and Innovation: Preparing for the Next Pandemic, Pandemic Predicting and Tracking, Co-chair

University

(UMBC)

- 2024- Member, Dean's Search Committee
- 2023-2024 Mentoring Committee
- 2023-2024 UMBC Academic Analytics Taskforce, Research
- 2022-2023 UMBC BOLD: Campus presidential conversations
- 2020-2021 Member, Resource Allocation Steering Committee
- 2019- Member, Executive Committee, ADVANCE , UMBC
- 2018- 2020 Member, Academic Planning & Budget Committee (APB)
- 2018-2020 Member, Faculty Development Steering Committee
- 2018- CWIT, Internal Advisory Board

- 2014- CWIT Cyber Scholars Mentor
- 2016-2017 Member, Graduate Council
- 2016-2017 Member, Data Use and Management Committee
- 2014-2017 Reviewer, CWIT Cyber Scholars Program
- 2014 Reviewer, CWIT T-Site Program
- 2008 Panelist, Provost's Luncheon Series for new faculty

College

- 2023- Associate Dean for Research and Faculty Development, COEIT

Department

(IS Department, UMBC)

- 2019-2023 Chair, IS department, (Interim in 2019)
- 2023-2024 Member, Workload policy committee
- 2019- Member, Mentoring and Retention roundtable
- 2018-2019 Chair, Online Masters Program in IS (Graduate Program Director)
- 2018-2019 Member, Faculty Search Committee (Tenure track positions in AI/KM)
- 2016-2017 Member, Faculty Search Committee (Tenure track positions in Data Science)
- 2016-2017 Chair, Department Promotion and Tenure Committee, 3rd year contract renewal
- 2016-2017 Member, Merit review committee
- 2015-2016 Developing Undergraduate Certificate in Cyber Informatics, NSF SFS Grant
- 2015-2017 Member, Graduate Committee - Human Centered Computing MS and PhD
- 2015-2017 Chair, Library Committee
- 2014-2015 Member, Faculty Search Committee (Tenure track position in Data Science)
- 2013-2014 Member, Assessments Committee
- 2011-2015 Member, Library Committee
- 2012-2013 Member, Graduate Committee
- 2011-2012 Member, Research Committee
- 2011-2012 Member, IS Chair Search Committee
- 2010-2011 Member, Faculty Search Committee (Tenure track position in Data Mining)
- 2008-2009 Member, Student Recruitment committee

Selected Profession

- 2024, Communications of ACM, Special Issue on Sustainability and Computing, Organizer
- 2023, AAAS STPF Reviewer
- 2022, 2023, 2024 NSF Panel Reviewer
- 2021, National Academies of Sciences, Engineering, and Medicine (NASEM), Reviewer

- 2020, Panel organizer, Impact of COVID-19 on academia a perspective of Data Science, Data Science Leadership summit.
- 2020 Data Science Leadership Summit, October 12-14, Organizing committee member
- NSF Computing Innovation Fellows 2020, Reviewer (CRA)
- 2020, Department of Energy, Reviewer
- Nov-2019-present, Associate Editor, Frontiers in Big Data, Cybersecurity and Privacy
- Dec 2019, Workshop Co-chair, 26th IEEE International Conference on High Performance Computing, Data, and Analytics
- Reviewer for AAAS STP Fellowship applications, ASA, ACM, AMS, IMSMA, ASIAM 2019–2020 Science and Technology Policy Fellowship Review, Invited by ACM CEO to participate in this jointly funded fellowship application.
- 2018- 2021, IEEE International Conference on Data Mining (ICDM), Program Committee Member
- Reviewer for NCWIT Academic Alliance Undergraduate Research Mentoring Award-2019
- Jan 2019, Distributed Computing and Networking (ICDCN 2019), 2nd International Workshop on Analytics for Security in Cyber Physical Systems, Workshop co-organizer
- Dec 2018, Women in Data Science and High Performance Computing (WiDSHiPC18), Workshop chair
- Nov 2018, Workshop on Global Transformation with BlockChain: From Lab to App, Washington, D.C., Steering committee member
- 2018, Workshop on Land Grant Universities and Data Science, Raleigh, NC, Organizing Committee Member
- 2015-2018, ACM SIGSPATIAL International Workshop on analytics for Big Geospatial Data, program committee member.
- 2017-2018, Harnessing the Data Revolution Big Idea, National Science Foundation, Executive Secretary
- 2018, Common Model Infrastructure, ACM SIG Knowledge Discovery and Data Mining, Workshop Co-organizer
- 2018, Distributed Computing and Networking (ICDCN 2018) 4-7 January 2018, Varanasi, India, International Workshop on Analytics for Security in Cyber Physical Systems, Workshop co-organizer
- 2017, Data Science Corps workshop, Co-Chair
- 2014-16, National Science Foundation Panelist, CISE
- 2016-2021 ICDM Workshop on Spatial and Spatiotemporal Data Mining (SSTDM), program committee member.
- 2016, Transactions in GIS, Manuscript Reviewer
- 2015-2016, International Journal of Geographical Information Science, Manuscript Reviewer
- 2015-2016, Journal of Environmental Informatics, Manuscript Reviewer
- 2015-2016, iConf 2016 Dissertation award, Reviewer
- 2013, ACM Transactions on Knowledge Discovery from Data, Manuscript Reviewer
- 2014, Big Data Analytics in Healthcare (BigDAH2014) in conjunction with IEEE International Conference on Healthcare Informatics 2014 (ICHI 2014), program committee member.
- 2012-2013, Associate Editor of Journal of Intelligent Information Management (IIM)
- 2012,2013 BigSpatial-International Workshop on Analytics for Big Geospatial Data

- 2005- 2019, IEEE Transactions on Knowledge and Data Engineering, Manuscript Reviewer.
- 2009-12, the IEEE ICDM International Workshop on Spatial and Spatiotemporal Data Mining (SSTDM), program committee member.
- 2012, iConference , program committee member.
- 2007 – 2016, International Conference on Machine Learning and Applications, program committee member.
- 2012, Transactions in GIS, Manuscript Reviewer.
- 2011, 5th International Conference on Knowledge Science, Engineering and Management, Publicity Co-Chair
- 2009-11, ACM International Workshop on Knowledge Discovery from Sensor Data, program committee member.
- 2009-2011, International Conference on Database and Expert Systems Applications, program committee member.
- 2007-2013, Journal of Knowledge and Information Systems, Manuscript Reviewer.
- 2010-2011, Systems, Man and Cybernetics- Part B, Manuscript Reviewer
- 2011, Wiley Interdisciplinary Reviews (WIREs): Data Mining and Knowledge Discovery, Manuscript Reviewer.
- 2008, The 9th Annual International Conference on Digital Government Research, program committee member.
- 2008, International Journal of Mobile Learning and Organization Special Issue: Emerging Mobile Learning Environments for Industries and Pedagogies, Editorial Board Member
- 2005, IEEE Privacy and Security journal, IEEE Intelligence and Security informatics, IEEE Transactions on Mobile Computing, Manuscript Reviewer.

CURRICULUM VITAE

KAI SUN

EDUCATION

Ph.D.	2020	Syracuse University, Mechanical and Aerospace Engineering Focus: Operations Research
M.S.	2015	Syracuse University, Mechanical and Aerospace Engineering
B.E.	2013	Hefei University of Technology, Vehicle Engineering

Experience in Higher Education

2024 – Present	University of Maryland, Baltimore County (UMBC), Assistant Professor, Department of Information Systems
2023 – Present	University of Texas Health Science Center at San Antonio (UT Health SA), Adjunct Assistant Professor (0 FTE), Department of Anesthesiology
2020 – 2024	University of Texas at San Antonio (UTSA), Postdoctoral Fellow, Department of Management Science and Statistics

Experience in Other than Higher Education

2018 – 2018	UsPLM, Inc., Syracuse, NY. Research Engineer Intern: Development of digital twin for drone fleet management: web-based flight simulation and analysis in 3D virtual reality.
2016 – 2016	Filtertech, Inc., Manlius, NY. Research Engineer Intern: Development and customization of product lifecycle management (PLM) system with visual analytics tools.

Honors Received

2021	Poster Award Finalist. 2021 American Association of Clinical Directors (AACD) Preoperative Leadership Summit
2019	Summer Dissertation Fellowship. Department of Mechanical and Aerospace Engineering, Syracuse University, $4,000 as awardee.

Research Support and/or Fellowships

2016 – 2017	*Developing a Unified PLM Platform for Smart Manufacturing Systems, an Essential Tool for Cyber-manufacturing for Filtertech Inc.*, from New York State via CASE at Syracuse University. Grant total: $60,000, as key personnel.
2016 – 2017	*Development of Educational and Training Materials for Unmanned Aerial Systems (UAS)*, from New York State via Gryphon Sensors, LLC (now SRC, Inc.). Grant total: $13,000, as key personnel.
2016 – 2016	*Development of Smart PLM Platform for Filtertech, Inc.*, from New York State via SyracuseCoE. SyracuseCoE Industry Collaboration Summer Internship Award, $5,000, as co-PI.

Teaching

Courses Taught at UMBC

Sping 2025	IS 603 Decision Making Support Systems (GRAD)
Fall 2024	IS 603 Decision Making Support Systems (GRAD)

Courses Taught Outside of UMBC

Fall 2023	Resident Grand Rounds Lecture: *Equitable Anesthesiologist Scheduling under Demand Uncertainty: the Secret behind UH-OR Shift Assignments*. Department of Anesthesiology, UT Health SA
Fall 2021	Resident Grand Rounds Lecture: *What can you trust? AI risk in healthcare*. Department of Anesthesiology, UT Health SA

Designed Courses

Fall 2023	Workshop series on *Data Analytics with Python*. Alvarez College of Business, UTSA

Teaching Related Certificate Training

Fall 2024 – Present	2024-2026 Participant, Active Learning Inquiry Teaching (ALIT) Certificate Program. Faculty Development Center, UMBC

Guest Lectures

2021 - 2024	DA 6813 Data Analytics Applications (GRAD), Alvarez College of Business, UTSA
2021 – 2024	MS 4203 Business Analytics Applications (UGRAD), Alvarez College of Business, UTSA

Student Advising

Fall 2024 – Present	Academic Advisor for Business Technology Administration Program

Ph.D. Students

Nikolai Shchelkov, Starting Jan 2025, Committee Chair

Master's Students

Tienyu Hsu (at UTSA), Fall 2023, Fall 2024-Present, Co-advisor with Dr. Minghe Sun

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Peer-Reviewed Works

1. **Sun, K.**, Roy, A., Tobin, J. (2024). Artificial Intelligence and Machine Learning: Definition of Terms and Current Concepts for Critical Care Research. *Journal of Critical Care*, 82(2024), 154792. https://doi.org/10.1016/j.jcrc.2024.154792.
2. **Sun, K.**, Sun, M., Agrawal, D., Dravenstott, R., Rosinia, F., Roy, A. (2023). Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. *Production and Operations Management*, 32(11), 3699-3716. https://doi.org/10.1111/poms.14058.
3. **Sun, K.**, Li, Y., Roy, U. (2017). A PLM-based Data Analytics Approach for Improving Product Development Lead Time in an Engineer-to-order Manufacturing Firm. *Mathematical Modeling of Engineering Problems*, 4(2), 69–74. https://doi.org/10.18280/mmep.040201.

Non-Peer-Reviewed Works

1. **Sun, K.** (2020). An Algorithm Framework for the Exact Solution and Improved

Approximations of the Maximum Weighted Independent Set. (arXiv:2008.01961). arXiv. https://doi.org/10.48550/arXiv.2008.01961.

2. **Sun, K.** (2020). Solving Resource Allocation Problems Using the Method of Maximum Weighted Independent Set. (arXiv:2008.01960). arXiv. https://doi.org/10.48550/arXiv.2008.01960.

Presentations

Conference/Poster Presentations (Juried/Refereed)

1. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. INFORMS (The Institute for Operations Research and the Management Sciences) Annual Meeting, Seattle, Washington, USA. October 23rd, 2024.
2. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. INFORMS Annual Meeting, Phoenix, Arizona, USA. October 18th, 2023
3. **Kai Sun**, Minghe Sun, Deepak Agrawal, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. Podium Presentation, 9th annual San Antonio Military Health and Universities Research Forum (SURF), San Antonio, Texas, USA. June 15th, 2023
4. **Kai Sun**, Arkajyoti Roy, Ronald W Dravenstott, Frank A Rosinia. Optimal Physician Scheduling Solution Using the Method of Maximum Weighted Independent Set (MWIS). 33rd Annual Production and Operations Management Society (POMS) Conference, Orlando, Florida, USA. May 23rd, 2023
5. **Kai Sun**, Minghe Sun, Deepak Agrawal, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. INFORMS Annual Meeting, Indianapolis, Indiana, USA. October 16th, 2022
6. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Optimal Physician Scheduling Solution Using the Method of Maximum Weighted Independent Set (MWIS). 32nd Annual POMS Conference, online. April 22nd, 2022
7. **Kai Sun**, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Optimal and Equitable Staffing Solutions for Operating Room Scheduling. INFORMS Annual Meeting, online. October 27th, 2021
8. **Kai Sun**, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Optimal and Equitable Staffing Solutions for Operating Room Scheduling. 31st Annual POMS Conference, online. April 30th - May 5th, 2021
9. **Kai Sun**, Ronald W Dravenstott, Mark D Sabin, Arkajyoti Roy, Deepak Agrawal, Naveen K Mehra, Frank A Rosinia. An Integrated Optimal and Equitable Staffing Solution for Anesthesia Scheduling. American Association of Clinical Directors (AACD) Perioperative Leadership Summit, online. March 19th, 2021

Conference/Poster Presentations (Non-Juried/Refereed)

1. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. Los Datos Conference 2023, UTSA School of Data Science, San Antonio, Texas, USA. April 20th, 2023
2. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. 10th Annual San Antonio Postdoctoral Research Forum at UT Health SA, San Antonio, Texas, USA. September 20th, 2022
3. **Kai Sun**, Minghe Sun, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. Research Symposium at UT Health SA, San Antonio, Texas, USA. April 18th, 2022

Other Professional Presentations

1. Solving Process Planning and Scheduling Problems Using the Method of Maximum Weighted Independent Set. Research Seminar, Department of Information Systems

at UMBC, Baltimore, Maryland, USA. November 13th, 2024
2. **Kai Sun**, Minghe Sun, Deepak Agrawal, Ronald W Dravenstott, Frank A Rosinia, Arkajyoti Roy. Equitable Anesthesiologist Scheduling under Demand Uncertainty Using Multi-Objective Programming. Research Seminar, Department of Management Science and Statistics at UTSA, San Antonio, Texas, USA. April 22nd, 2022.
3. Utpal Roy, Yunpeng Li, **Kai Sun**. Aras Innovator in Engineering Education and Research. Invited Presentation. Aras Innovator Community Event (ACE) US, Premier PLM conference by Aras Innovator, Indianapolis, Indiana, USA. March 21st, 2018
4. **Kai Sun**, Yunpeng Li, Utpal Roy. PLM-Based Data Analytics Approach for Improving Product Development Lead Time in an Engineer-To-Order Manufacturing Firm. Syracuse NEXT Conference - The Event for Technology, Manufacturing, and Innovation, Syracuse, New York, USA. October 11th, 2016.

Creative Achievements

Project Proposals Works in Progress
1. Graph-Based Algorithms and Predict-Then-Optimize Approaches for Large-Scale Optimization Problems. In-progress.
2. Fair and Optimal Resource Management for Ambulatory Medical Centers Using Demand Predictions and Multi-Objective Optimization. In-progress.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Conference Session Chair

Session Chair, Data-driven Decision Making in Healthcare, INFORMS Annual Meeting, 2023

Journal Reviewer

Reviewer
• Health Care Management Science
Ad-hoc reviewer
• European Journal of Operational Research • INFORMS Journal on Computing

Professional

Member, 2021-2023, POMS
Member, INFORMS
Member, INFORMS Health Applications Society

CURRICULUM VITAE

LUJIE KAREN CHEN

EDUCATION

Ph.D	2020	Carnegie Mellon University, Information Systems
M.S.	2012	Carnegie Mellon University, Statistics
M.I.S.M	2004	Carnegie Mellon University, Information Systems
B.Eng.	1998	Shanghai Jiaotong University, P.R. China International Business and Computer Science

Experience in Higher Education

2020 – present	University of Maryland Baltimore County Assistant Professor Information Systems
2005 – 2014	Carnegie Mellon University Research Staff Auton Lab, Robotics Institute, School of Computer Science

Experience in Other than Higher Education

2001 – 2003	Coca-Cola China, Financial Analyst
1998 – 2001	Arthur Andresen, Financial Auditor

Honors/Award Received

2024	NSF CAREER Award
2024	The 2023 International Journal of Older People Nursing (IJOPN) Award for Outstanding Scholarly Contribution to Gerontological Nursing Research
2024	The 2024 Innovative Research on Aging Silver Award, Mather Institute
2024	CWIT Outstanding Research Partner Award (with Andrea Kleinsmith)
2023	Winner of DARPA AI tools for Adult Learning Competition (PI) (one of 32 teams selected from 250+ teams)
2023	UMBC McNair Scholars Program - Nominee for the Mentor of the Year Award
2022	2nd place winner GRD 2022 Climate Resilience AI Data Challenge (Co-leader)
2016-2020	Predoctoral Fellowship Program in Interdisciplinary Education Research (PIER) Institute of Education Sciences, US Department of Education
2019	Gold Snapshot Award, 48th Critical Care Congress
2018	Star Research Achievement Award, 47th Critical Care Congress
2017	Star Research Achievement Award, 46th Critical Care Congress
2016	Excellence in Teaching Assistance Award, Heinz College, Carnegie Mellon
2015	2nd place winner of Student Paper Competition

	American Medical Informatics Association Annual Symposium (AMIA)
2015	3rd place winner of " Best of Student Papers in Knowledge Discovery and Data Mining", KDDM Working Group of AMIA
2003-2004	W.W. Cooper Scholarship, Carnegie Mellon University

Research Support and/or Fellowships

2024.10 - 2027.9	$365,905.00, PI, NSF, Collaborative Research: IGE: Track1: Caselet: Deliberate Practice with Scalable Case-based Learning to Enhance Data Science Problem Solving Competency
2024.7 - 2029.6	$790,887, PI, NSF: CAREER: Teaching to Empower with Learning Analytics for College Students by College Students
2023.8 - 2026.7	$369,610, PI, NSF: Collaborative Research: RETTL: Story Studio: Coaching Data Storytelling at Scale
2023.9 - 2024.8	$50,000, PI, DARPA AI tools for Adult Learning Competition (Co-I: Shimei Pan, Vandana Jeneja and Patrica Ordóñez)
2023.8 - 2024.7	$29,124, Co-PI, NSF: Collaborative Research: RAPID: Integrating Culturally Relevant Project-based AI Learning into High School STEM Education
2022.10 - 2024.9	$294,726, Co-PI, NSF: BPC-DP: PeerSIST: Peer Support for IS Transfers (PI: Carolyn Seaman)
2024.1 - 2025.12	$20,500, PI, UMBC Hrabowski Innovation Fund, Data-Driven Student-Centered Health Communication and Promotion: Interdisciplinary Collaborative Problem-Solving and Peer-Learning for a Thriving Campus
2022.5 - 2023.4	$34,500, Co-PI, ATIP, Dysautonomia after Brain Injury (PI: Jamie Podell)
2022.5 - 2024.4	$49,740, PI, UMBC Sherman Center for Faculty Research Award
2021.7 – 2022.6	$19,169, PI, Academic Data Science Alliance (Co-I: Shimei Pan)
2021.6 - 2022.5	$40,000, PI, ATIP (Co-I: Lira Yoon and Kelly Doran)
2021.6 - 2021.8	$6,000, PI, UMBC Summer Research Faculty Fellowship (SURFF)
2022.1 - 2025.12	NSF HDR Institute: HARP- Harnessing Data and Model Revolution in the Polar (Education and Outreach co-lead)
2021.9 - 2023.8	$4,000, DoIT Learning Analytics Mini-Grant

Ph.D. Students

Name	Graduation	Role	Institute
Varun Mandalapu	2021.9	PhD Thesis Co-Advisor	UMBC
Shifali Sharma		PhD student (2021.6 -)	UMBC
Sancharee Chowdhury	Proposed	PhD student (2021.9 -)	UMBC
Xiangxiang Kong		PhD student (2022.9 -)	UMBC
Maryam Alomair		PhD student (co-advised with Shimei Pan 2021.9 -)	UMBC
Pronob Kumar Barman		PhD student (2022.1 -2022.7)	UMBC

Yetunde Okueso	PhD student (2024.1 -)	UMBC

Master's Students

Student Name	Advising Period	Project	Program
Pravalika Papasani	2024 Summer	AI/Data Storytelling	UMBC(CSEE)
Naren Sivakumar	2024 Summer -	AI/Data Storytelling	UMBC(CSEE)
Wihar Paladugula	2024 SP/Summer	Multimodal LA	UMBC (Data Science)
Megha Singh	2023 FA-current	Caselet Development	UMBC (CSEE)
Sai Irulu	2023 SP- current	PeerSIST LA	UMBC
Nisht Vyas	2023 Spring	PeerSIST learning analytics	UMBC(Data Science)
Kulin Patel	2023 Spring	Multimodal Attachment Behavior Analysis	UMBC
Priyal Shah	2023 Spring	*Design with Youth (HCC)	UMBC
Vaishnavi Atul Patil	2023 Spring	*Mental health wearable	UMBC
Sushruta Shetty	2022 Fall	Robot learning analytics	UMBC(Data Science)
Chris Hart	2022 Fall	Challenging Games	UMBC(HCC)
Rohan Salvi	2021.9 - 2022.5	Neuro Critical Data Analysis	UMBC
Charan Duggirala	2021.9 - 2022.5	Food Choice in Youth with VR	
		ATIP - wearable/stress in LTC	UMBC
Md Fourkanul Islam	2022.1 - 2023.5	Neuro Critical Data Analysis	UMBC
Atefeh Jebeli	2022.1 -9	Multimodal Attachment Behavior Analysis	UMBC
Lucky Verma	2022.1- 5	Food Choice in Youth with VR	UMBC (CSEE)
Stephen Rule	2022 Spring	*Agriculture AI	UMBC
Apurva Raje	2022 Spring	*Patient Edu Literature Review (with Tera Reynolds)	UMBC
Dharmendra Kanjariya	2021	*Knowledge Tracing	UMBC
Kirubel Tolosa	2021	*Food Choice in Youth with VR	UMBC

Vamshikrishna Kallem	2021	*Food Choice in Youth with VR	UMBC
Savani Sachin Shrotri	2021	*Multimodal Participatory Design	UMBC (HCC)
B.J. Robertson	2021.9 -2021.12	*Habits of Mind	UMBC (HCC)
Mounika Karuturi	2020 Fall	*AI and Pharmacy	UMBC

*Independent study students

Undergraduate Students

Ellen Jagne	2024 SP	Robot Learning	UMBC
Camilla Chombo Sam	2023 Fall-	Robot Learning	UMBC (CS)
Mahmoud Abdel-Halim (Data Science Scholar)	2023 Fall	Food VR	Psychology
Kidus Solomon	2023 Spring	Technology for student's social Connection	UMBC
Aditi Talwar	2022.9-2023.5	*UMBC Learning Analytics	UMBC
Safiatou Coulibaly (McNair Scholar)	2022.9-2023.8	UMBC Learning Analytics	UMBC
Khalyl Konkobo	2022 spring	UMBC Learning Analytics (Data Scholar)	UMBC
David Wang	2022 spring	Climate Science Data Science (Data Scholar)	Biology Ed
Sophia Papparotto (CSEE)	2022.1 - 2022.9	Attachment Behavior Analysis	UMBC
Beamlak Bekele (CSEE, CWIT scholar)	2022 spring	*Patient Edu Literature Review (with Tera Reynolds)	UMBC
Anna Nguyen	2021 summer	Educational Data Mining EdNet	UMBC
Amy Sui	2021 summer	Food Choice in Youth with VR	UMBC
Mina Park	2021 spring	Knowledge Tracing	UMBC
Christopher Dottellis	2021 -	AI-assisted animation	UMBC (Math)

*Independent study students

High School Student

Kevin Hwang (co-advised with Fow-Sen Choa, CSEE)	2023.6-2024.	LLM-generated Question	Centennial High School

Songling N.	2023.3-2023.8	Learning analytics	Seattle High School
Katherin G.	2023.3-2023.8	Multimodal attachment	Roland Park Country School
Racheal W.	2023. 3 -	Data arts and youth wellbeing	Riverhill High School
Viraj J.	2022.9-	fNIRS in VR environment	Centennial High School
Christina L.	2022.9-2023.5	Neuro-critical care informatics	Riverhill High School
Jacob C.	2022.3-2022.8	Distraction Analytics	Marriotts Ridge High School
Shyla B.	2020.9 - 2021.9	Educational Data Mining (mentor)	
		Thomas Jefferson High School for Science and Technology	

*Only advising activities at UMBC are included, unless otherwise noted, all students are from information system departments.

Publications

** denotes mentored students*

Peer-Reviewed Journal Articles

1. Jebeli, A*., **Chen, L.K**., Guerrerio, K., Papparotto, S., Berlin, L., & Jones Harden, B. (2024). Quantifying the Quality of Parent-Child Interaction Through Machine-Learning Based Audio and Video Analysis: Towards a Vision of AI-assisted Coaching Support for Social Workers. ACM Journal of Computing and Sustainable Societies, 2(1), Article 6, 21 pages.

2. Doran, K., Witmer, S., Yoon, K. L., Fischer, E. R., Ebangwese, A., Sharma*, S., Duggirala*, G. S. C., & **Chen, L. K.** (2024). Gauging the stress of long-term care nursing assistants using ecological momentary assessment, wearable sensors and end of day reconstruction. *International Journal of Older People Nursing*, 19, e12592.

3. Salasky VR, Chowdhury SH*, **Chen LK**, Almeida E, Kong X*, Armahizer M, Pajoumand M, Schrank GM, Rabinowitz RP, Schwartzbauer G, Hu P, Badjatia N, Podell JE. Overlapping Physiologic Signs of Sepsis and Paroxysmal Sympathetic Hyperactivity After Traumatic Brain Injury: Exploring A Clinical Conundrum. Neurocrit Care. 2023 Oct 26. doi: 10.1007/s12028-023-01862-7. Epub ahead of print. PMID: 37884690.

4. **Chen, L.K.**., Gillan, J., Decker, M., Eteffa, E., Marzan, A., Thai, J*., & Jewett, S. (2023). Embedding Digital Data Storytelling in Introductory Data Science Course: An Inter-Institutional Transdisciplinary Pilot Study. *Journal of Problem Based Learning in Higher Education*, *11*(2), 126–152.

5. Ferguson, R. ., Khosravi, H., Kovanović, V., Viberg, O., Aggarwal, A., Brinkhuis, M., Buckingham Shum, S., **Chen, L. K.**, Drachsler, H., Guerrero, V. A., Hanses, M., Hayward, C., Hicks, B., Jivet, I., Kitto, K., Kizilcec, R., Lodge, J. M., Manly, C. A., Matz, R. L., Meaney, M. J., Ochoa, X., Schuetze, B. A., Spruit, M., van Haastrecht, M., van Leeuwen, A., van Rijn, L., Tsai, Y.-S., Weidlich, J., Williamson, K., & Yan, V. X. (2023). Aligning the Goals of Learning Analytics with its Research Scholarship: An Open Peer Commentary Approach. *Journal of Learning Analytics*, *10*(2), 14-50.

6. Sarkar S, Gaur M, **Chen L.K**., Garg M, Srivastava B. A review of the explainability and safety of conversational agents for mental health to identify avenues for improvement. Front Artif Intell. 2023 Oct 12;6:1229805. doi: 10.3389/frai.2023.1229805. PMID: 37899961; PMCID: PMC10601652.

7. Podell, J., Pergakis, M., Yang, S., Felix, R., Parikh, G., Chen, H., **Chen, L.K.**, Miller, C., Hu, P. and Badjatia, N., 2022. Leveraging Continuous Vital Sign Measurements for Real-Time Assessment of Autonomic Nervous System Dysfunction After Brain Injury: A Narrative Review of Current and Future Applications. Neurocritical Care, pp.1-14.

8. **Chen, L**.K., Ramsey, J. and Dubrawski, A., 2021. Affect, Support, and Personal Factors: Multimodal Causal Models of One-on-one Coaching. Journal of Educational Data Mining, 13(3), pp.36-68.

9. Yoon JH, Mu L, **Chen L**, Dubrawski A, Hravnak M, Pinsky MR, Clermont G. Predicting tachycardia as a surrogate for instability in the intensive care unit. Journal of clinical monitoring and computing. 2019 Feb 14:1-3.

10. Bose E, **Chen L**, Clermont G, Dubrawski A, Pinsky MR, Ren D, Hoffman LA, Hravnak M. Risk for cardiorespiratory instability following transfer to a monitored step-down unit. Respiratory care. 2017 Apr 1;62(4):415-22.

11. **Chen L**, Ogundele, O., Clermont, G., Hravnak, M., Pinsky, M.R. and Dubrawski, A.W., 2017. Dynamic and personalized risk forecast in step-down units. Implications for monitoring paradigms. Annals of the American Thoracic Society, 14(3), pp.384-391.

12. **Chen L**, Dubrawski, A., Wang, D., Fiterau, M., Guillame-Bert, M., Bose, E., Kaynar, A.M., Wallace, D.J., Guttendorf, J., Clermont, G. and Pinsky, M.R., 2016. Using supervised machine learning to classify real alerts and artifact in online multi-signal vital sign monitoring data. Critical care medicine, 44(7), p.e456

13. Hravnak M, **Chen L**, Dubrawski, A., Bose, E., Clermont, G. and Pinsky, M.R., 2016. Real alerts and artifact classification in archived multi-signal vital sign monitoring data: implications for mining big data. Journal of clinical monitoring and computing, 30(6), pp.875-888.

14. Hravnak M, **Chen L**, Dubrawski, A., Bose, E. and Pinsky, M.R., 2015. Temporal distribution of instability events in continuously monitored step-down unit patients: implications for rapid response systems. Resuscitation, 89, pp.99-105.

15. Dubrawski A, Ostlund J, **Chen L**, Computationally efficient scoring of activity using demographics and connectivity of entities. Artur Dubrawski, John K. Ostlund, Lujie Chen, Andrew W. Moore. Information Technology and Management 04/2012; 11(2):77-89.

Peer Reviewed Conference Proceedings

1. Javiya, P.A., Kleinsmith, A., **Chen, L.K**., & Fritz, J. (2024). Parsing Post-Deployment Students' Feedback: Towards a Student-Centered Intelligent Monitoring System to Support Self-Regulated Learning. Proceedings of the 25th International Conference on Artificial Intelligence in Education (AIED 2024), July 2024, Recife, Brazil.

2. Anthraper, N., Javiya, P., Iluru, S*., **Chen, L.K**., & Kleinsmith, A. (2024). PeerConnect: Co-Designing a Peer-Mentoring Support System with Computing Transfer Students. In Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '24). Association for Computing Machinery, New York, NY, USA, Article 262, 1–7.

3. Hwang, K*., Wang, K., Alomair, M*., Choa, F.-S. & **Chen L.K**. (2024). Towards Automated Multiple Choice Question Generation and Evaluation: Aligning with Bloom's Taxonomy. Proceedings of the 25th International Conference on Artificial Intelligence in Education (AIED 2024), July 2024, Recife, Brazil.

4. Hwang, K*., Challagundla, S., Alomair*, M., Janssen, D., Morton, K., **Chen, L.K**.., & Choa, F.-S. (2024). Towards the acceleration of human learning capabilities through AI-assisted knowledge-tree building. In SPIE Defense Commercial Sensing, Paper 13036-9, April 21-25, National Harbor, Maryland, USA.

5. Janeja, V.P., Sanchez, M., Khoo, Y.X., Vacano, C.V., & **Chen, L.K.** (2024). Adopting Foundational Data Science Curriculum with Diverse Institutional Contexts. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE 2024), Volume 1. Association for Computing Machinery, New York, NY, USA, 576–582.

6. Kong, X*., Chowdhury, S.H*., Islam, M.F*., Podell, J.E., Hu, P., Badjatia, N., & **Chen, L.K**. (2023). Towards Continuous and Efficient Detection of Paroxysmal Sympathetic Hyperactivity (PSH) Episodes among Traumatic Brain Injury Patients: Exploring Human-in-the-loop Anomaly Detection Approach. AMIA Annual Symposium, November 2023.

7. Alomair, M*., Pan, S., **Chen L.K.** The Role of Cognition and Metacognition in Data Science Problem Solving: Insights from a Field Study. Companion Proceedings 13th International Conference on Learning Analytics & Knowledge (LAK23). March 2023

8. **Chen L.K.** Gong J, Yarnall L, Fritz J. Data Storytelling in Learning Analytics, Companion Proceedings 13th International Conference on Learning Analytics & Knowledge (LAK23). March 2023

9. Choi J, Lipsmeyer L, Bigenho C, **Chen L**. Distraction Analytics: Understanding Students' Distraction Patterns during Digital Learning. Companion Proceedings 13th International Conference on Learning Analytics & Knowledge (LAK23)

10. **Chen L**. Gerritsen D. Building Interpretable Descriptors for Student Posture Analysis in a Physical Classroom. In Proceedings of the 14th International Conference on Educational Data Mining (EDM). June 2021.

11. Mandalapu, V., **Chen, L**, Chen, Z, Gong, J., Student-centric Model of Login Patterns: A Case Study with Learning Management Systems. In Proceedings of the 14th International Conference on Educational Data Mining (EDM). June 2021.

12. **Chen L.** Timing of Support in One-on-one Math Problem Solving Coaching: A Survival Analysis Approach with Multimodal Data. In Proceedings of the 11th International Learning Analytics and Knowledge (LAK) Conference. March 2021.

13. Goswami M, **Chen, L**, Dubrawski A. Discriminating Cognitive Disequilibrium and Flow in Problem Solving: A Semi-supervised Approach Using Involuntary Dynamic Behavioral Signals. In AAAI 2020 Special Track on AI for Social Impact.

14. **Chen, L**, Gjekmarkaj E, Dubrawski A. Parent as a Companion for Solving Challenging Math Problems: Insights from Multi-modal Observational Data. June 2019, In Proceedings of the 12th International Conference on Educational Data Mining (EDM).

15. **Chen, L**. Supporting Math Problem Solving Coaching for Young Students: A Case for Weak Learning Companion. In Proceedings of the 10th International Conference on Artificial Intelligence in Education (AIED). Young Researcher Track paper. June 2018.

16. **Chen L,** Dubrawski A. Accelerated apprenticeship: Teaching data science problem solving skills at scale. In Proceedings of the Fifth Annual ACM Conference on Learning at Scale 2018 Jun 26 (pp. 1-4).

17. **Chen L**, Dubrawski A. Learning from Learning Curves: Discovery of Interpretable Learning Trajectory Groups. In Proceedings of the 7th International Learning Analytics and Knowledge (LAK) Conference. March 2017.

18. **Chen L**, Li X, Xia Z, Song Z, Morency LP, Dubrawski A. Riding an emotional roller-coaster: A multimodal study of young child's math problem solving activities. June 2016, In Proceedings of the 9th International Conference on Educational Data Mining (EDM). (*Exemplary paper nomination)*

19. **Chen L**, Clermont G, Hravnak M, Pinsky MR, Dubrawski A. A Framework for Visual Tracking of Risk and its Drivers in Monitoring Patients Susceptible for Cardiorespiratory Instability. November 2016, The American Medical Informatics Association Annual Symposium.

20. **Chen L**, Dubrawski A, Clermont G, Hravnak M, Pinsky MR. Modelling Risk of Cardio-Respiratory Instability as a Heterogeneous Process. November 2015, The American Medical Informatics Association Annual Symposium. *(2nd place student paper competition award, 3rd place for "Best of Student Papers in Knowledge Discovery and Data Mining" by Knowledge Discovery and Data Mining (KDDM) Working Group)*

21. Dubrawski A, Sarkar P, **Chen L**. Trade-offs between Agility and Reliability of Predictions in Dynamic Social Networks Used to Model Risk of Microbial Contamination of Food. International Conference on Advances in Social Network Analysis and Mining, ASONAM, Athens, Greece, 20-22 July 2009 *(Best paper award)*

Peer-Reviewed Workshop Paper

1. Hwang, K*., Challagundla, S., Alomair, M*., **Chen, L.K**., & Choa, F.-S. (2023). Towards AI-Assisted Multiple Choice Question Generation and Quality Evaluation at Scale: Aligning with Bloom's Taxonomy. In NeurIPS Workshop for Generative AI for Education (GAIED): Advances, Opportunities, and Challenges, New Orleans, USA.

2. Sharma S*, **Chen L.K**. Yoon L, Doran K, Duggirala C*, Fischer E, Witmer S, Ebangwese A. Measuring and Understanding Work-related Stress using Wearable and Ecological Momentary Assessment: Insights from a Pilot Study with Long-term Care Workers. April 2023. The ACM Conference on Human Factors in Computing Systems (CHI) 2023, Workgroup on Interactive Systems in Healthcare (WISH).

3. **Chen L.K**., Shah P, Prabhu K, Daughrity L, Shetty S, Lopez Delgado M, Hamidi F, Godwin K, Lipsmeyer L. ABii at School: Some Initial Findings from a Long-term In-school Field Study with a Commercial Robot-assisted Learning System. March 2023, The ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2023, Robot for Learning Workshop

4. Mandalapu, V*., Gong, J., & **Chen, L**. Do we need to go Deep? Knowledge Tracing with Big Data. AAAI Workshop on AI Education, 2021

5. **Chen L**, Admoni H, Dubrawski A. Toward A Companion Robot Fostering Perseverance in Math - A Pilot Study. March 2018, Human-Robot Interaction 2018, Robot for Learning Workshop

Peer-Reviewed Poster presentation

1. **Chen, L.K**., & Thai, J.* (2024). Assessment-via-Teaching: Exploring an Alternative Assessment Strategy in Undergraduate Introductory Data Science Course. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE 2024), Volume 2. Association for Computing Machinery, New York, NY, USA, 1598–1599.

2. Alomair, M*., Pan, S., **Chen L.K.** Modeling Metacognitive and Cognitive Processes in Data Science Problem Solving, In Proceedings of the 37th of AAAI Conference on Artificial Intelligence, 2023. Washington DC

3. Chowdhury S*, Podell, J, Hu P, Badjatia N, **Chen L,** Temporal Structure of Daily Paroxysmal Sympathetic Hyperactivity Assessment Measure (PSH-AM) among Neurocritical Patients with Traumatic Brain Injury, The American Medical Informatics Association Annual Symposium, 2022

4. Salvi R*, Islam F, Chowdhury* S, Podell, J, Hu P, Badjatia N, **Chen L,** Nowcasting PSH-AM: Towards Real-time Assessment of Paroxysmal Sympathetic Hyperactivity using Continuous Vital Sign Measurements in Neurocritical Units, The American Medical Informatics Association Annual Symposium 2022.

Presentations

Conference/Poster Presentation (Juried/Refereed) - selected

1. Chowdhury S, Podell, J. Hu, P, Badjatia, N., **Chen, L.** Heterogeneous Physiological Trends and their Implications for diagnosis of Paroxysmal Sympathetic Hyperactivity (PSH) among Traumatic Brain Injury Patients, National Capital Area TBI Research Symposium, 2023.

2. **Chen L**, Dubrawski A, Pellathy T, J. Yoon, Clermont G, Pinsky MR, Hravnak M. Artificial Intelligence Assists Junior Clinicians in Assessing Risk of Severe Cardio-respiratory Instability in Monitored Patients. Intensive Care Medicine Experimental. 2019.

3. **Chen L**, Clermont G, Pellathy T, Wertz A, Yoon J, Pinsky MR, Dubrawski A, Hravnak M. Stratifying Severity of Instability in Continuously Monitored Patients. Critical Care Medicine. 2019 . *(Gold Snapshot Award SCCM 2019)*

4. **Chen L**, Dubrawski A, Clermont G, Pellathy T, Wertz A, Pinsky MR, Hravnak M. Model Based Estimation of Instability Severity Level in Continuously Monitored Patients. Intensive Care Medicine Experimental. 2018 6(suppl 2):59

5. Wang X, **Chen L**, Hravnak M, Clermont G, Pinsky MR, Dubrawski A. Utility of Anti-hypertension Prescription Orders in Predicting Future Hypertensive Instability Events. The American Medical Informatics Association Annual Symposium, Washington, DC, November 4-8, 2017

6. **Chen L,** Clermont G, Hravnak M, Pinsky MR. Dubrawski A, . Personalized Cardiorespiratory Instability Risk Evolution Among Continuously Monitored Patients. Critical Care Medicine. 2017.

7. Hravnak M, **Chen L,** Dubrawski A, Clermont G, Pinsky MR. Machine learning can pre-identify patients at risk for cardiorespiratory instability before a medical emergency team call. Critical Care Medicine. 2017. *(Star Research Presentation)*

8. **Chen L**, Hravnak M, Clermont G, Pinsky MR, Dubrawski A. Cardiorespiratory instability risk escalation patterns: an association study with risk factors and length of stay. Intensive Care Medicine. 2016.

9. **Chen L**, Dubrawski A, Clermont G, Hravnak M, Pinsky MR . Predicting risk progression trajectory for Cardiorespiratory Instability in continuously monitored Step-down Unit patients. Congress of Critical Care Medicine. 2016.

10. **Hravnak** M, **Chen L**, Dubrawski A, Clermont G, Pinsky MR. Machine Learning Can Reduce Rate of Monitor Alarms. Critical Care. 2016.

11. **Chen L**, Dubrawski A, Hravnak M, Clermont G, Pinsky MR. Predicting Cardiorespiratory Instability risk trajectory groups in continuously monitored patients. Congress of Critical Care Medicine. 2016.

12. Hravnak M, **Chen L**, Dubrawski A, Clermont G, Pinsky MR. Cardiorespiratory instability alert subtypes in monitored step-down unit patients have low entropy. Congress of Critical Care Medicine. 2016.

13. **Chen L,** Dubrawski A, Hravnak M, Clermont G, Pinsky MR. Forecasting cardio-respiratory instability in monitored patients: A machine learning approach. Congress of Critical Care Medicine. 2015.

14. Hravnak M, **Chen L**, Dubrawski A, Wang D, Bose E, Clermont G, Pinsky MR. Random Forest machine learning models separate vital sign events as real or artifact in continuous monitoring data. Critical Care Medicine. 2015.

Invited Professional Presentations (Non-Juried/Refereed)

1. The GPT Dilemma:The Pros, Cons and Impacts on Learning, AI, Privacy, and Ethics Symposium, UMBC April 15, 2024
2. Multimodal Machine Learning and Analytics for Characterizing Parent-Child Interactions: Applications in Education and Social Works ,Machine Learning seminar at UMBC math/stat department, March 15, 2024
3. Invited Panelist at the DARPA AI Tool Competition 2024 launch webinar January 29,2024
4. Augmenting Human Perceptual and Reasoning Capabilities: From Healthcare to Education, Uniformed Services University of the Health Sciences (USUHS) Big Data/ML Interest Group, February 2021
5. Distraction Analytics, Math Department at Anne Arundel Community College, December 2022
6. TEaching to EMpower (TEEM): Towards Learning Analytics for Students by Students, UMBC Learning Analytics Community, September 2022

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Department

1. Graduate Committee, 2023-2024
2. Undergraduate Committee. 2021-2022,2022-2023,2023-2024
3. Library Liaison. 2022-2023
4. Merit review committee. Summer 2023
5. Tenure Track Faculty Search Committee. 2021-2022
6. Launch Committee member (for Tera Reynolds). 2021-2022
7. Comprehensive Exam Committee member
    - Fall 2021 & Spring 2022 (Antonios Xenakis)

- Spring 2022 & Fall 2022 & Spring 2023 (Indrajeet Ghosh)
- Fall 2022 (M Maughan, Saydeh Karabatis)
- Spring 2023 (Homayra Alam)
- Fall 2023 (Guy-Alain Aurelien, Nadeem Ahmed, Zahid Hassan Tushar,Azim Khan)
- Spring 2024 (Fang Liu)

8. Mentored a UMBC student entrepreneurial team ("Strive"), Finalist in IBM Mental Health Challenge; First Prize in Idea Competition at UMBC, This team includes IS undergraduate students Will Remik, Yvann Tientcheu, Olivia Docal and IS master student Kirubel Tolosa. Fall 2020.
9. Judge for IS Research Poster, Spring 2021
10. Representing IS during the admitted student event, Spring 2021

Service to the University/College

1. Presenter at AI, Privacy, and Ethics Symposium, UMBC Library, April 15, 2024
2. Panelist at UMBC FDC seminar on Delicate Practice March 5,2024
3. Panelist at UMBC FDC seminar on Reflection on Reflection Practice, April 2022
4. Instructor and panelist on research for Computing & Engineering Transfer Institute, Summer 2022,2023
5. Co-founder of Center for Robotics and Intelligent Interaction (CRII), Summer 2022-Fall 2022
6. Volunteer mentor for UMBC First Generation Network, Fall 2020 -
7. Volunteer mentor for McNair Scholars (Mei Liu), Spring 2021 - Fall 2021
8. Volunteer mentor for McNair Scholar (Cayla Alvarez), Spring 2022 -
9. Volunteer mentor for CWIT scholar (Toni-Ann Pearson), Spring 2022 - Fall 2022
10. START funding review committee, Spring 2024
11. COEIT award selection committee. Spring 2023, Spring 2024
12. COEIT equipment award selection committee, Spring 2024
13. COEIT Transfer seminar. Summer 2023
14. Mentor for STARS Ignite Program. Spring 2023

Service to the Profession

Program Committee

1. Lead organizer of Data Storytelling Workshop at SIGCSE 2024
2. Co-organizer of Data Storytelling Workshop at LAK 2024
3. Program committee member at LAK 2023,2024
4. Lead organizer of Data Storytelling Workshop at LAK 2023
5. AIMA4EDU workshop (AI-based Multimodal Analytics for Understanding Human Learning) in IJCAI 2019
6. Area Chair for Machine Learning for Healthcare 2022 and 2023 at NeuIPS

Reviewer

1. ICLR 2024
2. SIGCSE 2024
3. LAK 2024
4. CHI2024
5. Book chapter review for Witten et al: Data Mining 5e, 2024
6. Journal of Learning Analytics 2024
7. Frontier in Big Data 2023
8. ICML meta-reviewer 2022
9. International Journal of Child-Computer Interaction 2022
10. Transactions on Learning Technologies (Journal), 2021
11. Physiological Measurement (Journal), 2021
12. ACM COMPASS 2021
13. Machine Learning for Healthcare workshop at NeurIPS 2017, 2018, 2019, 2020
14. Journal of Neurosurgical Anesthesiology, 2018
15. Journal of Critical Care, 2017
16. Journal Medical Internet Research, 2017

17. AMIA conference, 2016

Grant Review Panelist

1. NSF SBE panel 2024
2. NSF CISE/EDU panel 2024
3. NSF SaTC- EDU panel Fall 2022 (Invited, does not attend due to time conflict)
4. NSF DRK-12 2023
5. NSF Smart and Connected Health 2023
6. NSF HCC Small 2023
7. NSF CSSI program 2023 (Ad Hoc)

Others

1. AERA - Computer and Internet Applications In Education SIG (SIG #022) - treasurer, May 2024 - current
2. Academic Data Science Alliance, Career Development Network Steering Committee member, May 2022-May 2024

Service to the Community

Outreach Services

1. National Society of Black Engineer, Volunteer Coach for Mathcounts Team, Fall 2023 - current
2. Lakeland Elementary/Middle School, Achievement Night, April 2023
3. Co-lead the data challenge team to participate in the GRD 2022 Climate Resilience AI Data Challenge (won 2nd place), in collaboration with faculty and students from the University of West Indies - Five Island Campus, Spring 2022
4. Executive Committee Member, Howard County Public School System (HCPSS) Mathematics Advisory Committee, Fall 2021 -
5. Executive Committee Member, River Hill High School Parent & Teacher Association, Fall 2021 - Summer 2022
6. Poly Girls Code, Baltimore Polytechnic Institute Guest Speaker, Spring 2022
7. Volunteer tutor for schoolhouse.org, 2021 -
8. Book Discussion leader (Mathematics for Human Flourishing) on schoolhouse.org, Fall 2021 - Spring 2022
9. Mentor for Thread (a non-profit organization in Baltimore serving low-performing youth), 2021 -
10. Mentor for UMD Data Challenge, Spring 2021, Spring 2022
11. Mentor for MIT Hacking for Racism in Healthcare, Fall 2020
12. Mentor for NeurIPS MLHC reviewers, Fall 2020
13. Category Judge (Math) for Intel International Science and Engineering Fair, 2018
14. Volunteer Judge for Covestro Pittsburgh Regional Science& Engineering Fair, 2017
15. Volunteer Judge for Science Fair at Pittsburgh Science & Technology Academy, 2017
16. Volunteer Instructor for data science module of Playtupus LLC Summer Camp, 2016
17. Volunteer for Carnegie Mellon Computer Science Roadshow at Carson Middle School, 2016
18. Volunteer Maker Fair Pittsburgh, 2015
19. Volunteer Instructor for Scratch programming, Winchester Thurston, Pittsburgh PA, 2014-2015
20. Volunteer Instructor for Adventures in Computing workshop at Pittsburgh Science & Technology Academy, 2013-2014
21. Volunteer for TechBridgeWorld at Carnegie Mellon University, 2005-2008
22. Instructor for TechGirl's Night(teaching computer technology to middle school girls), 2005

Mentoring

1. Mentor for high school student Kevin Hwang on LLM-question generation project, Summer-Fall 2023
2. Mentor for high school student Racheal W on data art project, Spring 2023- current
3. Mentor for high school student Songling N on learning analytics, Summer 2023
4. Mentor for high school student Christine L on neural critical care informatics, Fall 2022-Spring 2023

5. Mentor for high school student Viraj J on VR analytics, Spring -Summer 2023
6. Mentor for mentoring program at the Academic Data Science Alliance, Career Development Network, April 1, 2023 - January 31, 2024 (mentee: OLUSHOLA SOYOYE, PhD student from University of Delaware).
7. Organized training sessions for 6 high school students on data science and machine learning topics, Summer of 2022
8. Mentor for Jacob C, a high school student from Howard County public school on learning analytics project, Spring & Summer 2022
9. Mentor for Adhi T, middle school student on Pittsburgh science fair project, Spring 2019
10. Mentored a middle school student robotics team that participated in the First Lego League Robotics Competition and won first place overall categories, Fall 2018
11. Mentored a middle school student robotics team that participated in the school robot competition at World Robot Summit in Tokyo, Japan, Fall of 2018
12. Mentor for Jacob D, a high school student from Winchester Thurston Senior on medical informatics project, Summer 2017
13. Mentor for AMIA High School Scholar Program, 2015

TEACHING/FACULTY DEVELOPMENT

Professional Development Outside UMBC

1. NSF LEVEL UP Regional Workshops on Inclusion in Undergraduate Computing (August 7-8, 2023), Washington D.C.
2. Duke University Cultural Competence in Computing (3C) Fellows Program, May 2023 - current, online

Faculty Learning Community

3. Faculty Learning Community (co-lead) 2023-2024, AI in Education
4. Faculty Learning Community 2021 - 2022 & 2022-2023, Transfer Student Success
5. Faculty Learning Community 2022 - 2023, Teaching Creativity
6. COIET Social Responsibility in Technology FLC, Fall 2022; Symposium Spring 2023

Poster presentation at the UMBC Seventh Annual Provost's Teaching & Learning Symposium 2023

1. Learning and Assess by Teaching: An Ungrading Adventure in Introductory Data Science Course. **Lujie Karen Chen**
2. Caselets: Improving Data Science Problem Solving at Scale. **Lujie Karen Chen**, Shimei Pan, Maryam Alomair
3. Embedding Digital Data Storytelling in Introductory Data Science Course: An Inter-institutional Trans-disciplinary Pilot. **Lujie Karen Chen**, Sarah Jewett, Jamie Gillan, Matthew Decker, Egan Eteffa, Anjelica Marzan, Justin Thai
4. Fostering Pedagogies to Support Transfer Students. Mark Berczynski (CSEE), **Lujie Karen Chen**, Sarah Jewett (Provost), Nancy Kusmaul (Social Work), and Sarah Leupen (Biological Sciences)

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EDUCATION

DHA Central Michigan University December 2019

MGA University of Maryland-University College, Healthcare Administration May 1994

BSN University of Rochester May 1984

HONORS AND AWARDS

Fellow, American College of Healthcare Executives 2019

RESEARCH EXPERIENCE

Dissertation, "**Econometric Impacts of Accountable Care Organizations on Acute Care Hospitalization Revenue"**
Central Michigan University, Mount Pleasant, MI 2019
Committee: Nailya Delellis, Ph.D (chair)
John Beckett, MD
John Glaser, Ph.D

- Evaluated the revenue impacts of Accountable Care Organizations (ACOs) on acute hospital revenue via a time-series analysis
- Utilized multiple forecasting models to determine accuracy

TEACHING EXPERIENCE

University of Maryland-Baltimore County, Catonsville, MD August 2023 to present
Lecturer and Assistant Graduate Program Director, MPS Health Information Technology

- Lecturer HIT 670: Health Informatics Capstone. The Capstone project allows graduate students to conduct supervised research and/or project activities within the Health Informatics domain as the culmination of their academic experience. Participation in this class exceeded this faculty's contractual first-year teaching load. Provided additional academic rigor by reinforcing APA publication standards and PRISMA methodology for literature review and incorporating an opportunity for final student presentation across all sections. Scheduled to mentor new faculty in Spring 2024.
- Lecturer HIT 674: Process & Quality Improvement with Health IT. A graduate course providing an overview of healthcare quality and process measurement with a focus on the expanding role of Health IT. Revised the syllabus to align with a new

edition of the textbook, added quality examples from outside industries to provide comparative platforms, and developed quizzes, exams, and homework. Introduced students to visiting instructors with current industry expertise.

Graduate Student Advisor

Served as an advisor to approximately 125 graduate students, providing guidance and input from the review of initial applications, coordinating admissions and registration with DPS staff, and providing OPP and related recommendations for international students.

GRANTS (APPLIED)

Co-Investigator, "Optimizing Mobile Health Applications," Sponsor Federal Grants for Technology Product Development. Budget $10,000

PRESENTATIONS AND INVITED LECTURES

Invited Lecturer, "Current Trends in Health IT," Nursing Dubai 2024. May 27, 2024.
HIMSS 2025, Presentation Proposal, AI Today: The Good, the Bad and the Ugly
ACHE 2025, Presentation Proposal, Physician Engagement in Quality Measures; Carrots, Sticks and Cat Food

PROFESSIONAL TRAINING

PIRATE Certification
University of Maryland Baltimore County, Catonsville, MD

CATAlyst Observation
University of Maryland Baltimore County, Catonsville, MD October 23, 2023
Description: Faculty Development Center (FDC) program providing student feedback and direct observation of classroom instruction.

UMBC New Faculty Orientation
University of Maryland Baltimore County, Catonsville, MD August 21, 2023
Description: Faculty Development Center (FDC) program for new UMBC faculty.

COEIT Adjunct Faculty Orientation
University of Maryland Baltimore County, Catonsville, MD August 21, 2023
Description: COEIT adjunct faculty orientation for fall adjunct faculty.

PROFESSIONAL SERVICE

IS Graduate Professional Programs Committee
University of Maryland Baltimore County, Catonsville, MD

Student Recruitment Event
Health Information Management Systems Society, Orlando, FL

Research Advisory Network
Central Michigan University, Mount Pleasant, MI

COMMUNITY SERVICE

Gulf Shores Association Board of Directors
Indian Shores, FL 2022 to present

OTHER

FAA Private Pilot-3515068

CURRICULUM VITAE

KARUNA PANDE JOSHI

EDUCATION

Ph.D.	2012	University of Maryland Baltimore County, Computer Science
M.S.	1999	University of Maryland Baltimore County, Computer Science
B. Engineering	1993	University of Bombay, India, Computer Engineering

Experience in Higher Education

2024-Date	UMBC, Professor (tenured), Information Systems
2021-Date	UMBC, UMBC Director, Center for Accelerated Real Time Analytics (CARTA)
2021-2024	UMBC, Undergraduate Program Director, Business Technology Administration (BTA)
2020-2024	UMBC, Associate Professor (tenured), Information Systems
2018-2021	UMBC, Site Director, Center for Accelerated Real Time Analytics (CARTA)
2017-2020	UMBC, Assistant Professor, Information Systems
2017-2017	UMBC, Research Associate Professor, Computer Science and Electrical Engineering
2013-2017	UMBC, Research Assistant Professor, Computer Science and Electrical Engineering
2014-2015	IIT Delhi, Visiting Faculty, CoE Cyber Systems and Information Assurance
2009-2012	UMBC, Graduate Research Assistant, Computer Science and Electrical Engineering

Experience in Other than Higher Education

2013-2017	JAK Tec LLC, Owner and Founder
2013-2014	National Institute of Standards and Technology, Visiting Scientist
2012	Emerging Technologies Inst., IBM, NC, USA; Research Intern
2010	IBM Research Labs, New Delhi, India; Research Intern
1999-2009	International Monetary Fund, Washington DC, USA, I.T. Project Manager / Senior Information Management Officer
1999	NASA, Greenbelt, MD, USA; Consultant
1996–1998	MOREnet, Columbia, MO, USA; Senior Programmer/ Analyst
1993–1996	Silverline Industries Limited, Mumbai, India; Programmer Analyst

Honors Received

2024	COEIT Mid-Career Faculty Excellence Award
2021	IEEE Senior Member
2019	IEEE Technical Committee on Services Computing (TCSVC) Rising Star Award
2019	IEEE Big Data Security Junior Research Award
2011-2013	IBM PhD Fellowship Award

Research Support and/or Fellowships

2024-2027	$953,925, National Science Foundation (NSF), *FDT-BioTech: Aspects of Digital Twin Studies for Neuroimages*, Co.PI. , P.I. S. Chatterjee
2024-2025	$45,500, UMBC, *Cyber Fellowship for Graduate student*, P.I.
2024	$20,000, UMBC, *COEIT Interdisciplinary Project Award*, P.I.
2023-2028	$500,000, National Science Foundation (NSF), *Phase II IUCRC University of Maryland Baltimore County: Center for Accelerated Real Time Analytics (CARTA),* P.I. Co-PI: M. Halem ; Total Collaborative award across 4 University sites $2,000,000.

2023-2025	$200,000, *2023 CARTA Phase II Membership from NASA, LPS and DHS,* P.I.
2024	$20,000, NSF, ISWC conference Student Travel Award, Co-PI, P.I. R. Yus
2023-2024	$341,296, NSA/LPS Supplement via NSF to CARTA Phase I, P.I.
2023	$25,000, UMBC, *Cybersecurity Exploratory Project Awards*, P.I.
2022-2023	$151,331, *2022 CARTA Phase I Membership from NASA, DHS, and NSA/LPS*, P.I.
2021-2022	$349,778, *2021 CARTA Phase I Membership from NASA, DHS, NSA/CCS, NSA/LPS, Carestream, RAD-AID, Morgan Stanley*, P.I.
2021-2022	$350,000, NIH/ NADPH, *AIM-AHEAD Coordinating Center Artificial Intelligence/ Machine Learning Consortium to Advance Health Equity and Researcher Diversity*, Co-P.I. , P.I. David Chapman/ M. Halem.
2021-2023	$300,000, National Science Foundation, *Phase I IUCRC University of Maryland Baltimore County: Center for Accelerated Real Time Analytics (CARTA) ,* P.I. , Co-PI: M. Halem; Total Collaborative award across 4 University sites $1,200,000.
2020-2021	$349,638, *2020 CARTA Phase I Member fees from NASA, DHS, NSA/CCS, NSA/LPS, Carestream, RAD-AID, Morgan Stanley*, Co-P.I. , P.I. Y. Yesha
2019-2020	$361,571, *2019 CARTA Phase I Member fees from NASA, DHS, NSA/CCS, NSA/LPS, Morgan Stanley, and Seagate*, Co-P.I. , P.I. Y. Yesha
2018-2019	$318,470, *2018 CARTA Phase I Member fees from IBM, D-Wave, Seagate, Morgan Stanley, NSA/CCS*, and DHS, Co-P.I. , P.I. Y. Yesha
2018-2021	$449,997, National Science Foundation, *Phase I IUCRC University of Maryland Baltimore County: Center for Accelerated Real Time Analytics (CARTA),* co-P.I., , P.I. Y. Yesha ; Total Collaborative award across 4 University sites $1,800,000.
2018-2021	$220,047, Office of Naval Research, *Delegated Access Control using Attribute-Based Encryption (ABE)*, P.I. Co-PI T. Finin, USNA P.I. Seung Geol Choi
2018-2021	$229,345, Office of Naval Research, *Secure and Flexible Information Sharing in Coalition Environments*, Co-P.I. , P.I. Z. Chen
2018-2019	$50,000, National Science Foundation, *Workshop - Global Transformation with BlockChain: From Lab to App*, Co-P.I. , P.I. Y. Yesha
2017-2023	$184,000, G.E. Research, *Unstructured Data Knowledge Extraction*, P.I.
2017-2019	$150,000, Booz Allen Hamilton, Co-P.I. , P.I. A. Joshi
2017-2019	$93,230, DoD via NSF to CHMPR IUCRC, *Cloud Regulations and Legal Document Analytics,* Co-P.I., Research Lead
2017-2018	$105,000, Cisco, *Reputation Scoring System & Score based Correlation*, P.I.
2017-2018	$111,876, DoD via NSF to CHMPR IUCRC, *Research on Cybersecurity*, Co-P.I., Project Lead
2016-2019	$1,000,000, IBM, *Accelerated Cognitive Cybersecurity Lab*, Co-P.I. , P.I. A. Joshi
2016-2017	$112,368, DoD/NSA via NSF to CHMPR IUCRC, *Legal Document Analytics*, Co-P.I., Project Lead
2015-2018	$337,180, Office of Naval Research, *Ensuring Secure Cloud Services using Policy-Based Approaches*, P.I. , Co-PI T. Finin, USNA PI Seung Geol Choi
2015-2017	$376,000, DoD/NSA via NSF to CHMPR IUCRC, *Beyond Watson Research Support,* Co-P.I., P.I. A. Joshi
2014-2015	$56,219, DoD/NSA via NSF to CHMPR IUCRC, *Situational Awareness for Cybersecurity - Cloud Security and Service Agreements*, Co-P.I., Project lead
2013-2014	$99,950, TEDCO, *Maryland Innovation Initiative (MII) Award*, P.I.
2013-2013	$50,000, National Science Foundation (NSF), *Innovation Corps (I-Corps)*, Co-P.I.

Ph.D. Students

Ommo Clark, Second Year, Ph.D. Information Systems, Committee Chair
Subhankar Chattoraj, Second Year, Ph.D. Information Systems, Committee Chair
Mohammad Islam, Second Year, Ph.D. Information Systems, Committee Chair
Kelvin Echenim, Pre-Proposal, expected 2026, Ph.D. Information Systems, Committee Chair
Josh Bolton, Pre-Proposal, expected 2026, Ph.D. Information Systems, Committee Chair
Dr. James Clavin, November 2024, Ph.D. Information Systems, Committee Chair
Dr. Redwan Walid, Aug 2023, Ph.D. Information Systems, Committee Chair
Dr. Dae-young Kim, July 2023, Ph.D. Information Systems, Committee Chair
Dr. Ronak Razavisousan, Sep 2022, Ph.D. Information Systems, Committee Chair
Dr. Lavanya Elluri, Nov 2021, Ph.D. Information Systems, Committee Chair

Mohammad Saeid Anwar, expected 2027, Ph.D. Information Systems, committee member
Saydeh Karabatis, expected 2026, Ph.D. Information Systems, committee member
Ira Winkler, expected 2026, Ph.D. Information Systems, committee member
Chhaya Kulkarni, expected 2025, Ph.D. Information Systems, committee member
Tao Ding, expected 2025, Ph.D. Information Systems, committee member
Mohammad Ishtiaque Rahman, expected 2025, Ph.D. Information Systems, committee member
Dr. Antonios Xenakis, 2024, Ph.D. Information Systems, committee member
Dr. Lawrence Sebald, 2024, Ph.D. Computer Science, committee member
Dr. Anantaa Kotal, 2024, Ph.D. Computer Science, committee member
Dr. Sai Sree Laya Chukkapalli, 2024, Ph.D. Computer Science, committee member
Dr. Varun Mandalapu, 2021, Ph.D. Information Systems, committee member
Dr. Samson Oni, 2021, Ph.D. Information Systems, committee member
Dr. Alex Kaplunovich, 2020, Ph.D. Computer Science, committee member
Dr. Taneeya Satyapanich, 2019, Ph.D. Computer Science, committee member
Dr. Nilavra Pathak, 2019, Ph.D. Information Systems, committee member
Dr. Sudip Mittal, 2019, Ph.D. Computer Science, committee member

Master's Students

Satyasai Mandlem, 2025, M.P.S, DataScience, Project Mentor
Abhishek Mahindrakar, 2020, M.S. Information Systems, Committee Chair
Ketki Joshi, 2020, M.S. Information Systems, Committee Chair
Divya N. Ganapathy, 2020, M.S. Computer Science, Committee Chair
Adithya Bandi, 2020, M.S. Computer Science, Committee Chair
Sandesh Timilsina, 2020, M.S. Computer Science, committee member
Sharad Dixit, 2019, M.S. Computer Science, Committee Chair
Rajat Patel, 2019, M.S. Computer Science, committee member
Ankur Nagar, 2019, M.S. Information Systems, Committee Chair
Priyanka Ranade, 2019, M.S. Information Systems, Committee Chair
Arya Renjan, 2019, M.S. Computer Engineering, Committee Chair
Sowmya Ramapatruni, 2019, M.S. Computer Science, committee member
Maithilee Joshi, 2018, M.S. Computer Science, Committee Chair
Srishty Saha, 2018, M.S. Computer Science, Committee Chair
Agniva Banerjee, 2018, M.S. Computer Science, Committee Chair
Anudeep Nallamothu, 2018, M.S. Computer Science, committee member
Nitika Khurana, 2018, M.S. Computer Science, committee member
Vishal Rathod, 2018, M.S. Computer Science, committee member

Raka Dalal, 2018, M.S. Computer Science, project Advisor
Vaishali Narkhede, 2016, M.S. Computer Science, Committee Chair
Amit Hendre, 2014, M.S. Computer Science, Committee Chair
Morgan Maderia, 2014, M.S. Computer Science, committee member

Undergraduate Students

Mohiuddin Syed, TRUCE Research Project, 2023, Research Advisor
Pahal Raval, UMBC CWIT Scholar Program, 2023, Faculty Mentor
Adam Afilka, LSAMP 2019, Research Advisor
Ariel Sandoval, ALDA Research Project, 2019, Research Advisor
Mark Markis, ALDA Research Project, 2018, Research Advisor
Michael Aebig, ALDA Research Project, 2017, Research Advisor
Jiayong Lin, ALDA Research Project, 2017, Research Advisor
Kayla Tomas, UMBC CWIT Scholar Program, 2019, Faculty Mentor
Emelien Tchuosi, UMBC CyberScholar Program, 2019, Faculty Mentor
Niara Richards, UMBC CyberScholar Program, 2018, Faculty Mentor
Nithya Prakash, UMBC CyberScholar Program, 2018, Faculty Mentor
Amina Mahmood, UMBC CyberScholar Program, 2017, Faculty Mentor
Gabrielle Watson, UMBC CyberScholar Program, 2017, Faculty Mentor

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

(students marked with *)

Peer-Reviewed Works

Journal Articles

1. Redwan Walid*, Karuna Pande Joshi, Seung Geol Choi, “Leveraging semantic context to establish access controls for secure cloud-based electronic health records”, International Journal of Information Management Data Insights, Volume 4, Issue 1, 2024, 100211, ISSN 2667-0968, https://doi.org/10.1016/j.jjimei.2023.100211.
2. Redwan Walid*, Karuna Pande Joshi, and Seung Geol Choi, “Comparison of attribute-based encryption schemes in securing healthcare systems” Scientific Reports 14, 7147, Nature, (2024). https://doi.org/10.1038/s41598-024-57692-w
3. Hendricks-Sturrup R, Simmons M, Anders S, Aneni K, Wright Clayton E, Coco J, Collins B, Heitman E, Hussain S, Joshi K, Lemieux J, Lovett Novak L, Rubin D, Shanker A, Washington T, Waters G, Webb Harris J, Yin R, Wagner T, Yin Z, Malin B, “Developing Ethics and Equity Principles, Terms, and Engagement Tools to Advance Health Equity and Researcher Diversity in AI and Machine Learning: Modified Delphi Approach” , JMIR AI 2023;2:e52888, URL: https://ai.jmir.org/2023/1/e52888, DOI: 10.2196/52888
4. Ronak Razavisousan* and Karuna Pande Joshi, “Building Textual Fuzzy Interpretive Structural Modeling to Analyze Factors of Student Mobility Based on User Generated Content”, International Journal of Information Management Data Insights, Volume 2, Issue 2, 2022, 100093, ISSN 2667-0968, https://doi.org/10.1016/j.jjimei.2022.100093.

5. D. Natolana Ganapathy* and K. Joshi, “A Semantically Rich Framework to Automate Cloud Service Level Agreements” in IEEE Transactions on Services Computing, vol. , no. 01, pp. 1-1, 5555. doi: 10.1109/TSC.2022.3140585
6. L. Elluri*, S. Chukkapalli*, K. P. Joshi, T. Finin, and A. Joshi, “A BERT Based Approach to Measure Web Services Policies Compliance With GDPR”, IEEE Access 9: 148004-148016, 2021
7. K. Sane*, K. P. Joshi, and S. Mittal, “Semantically Rich Framework to Automate Cyber Insurance Services”, IEEE Transactions on Services Computing, 2021, doi: 10.1109/TSC.2021.3113272
8. Elluri L*, Piplai A*, Kotal A*, Joshi A and Joshi KP “A Policy-Driven Approach to Secure Extraction of COVID-19 Data From Research Papers.”, Frontiers in Big Data 4:701966, 2021, doi: 10.3389/fdata.2021.701966
9. Karuna Pande Joshi and Srishty Saha*. 2020. A Semantically Rich Framework for Knowledge Representation of Code of Federal Regulations. Digit. Gov.: Res. Pract. 1, 3, Article 21 (October 2020), https://doi.org/10.1145/3425192
10. James Clavin*, Sisi Duan, Haibin Zhang, Vandana Janeja, Karuna P. Joshi, Yelena Yesha, Lucy C. Erickson, and Justin Li. 2020, Blockchains for Government: Use Cases and Challenges. Digit. Gov.: Res. Pract. 1, 3, Article 22 (October 2020), https://doi.org/10.1145/3427097
11. Karuna P. Joshi, Lavanya Elluri* and Ankur Nagar*, “An Integrated Knowledge Graph to Automate Cloud Data Compliance,” IEEE Access, vol. 8, pp. 148541-148555, 2020, doi: 10.1109/ACCESS.2020.3008964.
12. S. Chukkapalli*, S. Mittal, M. Gupta, M. Abdelsalam, A. Joshi, R. Sandhu and K. Joshi, “Ontologies and Artificial Intelligence Systems for the Cooperative Smart Farming Ecosystem”, IEEE Access, vol. 8, pp. 164045-164064, 2020, doi: 10.1109/ACCESS.2020.3022763.
13. Maithilee Joshi*, Karuna Joshi, and Tim Finin, “Delegated Authorization Framework for EHR Services using Attribute Based Encryption”, IEEE Transactions on Services Computing, 2019, doi: doi: 10.1109/TSC.2019.2917438.
14. Karuna Pande Joshi and Agniva Banerjee*, “Automating Privacy Compliance Using Policy Integrated Blockchain”, Special Issue on Advances of Blockchain Technology and Its Applications, Cryptography 2019, 3(1), 7; MDPI, https://doi.org/10.3390/cryptography3010007
15. Karuna P. Joshi, Yelena Yesha, Tim Finin, “Automating Cloud Services Lifecycle through Semantic Technologies,” IEEE Transactions on Services Computing, vol.7, no.1, pp.109-122, Jan.-March 2014; doi: 10.1109/TSC.2012.41
16. Karuna P Joshi, Yelena Yesha, Tim Finin, and Yaacov Yesha, "A Policy-based Cloud Broker for the VCL platform", International Journal of Cloud Computing (IJCC 2), no. 2/3, 288-303, 2013.
17. Karuna Joshi, Anupam Joshi, and Yelena Yesha, “On Using a Warehouse to Analyze Web Logs”, Distributed and Parallel Databases, 13,161-180, 2003.

Book Chapters

1. Karuna P Joshi, Anupam Joshi, Yelena Yesha, and Yaacov Yesha, “Policy Driven Cloud based Services for Personalized Medicine”, Invited chapter in book “Knowledge Mining and Bioinformatics Techniques to Advance Personalized Diagnostics and Therapeutics: The case for White Space R&D”, published by Springer Verlag, September 2012
2. Karuna Joshi, Yelena Yesha, Ant Ozok, Yaacov Yesha, Ashwini Lahane, Hari Kalva, Ankur Agarwal and Borko Furht, “User-centric Smart Services on the Cloud”, chapter in book The Smart Internet, LNCS, Springer Berlin / Heidelberg, pp 234-249, vol 6400, Oct 2010.
3. David Chapman, Karuna Joshi, Yelena Yesha, Milt Halem, Yaacov Yesha and Phuong Nguyen, “Scientific Services on the Cloud”, chapter in book Handbook of Cloud Computing, Part 3, 379-405, Sep 2010, DOI: 10.1007/978-1-4419-6524-0_16

Conference Proceedings

1. S. Chattoraj* and K. P. Joshi, "MedReg-KG: KnowledgeGraph for Streamlining Medical Device Regulatory Compliance", in 2024 IEEE International Conference on Big Data (BigData), 2024.
2. O. Clark*, K. P. Joshi, and T. Reynolds, "Global Relevance of Online Health Information Sources: A Case Study of Experiences and Perceptions of Nigerians", AMIA 2024 Annual Symposium, November 2024.
3. S. Chattoraj* and K. P. Joshi, "Semantically Rich Approach to Automating Regulations of Medical Devices", IEEE International Conference on Digital Health (ICDH), at IEEE World Congress on Services 2024.
4. O. Clark*, T. Reynolds, E. Ugwuabonyi*, and K. P. Joshi, "Exploring the Impact of Increased Health Information Accessibility in Cyberspace on Trust and Self-care Practices", ACM Workshop on Secure and Trustworthy Cyber-Physical Systems (ACM SaT-CPS 2024), June 2024
5. R. Walid*, K. P. Joshi, and L. Elluri, "Secure and Privacy-Compliant Data Sharing: An Essential Framework for Healthcare Organizations", 10th International Conference on Mathematics and Computing ICMC 2024, January 2024
6. Kelvin Echenim* and Karuna P Joshi, "IoT-Reg: A Comprehensive Knowledge Graph for Real-Time IoT Data Privacy Compliance," in 2023 IEEE International Conference on Big Data (BigData), Sorrento, Italy, 2023 pp. 2897-2906, doi: 10.1109/BigData59044.2023.10386545
7. Kelvin Uzoma Echenim*, Lavanya Elluri and Karuna P Joshi, “Ensuring Privacy Policy Compliance of Wearables with IoT Regulations”, IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (IEEE TPS 2023), November 2023
8. Josh Bolton*, Lavanya Elluri, and Karuna Pande Joshi, “An Overview of Cybersecurity Knowledge Graphs Mapped to the MITRE ATT&CK Framework Domains”, IEEE International conference on Intelligence and Security Informatics (ISI 2023), October 2023
9. D. Dahiphale*, A. Wadkar*, and Karuna P. Joshi, “CDFMR: A Distributed Statistical Analysis of Stock Market Data using MapReduce with Cumulative Distribution Function”, IEEE CLOUD Summit Conference 2023, July 2023.
10. James Clavin* and Karuna P. Joshi, “Policy Integrated Blockchain to Automate HIPAA Part 2 Compliance”, IEEE International Conference on Digital Health (ICDH) 2023 in IEEE World Congress on Services 2023, July 2023.
11. Redwan Walid*, Karuna P. Joshi, and Seung Geol Choi, “Semantically Rich Differential Access to Secure Cloud EHR”, The 9th IEEE International Conference on Big Data Security on Cloud/High Performance and Smart Computing /Intelligent Data and Security (IEEE BigDataSecurity/HPSC/IDS 2023), May 2023
12. Dae-young Leroy Kim*, Nujood Alodadi*, Zhiyuan Chen, Karuna Pande Joshi, Adina Crainiceanu, Don Needham, “MATS: A Multi-aspect and Adaptive Trust-based Situation-aware Access Control Framework for Federated Data-as-a-Service Systems” in 2022 IEEE International Conference on Services Computing (SCC), Spain, 2022 , *(acceptance rate: 19.7%)*
13. Sharad Dixit*, Karuna Joshi, Seung Goel Choi, and Lavanya Elluri, “Semantically Rich Access Control in Cloud EHR Systems Based on MA-ABE”, The 8th IEEE International Conference on Big Data Security on Cloud/High Performance and Smart Computing /Intelligent Data and Security (IEEE BigDataSecurity/HPSC/IDS 2022), May 2022
14. D. Kim*, L. Elluri* and K. Joshi, “Trusted Compliance Enforcement Framework for Sharing Health Big Data,” in 2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, 2021 pp. 4715-4724, doi: 10.1109/BigData52589.2021.9671834
15. P. Schubel*, Z. Chen, A. Crainiceanu, K. P. Joshi, and D. Needham, “A Semantic Framework for Secure and Efficient Contact Tracing of Infectious Diseases”, in IEEE International Conference on Bioinformatics and Biomedicine (BIBM), December 2021

16. A. Kotal*, A. Joshi, and K. P. Joshi, “The Effect of Text Ambiguity on Creating Policy Knowledge Graphs”, in IEEE International Conference on Big Data and Cloud Computing (BDCloud 2021), September 2021
17. Redwan Walid*, Karuna P. Joshi, and Seung Geol Choi, “Secure Cloud EHR with Semantic Access Control, Searchable Encryption and Attribute Revocation”, in IEEE International Conference on Digital Health (IEEE ICDH), October 2021.
18. R. Razavisousan* and K. Joshi, “Analyzing GDPR compliance in Cloud Services’ privacy policies using Textual Fuzzy Interpretive Structural Modeling (TFISM),” in 2021 IEEE International Conference on Services Computing (SCC), Chicago, IL, USA, 2021 pp. 89-98, doi: 10.1109/SCC53864.2021.00021
19. Ankur Nagar*, Lavanya Elluri*, and Karuna P. Joshi, “Automated Compliance of Mobile Wallet Payments for Cloud Services”, 7th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2021), May 2021.
20. Dae-young L. Kim* and Karuna P. Joshi, “A Semantically Rich Knowledge Graph to Automate HIPAA Regulations for Cloud Health I.T. Services”, 7th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2021), May 2021.
21. Redwan Walid*, Karuna P. Joshi, Seung Geol Choi and Dae-young Kim*, “Cloud-based Encrypted EHR System with Semantically Rich Access Control and Searchable Encryption,” 2020 IEEE International Conference on Big Data (Big Data), December 2020, pp. 4075-4082, doi: 10.1109/BigData50022.2020.9378002.
22. Lavanya Elluri*, Karuna P. Joshi, and Anantaa Kotal*, "Measuring Semantic Similarity across EU GDPR Regulation and Cloud Privacy Policies," 2020 IEEE International Conference on Big Data (Big Data), 2020, pp. 3963-3978, doi: 10.1109/BigData50022.2020.9377864.
23. Anantaa Kotal*, Karuna P. Joshi, and Anupam Joshi, "ViCLOUD: Measuring Vagueness in Cloud Service Privacy Policies and Terms of Services", In Proceedings of IEEE International Conference on Cloud Computing (IEEE CLOUD), 2020.
24. S. Oni*, Z. Chen, A. Crainiceanu, K. P. Joshi, and D. Needham, “A Framework for Situation-Aware Access Control in Federated Data-as-a-Service Systems Based on Query Rewriting”, In Proceedings of IEEE International Conference on Services Computing (IEEE SCC), 2020.
25. Abhishek Mahindrakar* and Karuna P. Joshi, “Automating GDPR Compliance using Policy Integrated Blockchain”, In Proceedings, 6th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2020), May 2020.
26. Adithya Bandi*, Karuna P. Joshi and Vaish Mulwad, “Affinity Propagation Initialisation Based Proximity Clustering For Labeling in Natural Language Based Big Data Systems”, In Proceedings of 6th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2020), May 2020.
27. Ronak Razavisousan* and Karuna P. Joshi, “Two Tier Analysis of Social Media Collaboration for Student Migration”, In Proceedings of IEEE International Conference on Collaboration and Internet Computing (IEEE CIC), Dec 2019.
28. Alex Kaplunovich*, Karuna P. Joshi, and Yelena Yesha, “Scalability Analysis of Blockchain on a Serverless Cloud”, in proceedings of IEEE Big Data 2019, December 2019
29. Ketki Joshi*, Karuna P. Joshi, and Sudip Mittal, “A Semantic Approach for Automating Knowledge in Policies of Cyber Insurance Services”, In Proceedings of IEEE International Conference on Web Services (IEEE ICWS 2019), July 2019. *(acceptance rate: 20%)*
30. Sharad Dixit*, Karuna P. Joshi, and Seung Geol Choi, “Multi Authority Access Control in a Cloud EHR System with MA-ABE”, In Proceedings, IEEE International Conference on Edge Computing (EDGE 2019), July 2019.

31. S. Oni*, Z. Chen, A. Crainiceanu, K. P. Joshi, and D. Needham, "Situation-Aware Access Control in Federated Data-as-a-Service for Maritime Search And Rescue", In Proceedings of IEEE International Conference on Services Computing (IEEE SCC), 2019, July 2019.
32. Arya Renjan*, Sandeep N. Narayanan*, and Karuna P. Joshi, "A Policy based Framework for Privacy-Respecting Deep Packet Inspection of High Velocity Network Traffic", In Proceedings of 5th IEEE International Conference on Big Data Security on Cloud, (BigDataSecurity 2019), May 2019.
33. S. Ramapatruni*, S. N. Narayanan*, S. Mittal*, A. Joshi, and K. P. Joshi, "Anomaly Detection Models for Smart Home Security", in Proceedings of 5th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2019), May 2019.
34. Lavanya Elluri*, Ankur Nagar* and Karuna Pande Joshi, "An Integrated Knowledge Graph to Automate GDPR and PCI DSS Compliance", in Proceedings of IEEE Big Data Conference, December 2018. *(acceptance rate: 19.7%)*
35. Arya Renjan*, Karuna P. Joshi, Sandeep Nair and Anupam Joshi, "DAbR: Dynamic Attribute-based Reputation scoring for Malicious I.P. Address Detection", In Proceedings of IEEE Intelligence and Security Informatics (IEEE ISI), November 2018. *(acceptance rate: 34%)*
36. Priyanka Ranade*, Sudip Mittal, Anupam Joshi, and Karuna P. Joshi, "Using Deep Neural Networks to Translate Multi-lingual Threat Intelligence", In Proceedings of IEEE Intelligence and Security Informatics (IEEE ISI), November 2018 *(acceptance rate: 34%)*
37. Sandeep Nair Narayanan*, Ashwinkumar Ganesan*, Karuna Pande Joshi, Tim Oates, Anupam Joshi, and Tim Finin, "Early Detection of Cybersecurity Threats Using Collaborative Cognition", In Proceedings of the 4th IEEE International Conference on Collaboration and Internet Computing (CIC), October 2018
38. Priyanka Ranade*, Sudip Mittal, Anupam Joshi, and Karuna Pande Joshi, "Understanding Multi-lingual Threat Intelligence for A.I. based Cyber-defense Systems", IEEE International Symposium on Technologies for Homeland Security (HST), October, 2018
39. Maithilee P. Joshi*, Karuna Pande Joshi, and Tim Finin, "Attribute Based Encryption for Secure Access to Cloud Based EHR Systems", in Proceedings of 11th IEEE International Conference on Cloud Computing (CLOUD), July 2018. *(acceptance rate: 18%)*
40. Lavanya Elluri* and Karuna Pande Joshi, "A Knowledge Representation of Cloud Data controls for EU GDPR Compliance", Concise Paper, in Proceedings of 11th IEEE International Conference on Cloud Computing (CLOUD), July 2018.
41. Ankur Nagar and Karuna P. Joshi, "A Semantically Rich Knowledge Representation of PCI DSS for Cloud Services", In proceedings of 6th International IBM Cloud Academy Conference ICACON 2018, Japan, May 2018.
42. Agniva Banerjee and Karuna Pande Joshi, "Link Before You Share: Managing Privacy Policies through Blockchain", In proceedings of 4th International Workshop on Privacy and Security of Big Data (PBSD), IEEE Big Data Conference, December 2017
43. Srishty Saha, Karuna Joshi, Renee Frank, Michael Aebig, and Jiayong Lin, "Automated Knowledge Extraction from the Federal Acquisition Regulations System (FARS)", In proceedings of 2nd International Workshop on Enterprise Big Data Semantic and Analytics Modeling, IEEE Big Data Conference, December 2017
44. Srishty Saha, Karuna Pande Joshi and Renee Frank, "Cognitive Assistance for Automating the Analysis of Federal Acquisition Regulations System" In Proceedings of AAAI Fall Symposium 2017, Nov 2017
45. Sudip Mittal, Aditi Gupta, Karuna Pande Joshi, Claudia Pearce, and Anupam Joshi, "A Question and Answering System for Management of Cloud Service Level Agreements" in proceedings of 10th IEEE International Conference on Cloud Computing (CLOUD), June 2017 *(acceptance rate: 18%)*

46. Maithilee Joshi, Sudip Mittal, Karuna Pande Joshi and Tim Finin, "Semantically Rich Oblivious Access Control for Cloud Storage" in proceedings of IEEE 1st International Conference on Edge Computing (EDGE), June 2017
47. Agniva Banerjee, Raka Dalal, Sudip Mittal, and Karuna Pande Joshi, "Generating Digital Twin models using Knowledge Graphs for Industrial Production Lines", Workshop on Industrial Knowledge Graphs, co-located with the 9th International ACM Web Science Conference, June 2017.
48. Srishty Saha, Aditi Gupta, Karuna Pande Joshi and Renee Frank, "A Deep Learning Approach to Understanding Cloud Service Level Agreements" In Proceedings of 5th International IBM Cloud Academy Conference ICA CON, May 2017
49. Karuna P Joshi, Aditi Gupta, Sudip Mittal, Claudia Pearce, Anupam Joshi, and Tim Finin, "Semantic Approach to Automating Management of Big Data Privacy Policies", in proceedings of IEEE Big Data Conference, December 2016 (acceptance rate: 18.7%)
50. Karuna P Joshi, Aditi Gupta, Sudip Mittal, Claudia Pearce, Anupam Joshi, and Tim Finin, "ALDA: Cognitive Assistant for Legal Document Analytics", AAAI Fall Symposium 2016, Nov, 2016
51. Aditi Gupta, Sudip Mittal, Karuna P. Joshi, Claudia Pearce and Anupam Joshi, "Streamlining Management of Multiple Cloud Services," 2016 IEEE 9th International Conference on Cloud Computing (CLOUD), San Francisco, CA, 2016, pp. 481-488. (acceptance rate: 15%)
52. Vaishali Narkhede, Karuna Joshi, Tim Finin, Adam Aviv, Seung Geol Choi and Dan Roche, "Managing Cloud Storage Obliviously", in proceedings of 8th International Conference on Cloud Computing (CLOUD) 2016 (acceptance rate: 15%)
53. Karuna Joshi, Yelena Yesha, Tim Finin, "An Ontology for a HIPAA compliant cloud services" In Proceedings of 4th International IBM Cloud Academy Conference ICA CON, June 2016
54. Prajit Das, Sandeep Nair, Nitin Sharma, Anupam Joshi, Karuna Joshi, and Tim Finin, Context-Sensitive Policy Based Security in Internet of Things", 1st IEEE Workshop on Smart Service Systems, co-located with IEEE International Conference on Smart Computing, 2016
55. Sudip Mittal, Karuna Joshi, Claudia Pearce, and Anupam Joshi, Automatic Extraction of Metrics from SLAs for Cloud Service Management, in proceedings of IEEE International Conference on Cloud Engineering, April 2016 (IC2E 2016)
56. B. Stanton, M. Theofanos, K. P Joshi, "Framework for Cloud Usability", in Proceedings of Human Computer Interaction (HCI) International 2015 conference, August 2015
57. Amit Hendre, and Karuna Pande Joshi, "A Semantic Approach to Cloud Security and Compliance", In Proceedings of 8th International Conference on Cloud Computing (CLOUD), New York, 2015 (acceptance rate: 15%)
58. Karuna Pande Joshi and Claudia Pearce, "Automating Cloud Service Level Agreements using Semantic Technologies", In Proceedings of CLaw: 1st International Workshop on Legal and Technical Issues in Cloud Computing, IEEE International Conference on Cloud Engineering (I2CE), Tempe, 2015.
59. Karuna Pande Joshi, "Cloud Data Management Policies: Security and Privacy Checklist", In Proceedings, 2nd International IBM Cloud Academy Conference ICA CON 2014, Atlanta, 2014.
60. Karuna Pande Joshi, Milton Halem, Yelena Yesha, Mladen Vouk, Andy Rindos, John E Dorband, "USM Community Cloud: VCL-based Academic Cloud", In Proceedings of 2nd International IBM Cloud Academy Conference ICA CON 2014, Atlanta, May 2014
61. Karuna Joshi and Yelena Yesha. 2012. Workshop on Analytics for Big Data Generated by Healthcare and Personalized Medicine Domain. In Proceedings of the 2012 Conference of the Center for Advanced Studies on Collaborative Research (CASCON' 12), Hans-Arno Jacobsen, Ying Zou, and Judy Chen (Eds.). IBM Corp., Riverton, NJ, USA, 267-269.

62. Karuna P Joshi, Tim Finin, Yelena Yesha, Anupam Joshi, Navid Golpayegani and Nabil Adam, "A Policy-based approach to Smart Cloud Services", proceedings SRII Global Conference, July 2012.
63. Kathleen Weaver, Anita Komlodi, Jieyu Wang, Karuna Joshi, Beatrix Sellei, "Parents' Views and Rules about Technology: As told by their middle school children in Hungary and India", In Proceedings Cultural Attitudes towards Communication and Technology 2012. Murdoch University, Murdoch, pp. 493-501.
64. Karuna P Joshi, Tim Finin, Yelena Yesha and Anupam Joshi, "Policy-based Cloud Services on a VCL platform", in proceedings of ICA CON, April 2012.
65. Anupam Joshi, Tim Finin, Karuna Joshi and Madan Oberoi, "A Policy Driven Semantic Approach to Data Usage Management", invited paper at the Data Usage Management Workshop 2011 (in conjunction with WWW2012), April 2012
66. Karuna Joshi, "D.C. Proposal: Automation of Service Lifecycle on the Cloud by Using Semantic Technologies", in proceedings of International Semantic Web Conference (ISWC), October 2011
67. Karuna Joshi and Murthy Chebbiyam, "Determining value co-creation opportunity in B2B services", in proceedings of SRII Global Conference 2011, March 2011.
68. Karuna Joshi, Anupam Joshi and Yelena Yesha, "Managing the Quality of Virtualized Services", in proceedings of SRII Global Conference 2011, March 2011.
69. Karuna Pande Joshi, Anupam Joshi, Tim Finin, and Yelena Yesha, "Policy Driven Negotiations for Managing Virtualized Services on the Cloud", Proceedings of 19th Annual Frontiers in Service Conference, Sweden, June 2010.
70. Karuna Joshi, Yelena Yesha, Ant Ozok, and Yaacov Yesha, "User-centric Smart Services", in proceedings of IBM CASCON 2009, Toronto, ON, Canada, November 2009.
71. Karuna Pande Joshi, Anupam Joshi, and Yelena Yesha, "Quality metrics for Virtualized I.T. Services on the Cloud", Proceedings of 18th Annual Frontiers in Service Conference, Hawaii, October 2009.
72. Karuna Joshi, Tim Finin, and Yelena Yesha, "Integrated Lifecycle of I.T. Services in a Cloud Environment", in Proceedings of The Third International Conference on the Virtual Computing Initiative (ICVCI 2009), Research Triangle Park, NC, October 2009.
73. Karuna Joshi, Anupam Joshi, Yelena Yesha, and Raghu Krishnapuram, "Warehousing and Mining Web Logs", in Proceedings of Workshop on Web Information and Data Management, ACM CIKM 99, Kansas City, 1999.

Non-Peer-Reviewed Works

1. Karuna Pande Joshi and et al., "TCO for Cloud Services: A Framework", EDUCAUSE ECAR Working Groups, EDUCAUSE, April 2015
2. Brian Stanton, Mary Theofanos and Karuna Pande Joshi, Framework for Cloud Usability, NISTIR, August 2014
3. K Joshi, A Joshi, Y Yesha, R Kothari, "A Framework for Relating Frontstage and Backstage Quality in Virtualized Services", TechReport TR CS 09 01, University of Maryland, Baltimore County, 2009, *8 citations*
4. F. Perich, S. Avancha, A. Joshi, Y. Yesha, and K. P. Joshi, "Query Routing and Processing in Mobile Ad-Hoc Environments", TechReport, University of Maryland, Baltimore County, November 2001, *16 citations*
5. A. Joshi, K. P. Joshi, and R. Krishnapuram, "On Mining Web Access Logs", TechReport, University of Maryland Baltimore County, October 1999, *199 citations*
6. Karuna P Joshi, "Analysis of Data Mining Algorithms", 1997, *37 citations*

Works Submitted or In Preparation

1. Clavin, James, Mandlem, Satyasai, Joshi, Karuna, “Addressing Improper Payments in Government Healthcare through Blockchain and Generative AI”, submitted to Journal: Digital Government: Research and Practice
2. Mandlem, Satyasai, Clavin, James, Joshi, Karuna, “Measuring the Compliance Costs of Exchanging Part 2 Healthcare Claims Data Through Blockchain”, submitted to ACM DLT Journal
3. Dae-young Kim and Karuna Pande Joshi, “TRUCE: TRUsted Compliance Enforcement Service for Secure Health Data Exchange”, submitted to IEEE Transactions on Service Computing (TSC).
4. Subhankar Chattoraj, Karuna Joshi and Sawon Pratiher, "A Survey on Knowledge Graphs for Ontological Representation of Electronic Health Records: Construction, Applications, and Challenges", submitted to Scientific Reports.
5. Ronak Razavisousan and Karuna Pande Joshi, “Enhanced Textual Fuzzy Interpretive Structural Modeling For Analyzing complex issues”, to be submitted to Scientific Reports.

Presentations

Conference/Posters Presentation (Juried/Refereed)

1. S. Chattoraj (presenter) and K. P. Joshi (presenter), "MedReg-KG: KnowledgeGraph for Streamlining Medical Device Regulatory Compliance", in 2024 IEEE International Conference on Big Data (BigData), 2024.
2. O. Clark (presenter), K. P. Joshi, and T. Reynolds, "Global Relevance of Online Health Information Sources: A Case Study of Experiences and Perceptions of Nigerians", AMIA 2024 Annual Symposium, November 2024.
3. S. Chattoraj and K. P. Joshi (presenter), "Semantically Rich Approach to Automating Regulations of Medical Devices", IEEE International Conference on Digital Health (ICDH), at IEEE World Congress on Services 2024.
4. O. Clark (presenter), T. Reynolds, E. Ugwuabonyi, and K. P. Joshi, "Exploring the Impact of Increased Health Information Accessibility in Cyberspace on Trust and Self-care Practices", ACM Workshop on Secure and Trustworthy Cyber-Physical Systems (ACM SaT-CPS 2024), June 2024
5. R. Walid (presenter), K. P. Joshi, and L. Elluri, "Secure and Privacy-Compliant Data Sharing: An Essential Framework for Healthcare Organizations", 10th International Conference on Mathematics and Computing ICMC 2024, January 2024
6. Kelvin Echenim (presenter) and Karuna P Joshi, "IoT-Reg: A Comprehensive Knowledge Graph for Real-Time IoT Data Privacy Compliance," in 2023 IEEE International Conference on Big Data (BigData), Sorrento, Italy, 2023 pp. 2897-2906, doi: 10.1109/BigData59044.2023.10386545
7. Kelvin Uzoma Echenim (presenter), Lavanya Elluri and Karuna P Joshi, “Ensuring Privacy Policy Compliance of Wearables with IoT Regulations”, IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (IEEE TPS 2023), November 2023
8. Josh Bolton (presenter), Lavanya Elluri, and Karuna Pande Joshi, “An Overview of Cybersecurity Knowledge Graphs Mapped to the MITRE ATT&CK Framework Domains”, IEEE International conference on Intelligence and Security Informatics (ISI 2023), October 2023
9. D. Dahiphale (presenter), A. Wadkar, and Karuna P. Joshi, “CDFMR: A Distributed Statistical Analysis of Stock Market Data using MapReduce with Cumulative Distribution Function”, IEEE CLOUD Summit Conference 2023, July 2023.
10. James Clavin (presenter) and Karuna P. Joshi (presenter), “Policy Integrated Blockchain to Automate HIPAA Part 2 Compliance”, IEEE International Conference on Digital Health (ICDH) 2023 in IEEE World Congress on Services 2023, July 2023.

11. Redwan Walid (presenter), Karuna P. Joshi, and Seung Geol Choi, “Semantically Rich Differential Access to Secure Cloud EHR”, The 9th IEEE International Conference on Big Data Security on Cloud/High Performance and Smart Computing /Intelligent Data and Security (IEEE BigDataSecurity/HPSC/IDS 2023), May 2023
12. Dae-young Leroy Kim (presenter), Nujood Alodadi, Zhiyuan Chen, Karuna Pande Joshi, Adina Crainiceanu, Don Needham, “MATS: A Multi-aspect and Adaptive Trust-based Situation-aware Access Control Framework for Federated Data-as-a-Service Systems” in 2022 IEEE International Conference on Services Computing (SCC), Spain, 2022
13. Sharad Dixit (presenter), Karuna Joshi, Seung Goel Choi , and Lavanya Elluri, “Semantically Rich Access Control in Cloud EHR Systems Based on MA-ABE”, The 8th IEEE International Conference on Big Data Security on Cloud/High Performance and Smart Computing /Intelligent Data and Security (IEEE BigDataSecurity/HPSC/IDS 2022), May 2022
14. D. Kim (presenter), L. Elluri and K. Joshi, “Trusted Compliance Enforcement Framework for Sharing Health Big Data,” in 2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, 2021 pp. 4715-4724, doi: 10.1109/BigData52589.2021.9671834
15. P. Schubel (presenter), Z. Chen, A. Crainiceanu, K. P. Joshi, and D. Needham, “A Semantic Framework for Secure and Efficient Contact Tracing of Infectious Diseases”, in IEEE International Conference on Bioinformatics and Biomedicine (BIBM), December 2021
16. A. Kotal (presenter), A. Joshi, and K. P. Joshi, “The Effect of Text Ambiguity on creating Policy Knowledge Graphs”, in IEEE International Conference on Big Data and Cloud Computing (BDCloud 2021), September 2021
17. Redwan Walid (presenter), Karuna P. Joshi, and Seung Geol Choi, “Secure Cloud EHR with Semantic Access Control, Searchable Encryption and Attribute Revocation”, in IEEE International Conference on Digital Health (IEEE ICDH), October 2021.
18. R. Razavisousan (presenter) and K. Joshi, “Analyzing GDPR compliance in Cloud Services’ privacy policies using Textual Fuzzy Interpretive Structural Modeling (TFISM),” in 2021 IEEE International Conference on Services Computing (SCC), Chicago, IL, USA, 2021 pp. 89-98, doi: 10.1109/SCC53864.2021.00021
19. Ankur Nagar (presenter), Lavanya Elluri, and Karuna P. Joshi, “Automated Compliance of Mobile Wallet Payments for Cloud Services”, 7th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2021), May 2021.
20. Dae-young L (presenter). Kim and Karuna P. Joshi, “A Semantically Rich Knowledge Graph to Automate HIPAA Regulations for Cloud Health I.T. Services “, 7th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2021), May 2021.
21. Redwan Walid (presenter), Karuna P. Joshi, Seung Geol Choi and Dae-young Kim, “Cloud-based Encrypted EHR System with Semantically Rich Access Control and Searchable Encryption,” 2020 IEEE International Conference on Big Data (Big Data), December 2020, pp. 4075-4082, doi: 10.1109/BigData50022.2020.9378002.
22. Lavanya Elluri (presenter), Karuna P. Joshi, and Anantaa Kotal, “Measuring Semantic Similarity across EU GDPR Regulation and Cloud Privacy Policies,” 2020 IEEE International Conference on Big Data (Big Data), 2020, pp. 3963-3978, doi: 10.1109/BigData50022.2020.9377864.
23. Anantaa Kotal (presenter), Karuna P. Joshi, and Anupam Joshi, "ViCLOUD: Measuring Vagueness in Cloud Service Privacy Policies and Terms of Services", IEEE International Conference on Cloud Computing (IEEE CLOUD), 2020.
24. S. Oni (presenter), Z. Chen, A. Crainiceanu, K. P. Joshi, and D. Needham, “A Framework for Situation-Aware Access Control in Federated Data-as-a-Service Systems Based on Query Rewriting”, In Proceedings of IEEE International Conference on Services Computing (IEEE SCC), 2020.

25. Abhishek Mahindrakar (presenter) and Karuna P. Joshi, “Automating GDPR Compliance using Policy Integrated Blockchain”, 6th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2020), May 2020.
26. Adithya Bandi (presenter), Karuna P. Joshi and Vaish Mulwad, “Affinity Propagation Initialisation Based Proximity Clustering For Labeling in Natural Language Based Big Data Systems”, 6th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2020), May 2020.
27. Ronak Razavisousan (presenter) and Karuna P. Joshi, “Two Tier Analysis of Social Media Collaboration for Student Migration”, In Proceedings of IEEE International Conference on Collaboration and Internet Computing (IEEE CIC), Dec 2019.
28. Alex Kaplunovich (presenter), Karuna P. Joshi, and Yelena Yesha, “Scalability Analysis of Blockchain on a Serverless Cloud”, presented at IEEE Big Data, December 2019
29. Ketki Joshi, Karuna P. Joshi (presenter), and Sudip Mittal, “A Semantic Approach for Automating Knowledge in Policies of Cyber Insurance Services”, presented at IEEE International Conference on Web Services (IEEE ICWS 2019), July 2019.
30. Sharad Dixit (presenter), Karuna P. Joshi, and Seung Geol Choi, “Multi Authority Access Control in a Cloud EHR System with MA-ABE”, presented at IEEE International Conference on Edge Computing (EDGE 2019), July 2019.
31. S. Oni, Z. Chen, A. Crainiceanu (presenter), K. P. Joshi, and D. Needham, “Situation-Aware Access Control in Federated Data-as-a-Service for Maritime Search And Rescue”, In Proceedings of IEEE International Conference on Services Computing (IEEE SCC), 2019, July 2019.
32. Arya Renjan (presenter), Sandeep N. Narayanan, and Karuna P. Joshi, “A Policy based Framework for Privacy-Respecting Deep Packet Inspection of High Velocity Network Traffic”, In Proceedings of 5th IEEE International Conference on Big Data Security on Cloud, May 2019.
33. S. Ramapatruni (presenter), S. N. Narayanan, S. Mittal, A. Joshi, and K. P. Joshi, “Anomaly Detection Models for Smart Home Security”, in Proceedings of 5th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2019), May 2019.
34. Lavanya Elluri, Ankur Nagar (presenter) and Karuna Pande Joshi, "An Integrated Knowledge Graph to Automate GDPR and PCI DSS Compliance", in Proceedings of IEEE Big Data Conference, 2018.
35. Arya Renjan (presenter), Karuna P. Joshi, Sandeep Nair and Anupam Joshi, “DAbR: Dynamic Attribute-based Reputation scoring for Malicious I.P. Address Detection”, In Proceedings of IEEE Intelligence and Security Informatics (IEEE ISI), November 2018.
36. Priyanka Ranade (presenter), Sudip Mittal, Anupam Joshi, and Karuna P. Joshi, “Using Deep Neural Networks to Translate Multi-lingual Threat Intelligence”, In Proceedings of IEEE Intelligence and Security Informatics (IEEE ISI), November 2018
37. Sandeep Nair Narayanan (presenter), Ashwinkumar Ganesan, Karuna Pande Joshi, Tim Oates, Anupam Joshi, and Tim Finin, “Early Detection of Cybersecurity Threats Using Collaborative Cognition”, In Proceedings of the 4th IEEE International Conference on Collaboration and Internet Computing (CIC), October 2018
38. Priyanka Ranade (presenter), Sudip Mittal, Anupam Joshi, and Karuna Pande Joshi, “Understanding Multi-lingual Threat Intelligence for A.I. based Cyber-defense Systems”, IEEE International Symposium on Technologies for Homeland Security (HST), October, 2018
39. Maithilee P. Joshi (presenter), Karuna Pande Joshi, and Tim Finin, “Attribute Based Encryption for Secure Access to Cloud Based EHR Systems”, in Proceedings of 11th IEEE International Conference on Cloud Computing (CLOUD), July 2018.
40. Lavanya Elluri (presenter) and Karuna Pande Joshi, “A Knowledge Representation of Cloud Data controls for EU GDPR Compliance”, Concise Paper, in Proceedings of 11th IEEE International Conference on Cloud Computing (CLOUD), July 2018.

41. Ankur Nagar and Karuna P. Joshi, “A Semantically Rich Knowledge Representation of PCI DSS for Cloud Services”, In proceedings of 6th International IBM Cloud Academy Conference ICACON 2018, Japan, May 2018.
42. Agniva Banerjee and Karuna Pande Joshi (presenter), “Link Before You Share: Managing Privacy Policies through Blockchain”, In proceedings of 4th International Workshop on Privacy and Security of Big Data (PBSD), IEEE Big Data Conference, December 2017
43. Srishty Saha (presenter), Karuna Joshi, Renee Frank, Michael Aebig, and Jiayong Lin, “Automated Knowledge Extraction from the Federal Acquisition Regulations System (FARS)”, In proceedings of 2nd International Workshop on Enterprise Big Data Semantic and Analytics Modeling, IEEE Big Data Conference, December 2017
44. Srishty Saha, Karuna Pande Joshi (presenter) and Renee Frank, “Cognitive Assistance for Automating the Analysis of Federal Acquisition Regulations System” In Proceedings of AAAI Fall Symposium 2017, Nov 2017
45. Sudip Mittal (presenter), Aditi Gupta, Karuna Pande Joshi, Claudia Pearce, and Anupam Joshi, “A Question and Answering System for Management of Cloud Service Level Agreements” in proceedings of 10th IEEE International Conference on Cloud Computing (CLOUD), June 2017
46. Maithilee Joshi (presenter), Sudip Mittal, Karuna Pande Joshi and Tim Finin, “Semantically Rich Oblivious Access Control for Cloud Storage” in proceedings of IEEE 1st International Conference on Edge Computing (EDGE), June 2017
47. Agniva Banerjee, Raka Dalal (presenter), Sudip Mittal, and Karuna Pande Joshi, “Generating Digital Twin models using Knowledge Graphs for Industrial Production Lines”, Workshop on Industrial Knowledge Graphs, co-located with the 9th International ACM Web Science Conference, June 2017.
48. Srishty Saha (presenter), Aditi Gupta, Karuna Pande Joshi and Renee Frank, “A Deep Learning Approach to Understanding Cloud Service Level Agreements” In Proceedings of 5th International IBM Cloud Academy Conference ICA CON, May 2017
49. Karuna P Joshi (presenter), Aditi Gupta, Sudip Mittal, Claudia Pearce, Anupam Joshi, and Tim Finin, “Semantic Approach to Automating Management of Big Data Privacy Policies”, in proceedings of IEEE Big Data Conference, December 2016
50. Karuna P Joshi (presenter), Aditi Gupta, Sudip Mittal, Claudia Pearce, Anupam Joshi, and Tim Finin, “ALDA: Cognitive Assistant for Legal Document Analytics”, AAAI Fall Symposium, Nov, 2016
51. Aditi Gupta, Sudip Mittal (presenter), Karuna P. Joshi, Claudia Pearce and Anupam Joshi, “Streamlining Management of Multiple Cloud Services,” 2016 IEEE 9th International Conference on Cloud Computing (CLOUD), San Francisco, CA, 2016, pp. 481-488.
52. Vaishali Narkhede (presenter), Karuna Joshi, Tim Finin, Adam Aviv, Seung Geol Choi and Dan Roche, “Managing Cloud Storage Obliviously”, in proceedings of 8th International Conference on Cloud Computing (CLOUD) 2016
53. Karuna Joshi (presenter), Yelena Yesha, Tim Finin, “An Ontology for a HIPAA compliant cloud services” In Proceedings of 4th International IBM Cloud Academy Conference ICA CON, June 2016
54. Prajit Das, Sandeep Nair, Nitin Sharma, Anupam Joshi, Karuna Joshi, and Tim Finin, Context-Sensitive Policy Based Security in Internet of Things”, 1st IEEE Workshop on Smart Service Systems, co-located with IEEE International Conference on Smart Computing, 2016
55. Sudip Mittal (presenter), Karuna Joshi, Claudia Pearce, and Anupam Joshi, Automatic Extraction of Metrics from SLAs for Cloud Service Management, in proceedings of IEEE International Conference on Cloud Engineering, April 2016 (IC2E 2016)
56. Sudip Mittal (presenter), Karuna Joshi, Claudia Pearce, and Anupam Joshi, “Parallelizing Natural Language Techniques for Knowledge Extraction from Cloud Service Level Agreements.”, poster at IEEE International conference on BigData, October, 2015

57. B. Stanton (presenter), M. Theofanos, K. P Joshi, “Framework for Cloud Usability”, in Proceedings of Human Computer Interaction (HCI) International 2015 conference, August 2015
58. Amit Hendre, and Karuna Pande Joshi (presenter), “A Semantic Approach to Cloud Security and Compliance”, In Proceedings of 8th International Conference on Cloud Computing (CLOUD), New York, 2015
59. Karuna Pande Joshi and Claudia Pearce (presenter), “Automating Cloud Service Level Agreements using Semantic Technologies”, In Proceedings of CLaw: 1st International Workshop on Legal and Technical Issues in Cloud Computing, IEEE International Conference on Cloud Engineering (I2CE), Tempe, 2015.
60. Karuna Pande Joshi (presenter), “Cloud Data Management Policies: Security and Privacy Checklist”, In Proceedings, 2nd International IBM Cloud Academy Conference ICA CON 2014, Atlanta, 2014.
61. Karuna Pande Joshi (presenter), Milton Halem, Yelena Yesha, Mladen Vouk, Andy Rindos, John E Dorband, "USM Community Cloud: VCL-based Academic Cloud", In Proceedings of 2nd International IBM Cloud Academy Conference ICA CON 2014, Atlanta, May 2014
62. Karuna Joshi (presenter) and Yelena Yesha (presenter). 2012. Workshop on Analytics for Big Data Generated by Healthcare and Personalized Medicine Domain. In Proceedings of the 2012 Conference of the Center for Advanced Studies on Collaborative Research (CASCON’ 12), Hans-Arno Jacobsen, Ying Zou, and Judy Chen (Eds.). IBM Corp., Riverton, NJ, USA, 267-269.
63. Karuna P Joshi (presenter), Tim Finin, Yelena Yesha, Anupam Joshi, Navid Golpayegani and Nabil Adam, “A Policy-based approach to Smart Cloud Services”, proceedings SRII Global Conference, July 2012.
64. Anupam Joshi, Tim Finin, Karuna Joshi and Madan Oberoi, “A Policy Driven Semantic Approach to Data Usage Management”, invited paper at the Data Usage Management Workshop 2011 (in conjunction with WWW2012), April 2012
65. Karuna Joshi (presenter), “D.C. Proposal: Automation of Service Lifecycle on the Cloud by Using Semantic Technologies”, in proceedings of International Semantic Web Conference, October 2011
66. Karuna Joshi (presenter) and Murthy Chebbiyam, “Determining value co-creation opportunity in B2B services”, in proceedings of SRII Global Conference 2011, March 2011.
67. Karuna Joshi (presenter), Anupam Joshi and Yelena Yesha, “Managing the Quality of Virtualized Services”, in proceedings of SRII Global Conference 2011, March 2011.
68. Karuna Joshi (presenter), Tim Finin, and Yelena Yesha, “Integrated Lifecycle of I.T. Services in a Cloud Environment”, in Proceedings of The Third International Conference on the Virtual Computing Initiative (ICVCI 2009), Research Triangle Park, NC, October 2009.

Other Professional Presentations

1. Invited to present at IEEE Services Congress, 2024
2. Invited to present at Diversity in Cyber Security Brunei 2024
3. Invited to participate in the Academic Panel: Research in Data Science at the Women in Data Science(WIDS) NY/NJ Regional Conference, Rutgers, April 27, 2023
4. Invited to present at IIIT Delhi, August 2019
5. Invited to present at Panel for the NSF Conference on PPSR in Data Enabled Science and Engineering, May 2019
6. Invited to present at NSA CS Week, November 2017
7. Invited to present at NSA Workshop, April 2017
8. Invited to present at various Cyber Security Workshops organized by CoE CSIA, IIT Delhi, 2016
9. Invited to present at the VIII NIST Cloud Computing Workshop and Forum, July 2015

10. Invited to present at the Cyber Security and Information Assurance Workshop organized by CoE CSIA, IIT Delhi, May 2015, Delhi, India
11. Invited to present at the Cyber Security Workshop organized by CoE CSIA, IIT Delhi, April 2015, Bangalore, India
12. Invited to present at the third Up Close and Personalized International Congress on Personalized Medicine, Prague, June 2014
13. Invited to present at the IBM Cloud Academy Conference ICA CON, 2016, 2014
14. Invited to co-chair breakout session on Cloud Usability at the NIST Cloud and Mobile Computing Forum, March 2014
15. Invited to present at the second Up Close and Personalized International Congress on Personalized Medicine, Paris, July 2013
16. Workshop Chair on 'Analytics of Big Data Generated by Healthcare and Personalized Medicine domain' at CASCON 2012, IBM Canada, November 2012
17. Invite Talk at Xerox Corp., December '12
18. Invited talk at International Monetary Fund, September '12
19. Invited to present at NIST Cloud Computing Workshop V, June 2012
20. Panelist NSF Workshop 'Knowledge Mining and Bioinformatics Techniques to Advance Personalized Diagnostics and Therapeutics', Florence, February 2012
21. Invited Session Chair for Cloud Computing Services, presented 'Automating Service Negotiation and Acquisition on the Cloud' at INFORMS 2011, November 2011
22. Technology Showcase Exhibit at CASCON 2011, Toronto, November 2011
23. Project prototype Exhibit, NIST Cloud Computing Workshop IV, November 2011
24. Long Presentation at the Doctorial consortium, ISWC 2011, Bonn, October 2011
25. Invited to present at Workshop for Frontiers of Cloud Computing 2010 at IBM Watson Labs

Media Activities

1. "A.I. could constantly scan the internet for data privacy violations, a quicker, easier way to enforce compliance", The Conversation (https://theconversation.com/ai-could-constantly-scan-the-internet-for-data-privacy-violations-a-quicker-easier-way-to-enforce-compliance-128973), February 7, 2020
2. "Identity Theft", WalletHub, October 2017, https://wallethub.com/edu/states-where-identity-theft-and-fraud-are-worst/17549/#karuna-pande-joshi.
3. "Teaching machines to understand – and summarize – text", The Conversation (https://theconversation.com/teaching-machines-to-understand-and-summarize-text-78236), June 21, 2017
4. "Panama Papers: how do leakers leak?", The Conversation (https://theconversation.com/panama-papers-how-do-leakers-leak-57264), April 19, 2016

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Department

- 2021- date UMBC Director, IUCRC Center for Accelerated Real Time Analytics
- 2021- 2024 Undergraduate Program Director (UPD), BTA Program
- 2023 Assessments Committee
- 2021-22 Search Committee for Lecturer/PoP
- 2018-21 UMBC Site Director, IUCRC Center for Accelerated Real Time Analytics
- 2020 Chair, Promotion & Tenure committee for Andrea Kleinsmith

- 2020-21 Associate Undergraduate Program Director (AUPD) , IS
- 2019-20 co-Chair, Research Committee
- 2019-20 Under Graduate Students (UGS) Committee
- 2019 Search Committee for Chair, Information Systems Department
- 2019 I.S. Department Merit Review Committee

Service to the University

- 2021- date UMBC Director, IUCRC Center for Accelerated Real Time Analytics
- 2024- date RCA Shared Infrastructure Governance (SIG) Committee
- 2023- 2024 Co-Chair of Research Computing Task Force
- 2022-23 Search Committee for Graduate Program Director for Erickson School of Aging
- 2021-23 Faculty Development Steering Committee, Member
- 2019-21 Research and Creative Achievements Council, UMBC, Chair
- 2018-21 UMBC Site Director, IUCRC Center for Accelerated Real Time Analytics
- 2017-21 Research and Creative Achievements Council, UMBC, Member
- 2019-20 Interview panel for Assistant Graduate Program Director for Data Science
- 2019-20 Division of I.T. Research Computing Roadmap Committee
- 2018 Interview panel for Division of I.T. Specialist position

Service to the Community and Profession

- Associate Editor, IEEE Transactions on Service Computing (IEEE TSC) (Jan 2021- date)
- International Editorial Advisory Board, Elsevier International Journal of Information Management (IJIM) Data Insights (ISSN: 2667-0968) (2023-)
- Associate Editor, Elsevier International Journal of Information Management (IJIM) Data Insights (ISSN: 2667-0968) (2020 - 2023)
- Editorial Board, Scientific Reports, Nature (2021-2023)
- Local Chair, International Semantic Web Conference (ISWC 2024), Baltimore, USA, 2024
- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2023), Held in conjunction with IEEE Big Data 2023
- Program Chair, 10th International Conference On Mathematics And Computing ICMC 2024
- Invited to Review Proposal for Strategic Research Programmes (SRPs) of the Research Council of the Vrije Universiteit Brussel (VUB), 2023
- Program Committee, IEEE International Conference Big Data, 2023-24
- Program Committee, IEEE International Conference on Cloud Computing (CLOUD), 2021-2024
- Program Committee, IEEE International Conference on Web Services (ICWS), 2018-2022
- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2022), Held in conjunction with IEEE Big Data 2022
- Invited to Review Proposal for Swiss National Science Foundation (SNSF), 2022
- Program Committee (Research and Vision Paper Track), 10th IEEE International Conference on Cloud Engineering, 2022
- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2021), Held in conjunction with IEEE Big Data 2021
- Program Committee member, IEEE International Conference on Cloud Computing in Emerging Markets (CCEM), 2021
- Invited to Review Proposal for Natural Sciences and Engineering Research Council (NSERC) of Canada, 2021

- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2020), Held in conjunction with IEEE Big Data 2020
- Chair, 6th IEEE International Conference on Big Data Security on Cloud (BigDataSecurity 2020), Baltimore, MD, USA, May 2020
- Publication Co-Chair, IEEE Intl Conference on Data Engineering (ICDE) 2020
- Program Committee, IEEE International Conference on Edge Computing (EDGE), 2020
- Program Committee, 33rd International Conference of the Florida Artificial Intelligence Research Society (FLAIRS-33), 2020
- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2019), Held in conjunction with IEEE Big Data 2019
- Program Committee, Workshop on Artificial Intelligence and the Administrative State, 2019
- Program Committee, 4th International Workshop on Application of Big Data for Computational Social Science (ABCSS2019 @ WI2019)
- Chair, Workshop on Big Data for CyberSecurity (BigCyber 2018), Held in conjunction with IEEE Big Data 2018
- Co-organizer of Workshop on Global Transformation with BlockChain: From Lab to App, 2018
- Tutorials Co-Chair for 4th IEEE International Conference on Collaboration and Internet Computing (IEEE CIC), Philadelphia, October 2018
- Co-Chair, The 3rd International Workshop on Internet-scale Clouds and Big Data (ISCBD 2018), Held in conjunction with IEEE CIC 2018
- Program Committee, Workshop on Knowledge Base Construction, Reasoning and Mining (KBCOM 2018, http://www.kbcom.org/) co-located with WSDM'18
- Co-organizer Beyond Watson Workshop, 2014, 2016
- Program Committee, IBM Cloud Academy Conference, ICA CON 2018, 2017, 2016, 2014, 2012
- Program Committee, Data Usage Management on the Web Workshop, held with WWW 2012
- Invited to Review Panel for FNR Luxembourg in 2018, 2019
- Invited to Review Panels for NSF in 2024, 2023, 2016, 2017 and for NIH/NCI in 2014
- Invited to Review papers by many journals, including IEEE TSC, IEEE TCC.

CURRICULUM VITAE

ANDREA KLEINSMITH

EDUCATION

Ph.D.	2010	University College London, UK, Computer Science
M.S.	2004	University of Aizu, Japan, Computer Science
B.A.	1995	University of Oregon, Psychology

Leadership Development

2023 CRA Leadership Academy
2023 ASEE Research Leadership Institute

ACADEMIC APPOINTMENTS

2015 – present University of Maryland, Baltimore County (UMBC)

- 2022-2023 *Acting Associate Dean for Research and Faculty Development*, College of Engineering and Information Technology
- 2022 – present *Graduate Program Director*, Human Centered Computing
- 2021 Fall *Liaison for Research Innovations*, Information Systems
- 2021 – present *Associate Professor*, Information Systems
- 2018 – 2023 *Director,* Interactive Systems Research Center, Information Systems
- 2015 – 2021 *Assistant Professor*, Information Systems

2012 – 2015 University of Florida, *Postdoctoral Researcher*, Computer Science
2010 – 2012 Goldsmiths, University of London, *Postdoctoral Researcher*, Computer Science

HONORS / AWARDS

2024	Center for Women in Technology (CWIT) Outstanding Research Partner Award
2020	UMBC College of Engineering and Information Technology Early Career Faculty Excellence Award
2019	Best Oral Presentation, International Scientific Emergency Medical Services Symposium.
2007-2010	Marie Curie International Reintegration Grant Ph.D. Studentship
2003	University of Aizu, Japan Student Services Organization Studentship

GRANTS

Research Support and/or Fellowships

Costs reflect total award or subaward amount.

External ($1,241,925)

BPC-DP: PeerSIST: Peer Support for IS Transfers
PI: Carolyn Seaman; Co-PIs: Lujie Chen, **Andrea Kleinsmith**, Tuesday Barnes
2022-2024 $294,726, National Science Foundation (NSF), CNS-2216633

Pathways to PostBac IS Online Computing Certifications
PI: Vandana Janeja; Co-PIs: Zhiyuan Chen, Michael Brown, James Foulds, Augusto Casas, Karuna Joshi, Sidas Saulynas
2023-2024 $45,000, Northeastern University.

FW-HTF-P: Telemedicine at Scale: Expanding the Healthcare Workforce and Healthcare Access
PI: Helena Mentis; Co PIs: **Andrea Kleinsmith**, Anita Komlodi, Christine Yee (economics)
2020–2021, NCE 2022 $149,899, National Science Foundation (NSF), BCS-2026510

CHS: SMALL: Stress Reflection Systems in Medical Team Training
PI: **Andrea Kleinsmith**; Co PIs: Helena Mentis, Jenifer Jenkins-Levy (EHS)
2018–2020, NCE 2021, 2022 $376,643, National Science Foundation (NSF), IIS-1815854
2019 $7,000, REU Supplement

CRA-W DREU: Affect Recognition in Simulation and Training
PI: **Andrea Kleinsmith**
2018 $12,000 CRA-W Distributed Research Experience for Undergraduates (CRA-W DREU)

II-New: Flexible User Interaction Instrumentation for Ubiquitous & Immersive Computing Environments
PI: Wayne Lutters; **Andrea Kleinsmith** (PI NCE 2019); Co-PIs: Amy Hurst, **Andrea Kleinsmith**, Anita Komlodi, Ravi Kuber, Helena Mentis
2017 – 2018 $356,657, National Science Foundation (NSF), CNS-1730033.

Internal ($95,239)

Impacts of physiological synchrony on paramedic trainee team communication and performance
PI: **Andrea Kleinsmith**
2024-2025 $1,500, UMBC Undergraduate Research Assistantship Support (URAS)

Market Research Toward Commercialization of a Biosignal-Sharing App
PI: **Andrea** Kleinsmith; Co PIs; Tera Reynolds and Jamie Gurganus (ECEP)
2024-2025 $4,950, UMBC, Faculty Entrepreneurship Accelerator Fund

Interlimb coordination and human-robot symbiosis for mental health and wellbeing
PI: Ramana Vinjamuri (CSEE); Co PIs **Andrea Kleinsmith**; Anne Clemmensen (Dance)
2024-2025 $20,000, UMBC, COEIT Interdisciplinary Proposals 2024

Broadening Participation of Women Undergraduate Transfer Students in COEIT: Designing an interactive technology for affective skill development
PI: **Andrea Kleinsmith**; Co PI Tera Reynolds
2022-2024 $3,450, UMBC Hrabowski Fund for Innovation

Center for Robotics and Intelligent Interaction (CRII)
PI: Cynthia Matuszek; Co-PIs Karen Chen, Don Engel, Ankit Goal, Anita Komlodi, Jinglai Shen, Ramana Vinjamuri, TseHuai Wu.
2022-2023 $28,973, UMBC COEIT Center Start-Up.

Surgical Team Training with Virtual and Human Medical Personnel
PI: **Andrea Kleinsmith**
2017-2018 $1,500, UMBC Undergraduate Research Assistantship Support (URAS)

Revitalizing the COEIT User Studies Labs
PI: Wayne Lutters; co PIs: Stacy Branham, Amy Hurst, **Andrea Kleinsmith**, Anita Komlodi, Ravi Kuber, Helena Mentis
2016–2017 $29,886, UMBC COEIT Strategic Plan Implementation Grant Program

Proposal to Join the Human-Computer Interaction Consortium (HCIC)
PI: Amy Hurst; Co-PIs: **Andrea Kleinsmith**, Anita Komlodi, Ravi Kuber, Wayne Lutters, Helena Mentis
2016–2017 $5,000, UMBC COEIT Strategic Plan Implementation Grant Program

Investigating affective behavior design in interactive systems for paramedic trainees
PI: **Andrea Kleinsmith**
2015-2016 $1,500, UMBC Undergraduate Research Assistantship Support (URAS)

ADVISING / MENTORING

Ph.D. Students

Committee Chair - Graduated
Azin Semsar, **Graduated**, August 2022, Human Centered Computing, Co-Chair.

Committee Chair – In Progress
Surely Akiri, Defended Proposal November 2023, Human Centered Computing, Chair
Vasundhara Misal, Post Comprehensive Exam, proposal Fall 2024, Human Centered Computing, Chair
Golnaz Moharrer, Post Comprehensive Exam, Human Centered Computing, Chair
Brandon Ables, Third semester, Human Centered Computing, Chair
Gabriella Waters, Second Semester, Human Centered Computing, Chair

Committee Member
Kirk Crawford, Post Comprehensive Exam, Human Centered Computing, Committee Member
Elmira Deldari, Post Comprehensive Exam, Human Centered Computing, Committee Member
Jwawon Seo, Defended Dissertation August 2024, Human Centered Computing, Committee Member
Lydia Stamato, Defended Dissertation December 2024, Human Centered Computing, Committee Member
Hee-Ra Lee, Graduated January 2022, Human Centered Computing, Committee Member
Faisal Quader, Graduated November 2020, Information Systems, Committee Member
Sidas Saulynas, Graduated June 2020, Human-Centered Computing, Committee Member
Yuanyuan Feng, Graduated November 2019, Information Systems, Committee Member

Research Mentor
Spring 2017, Heera Lee, Independent Study, Human-Centered Computing.
Fall 2019, Vasundhara Misal, Independent Study, Human-Centered Computing.
Independent Study, Fall 2021, Vasundhara Misal, Human-Centered Computing.
Fall 2022, 2023, Spring 2023, Independent Study, Golnaz Moharrer, Human-Centered Computing.
Spring 2023, Asha Kumar, Independent Study, Human-Centered Computing.
Fall 2023, 2024 Brandon Ables, Independent Study, Human-Centered Computing.

Masters Students

Thesis Committee Chair – Graduated
Kavya Rajendran, **Graduated** December 2024, Human Centered Computing, **Chair**
Shuyi Tseng, **Graduated** May 2021, Human Centered Computing, **Chair**
Vaishnavvi Viswanathan, **Graduated** July 2020, Human Centered Computing, **Chair**
Lydia Stamato, **Graduated** April 2020, Human Centered Computing, **Co-chair**
Kyriakos Spiliotopoulous, **Graduated** 2009, University College London Interaction Centre, **Co-chair**.

Thesis Committee Chair – In Progress
Kavya Rajendran, Human Centered Computing, Defense Fall 2024, Chair

External Examiner
Benjamin Stephens-Fripp, **Graduated** 2017, University of Wollongong NSW, Australia, **M.Phil External Reviewer**.

Research Mentor
Jay Boring, Research Assistant, Spring 2016, Human Centered Computing.
Pablo van Winkle, Research Assistant, Fall 2016 – Spring 2017, Human Centered Computing.
Carly Stum, Independent Study, Spring 2016, Richard Kummer, Human-Centered Computing.
Chelsea Hunt, Independent Study, Spring 2016, Jay Boring, Human-Centered Computing.
Kaitlin Ricker, Independent Study, Spring 2017, Human-Centered Computing.
Pablo van Winkle, Independent Study, Spring 2017, Information Systems.
Sanaz Taherzadeh, Research Assistant, Spring 2019 – Spring 2022, Emergency Health Services M.S.
Chintan Jani, Independent Study, Fall 2021, Human-Centered Computing.
Kallie Laspesa, Independent Study, Fall 2021, Human-Centered Computing.
Rosario Del Carmen Roque, Independent Study, Spring 2022, Human-Centered Computing.
Tara Urso, Independent Study, Fall 2023, Human-Centered Computing.
Nisha Anthraper, Research Assistant, Spring 2023-present, Human Centered Computing.
Prachee Javiya, Research Assistant, Spring 2023-present, Human Centered Computing.
Jennifer Posada, Research Assistant, Spring 2023, Human Centered Computing.

Undergraduate Students

Capstone Mentor
May 2020 – May 2021, Andrew Park, **Graduated**, Interdisciplinary Studies, **Capstone Mentor**.

Scholar Mentor
Bailey Rouk, Research Assistant, URAS, CWIT Cyber Scholar, Spring 2016, Computer Science, Mentor.
Emily Yu, Research Assistant, CWIT Scholar, Spring 2016, Computer Science, Mentor.
Darren Stevens II, Research Assistant, Meyerhoff Scholar, 2017–2019, Computer Science, Mentor.
Arjun Sharma, Research Assistant, STEM Build, Spring 2018 – Fall 2019, Biology/Psychology, Mentor.
Yasmin Graham, Research Assistant, MARC U*STAR, 2018–2019, Mechanical Engineering, Mentor.
Karina Lopez, CWIT Cyber Scholar Research Assistant, 2019, Information Systems, Mentor.
Leann Alhashishi, Research Assistant, Spring 2023, Computer Science, Mentor.

REU Mentor
Gabriella Han, CRA-W Distributed Research Experience for Undergraduates (DREU), Summer 2018, Computer Science (Carnegie Mellon University), Mentor.
Liel Nassif, Research Assistant, SURE, Spring 2018, Psychology, Mentor.
Min Chon, NSF REU, Summer 2019, Computer Science, Mentor.
Megan Palmer, NSF REU, Summer 2019, Social Work, Mentor.
Brian Beach, NSF REU, Summer 2021, Computer Science (University of Missouri), Mentor.

Research Mentor
Hannah Jang, Research Assistant, Spring 2016, Psychology, Mentor.
Hannah McGowan, Research Assistant, Summer 2017 – Fall 2019, Biology, Mentor.

Tiffany Worsley, Research Assistant, Spring 2018, Psychology, Mentor.
John Lee, Independent Study, Spring 2019, Business Technology Administration, Mentor.
Olutoye Sekiteri, Research Assistant, Spring 2020 – May 2021, Information Systems, Mentor.
Harshita Bommireddypalli, Research Assistant, Spring 2020 – May 2021, Information Systems, Mentor.
Paulina Captan, Research Assistant, Fall 2021, Bioinformatics and Computational Biology, Mentor.
Eyadel Betru, Research Assistant, Fall 2021, Business Technology Administration, Mentor.
Sindhoori Mukka, Independent Study, Fall 2021, Information Systems, Mentor.
Anu Olutoye, Research Assistant, Spring 2023, Information Systems, Co-Mentor.
Olapeju Otusajo, Research Assistant, Spring 2024, Information Systems, Mentor.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

It is the convention in my field to order author names by contribution and for the primary author's name to appear first. If the authors contributed equally, then names are listed in alphabetical order. My standard practice when working with students is to list the student's name(s) first, and the faculty advisor(s) last. Graduate students are notated with an asterisk (*) and undergraduate students are notated with a caret (^) in the list below. Shared first-authorship is notated with a section sign (§). Medical collaborators are notated with a dagger (†) in the list below.

Peer-Reviewed Works

The top conferences in Human-Computer Interaction (HCI) and Affective Computing are highly selective Association for Computing Machinery (ACM) conferences and Institute of Electrical and Electronics Engineers (IEEE) and intended for archival papers. These conferences exceed many HCI journals in their selectivity, visibility, and impact with typical acceptance rates ranging from 20% to 35%. For a study of the impact of ACM conference proceedings, see Conference Paper Selectivity and Impact: http://dl.acm.org/citation.cfm?id=1743546.1743569.

Peer-Reviewed Journal Articles

[J17] *Semsar, A., *McGowan, H., Feng, Y., †Zahiri, H.R., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2020). Quality of and Attention to Instructions in Telementoring, *Proceedings of the ACM on Human Computer Interaction (PACM: HCI), 4, CSCW2, p1-21.*

[J16] *Feng, Y., *McGowan, H., *Semsar, A., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2019). Virtual Pointer for Gaze Guidance in Laparoscopic Surgery, *Surgical Endoscopy,* 1-7. DOI:10.1007/s00464-019-07141-x

[J15] *Semsar, A., *McGowan, H., Feng, Y., †Zahiri, H.R., †Park, A., **Kleinsmith, A.,** & Mentis, H. (2019). How Trainees Use the Information from Telepointers in Remote Instruction. *Proceedings of the ACM on Human Computer Interaction (PACM: HCI)*, 3, CSCW, p.1-20. DOI: 10.1145/3359195.

[J14] Greatbatch, I., Koester, R. J., & **Kleinsmith, A.** (2018). Rescue responses during a full moon and Friday 13th. *International Journal of Emergency Services,* DOI:10.1108/IJES-12-2017-0066.

[J13] *Feng, Y., *McGowan, H., *Semsar, A., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2018). A virtual pointer to support the adoption of professional vision in laparoscopic training. *International Journal of Computer Assisted Radiology and Surgery*, 13(9), 1463-1472, DOI:10.1007/s11548-018-1792-9.

[J12] Hirumi, A., Johnson, K., **Kleinsmith, A.**, Reyes, R., Rivera-Gutierrez, D., Kubovec, S., Bogert, K., Lok, B. and †Cendan, J. (2017). Advancing virtual patient simulations and experiential

learning with InterPLAY: Examining how theory informs design and design informs theory. *Journal of Applied Instructional Design*, 6(1), 49-65.

[J11] Robb, A., **Kleinsmith, A.,** Cordar, A., White, C., †Wendling, A., Lampotang, S., & Lok, B. (2016). Training together: how another human's presence affects behavior during virtual human-based team training, *Frontiers in ICT*, 3(17). DOI:10.3389/fict.2016.00017.

[J10] Robb, A., **Kleinsmith, A.,** Cordar, A., White, C., Lampotang, S., †Wendling, A., & Lok, B. (2016). Do variations in agency indirectly affect behavior with others? An analysis of gaze behavior, *IEEE Transactions on Visualization and Computer Graphics,* 22(4), 1336-1345. DOI:10.1109/TVCG.2016.2518405.

[J9] Hirumi, A., **Kleinsmith, A.,** Johnsen, K., Kubovec, S., Eakins, M., Bogert, K., Rivera-Gutierrez, D., Reyes, J., Lok, B., †Cendan, J. (2016). Advancing virtual patient simulations through design research and InterPLAY: Part I - design and development, *Educational Technology Research and Development,* 64(4), 763-785. DOI: 10.1007/s11423-016-9429-6.

[J8] Hirumi, A., Johnson, T., Reyes, J., Lok, B., Johnsen, K. Bogert, K., Kubovec, S., Eakins, M., Rivera-Gutierrez, D., **Kleinsmith, A.,** †Bellew, M., †Cendan, J. (2016). Advancing Virtual patient simulations through design research and InterPLAY: Part II – integration and field test, *Educational Technology Research and Development*, 64(6), 1301-1335. DOI:10.1007/s11423-016-9461-6.

[J7] **Kleinsmith, A.,** Rivera-Gutierrez, D., †Finney, G., †Cendan, J., & Lok, B. (2015). Understanding empathy training with virtual patients, *Computers in Human Behavior,* 52, 151-158. DOI:10.1016/j.chb.2015.05.033.

[J6] **Kleinsmith, A.,** Gillies, M. (2013). Customizing by doing for responsive video game characters, *International Journal of Human Computer Studies,* 71(7-8), 775-784. DOI:10.1016/j.ijhcs.2013.03.005.

[J5] **Kleinsmith, A.** & Bianchi-Berthouze, N. (2012). Affective body expression perception and recognition: A survey, *IEEE Transactions on Affective Computing,* 4(1), 15-33. DOI: 10.1109/T-AFFC.2012.16. (711 citations)

[J4] **Kleinsmith, A.,** Bianchi-Berthouze, N., & Steed, A. (2011). Automatic recognition of non-acted affective postures, *IEEE Transactions on Systems, Man, and Cybernetics Part B*, 41(4), 1027-1038. DOI:10.1109/TSMCB.2010.2103557. (173 citations)

[J3] **Kleinsmith, A.,** & De Silva, P.R., & Bianchi-Berthouze, N. (2006). Cross-cultural differences in recognizing affect from body posture, *Interacting with Computers,* 18(6), 1371-1389. DOI: 10.1016/j.intcom.2006.04.003. (219 citations)

[J2] **Kleinsmith, A.,** Fushimi, T., Takenaka, H., & Bianchi-Berthouze, N. (2003). Towards bi-directional affective human-machine interaction, *Special issue of the Journal of 3DForum Society,* 17(4), 61-66.

[J1] Bianchi-Berthouze, N. & **Kleinsmith, A.** (2003). A Categorical approach to affective gesture recognition, *Connection Science special issue on Epigenetic Robotics: Modeling Cognitive Development in Robotic Systems,* 15(4), 259-269. DOI: 10.1080/09540090310001658793. (107 citations)

Peer-Reviewed Conference Proceedings

[C28] *Surely, A., *Misal, V., *Taherzadeh, S., †Williams, G., Mentis, H., **Kleinsmith, A**. (submitted). Navigating Stress Data Sharing: Guardrails for Effective Physiological Data Sharing in High-Stress Training Environments*, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*.

[C27] *Surely, A., *Misal, V., *Taherzadeh, S., †Williams, G., Mentis, H., **Kleinsmith, A**. (2024). Design and Preliminary Evaluation of a Stress Reflection System for High-Stress Training Environments, *ICMI Companion Proceedings.*

[C26] *Javiya, P., **Kleinsmith, A**., Chen. L., Fritz, J. (2024). Parsing Post-Deployment Students' Feedback: Towards a Student-Centered Intelligent Monitoring System to Support Self-Regulated Learning, *International Conference on Artificial Intelligence in Education (AIED)*. DOI: 10.1007/978-3-031-64315-6_11

[C25] *Surely, A., *Misal, V., *Taherzadeh, S., †Williams, G., †Jenkins, JL, Mentis, H., **Kleinsmith, A**. (2024). Enhancing Stress Understanding through Team Reflection: Technology-Driven Insights in High-Stress Training Scenarios. *Proceedings of the 3rd Annual Meeting of the Symposium on Human-Computer Interaction for Work (CHIWORK) (pp. 1-18).*

[C24] *Anthraper, N., *Javiya, P., *Iluru, S., Chen. L., **Kleinsmith, A**. (2024). PeerConnect: Co-designing a Peer-Mentoring Support System with Computing Transfer Students. *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI).*

[C23] *Surely, A., *Taherzadeh, S., *Misal, V., **Kleinsmith, A**. (2022). Exploring Affective Dimension Perception from Bodily Expressions and Electrodermal Activity in Paramedic Simulation Training. *In 2022 10th Int'l Conference on Affective Computing and Intelligent Interaction (ACII)* (pp. 1-8). IEEE.

[C22] *Misal, V., *Taherzadeh, S., *Surely, A., *McGowan, H., †Williams, G., †Jenkins, JL, Mentis, H., **Kleinsmith, A**. (2020). Exploring Links Between Physiologic Synchrony, Stress and Communication of Paramedic Trainees During In-Situ Emergency Response Training, *Extended Abstract in Proceedings of the ACM International Conference on Multimodal Interaction (ICMI).*

[C21] Lee, H., Mandalapu V., Gong, J., **Kleinsmith, A**., Kuber, R. (2020). Multimodal Data Analysis among Deaf or Hard of Hearing of English Language Learners While Delivering Presentations in Class with Hearing Students, *Extended Abstract in Proceedings of the ACM International Conference on Multimodal Interaction (ICMI).*

[C20] Lee H., Mandalapu V., **Kleinsmith A.**, Gong J. (2020) Distinguishing Anxiety Subtypes of English Language Learners Towards Augmented Emotional Clarity, Artificial Intelligence in Education. *Proceedings of the International Conference on Artificial Intelligence in Education (AIED)*. LNCS:12164. Springer. DOI:10.1007/978-3-030-52240-7_29

[C19] *Semsar, A., *McGowan, H., Feng, Y., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., Mentis, H.M., and **Kleinsmith, A.** (2019). Effects of a Virtual Pointer on Trainees' Cognitive Load and Communication Efficiency in Surgical Training, *AMIA Annual Symposium Proceedings (Vol, 2019, p. 1197-1206). American Medical Informatics Association.*

[C18] Feng, Y., Li, K., *Semsar, A., *McGowan, H., Mun, J., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2019). Communication Cost of Single User Gesturing Tool in Laparoscopic Surgical Training, *ACM SIGCHI Conference on Human Factors in Computing Systems (CHI),* 1-12.

[C17] **Kleinsmith, A**., *Semsar, A. (2019). Perception of Emotion in Body Expressions from Gaze Behavior, *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI).*

[C16] *Lee, H. & **Kleinsmith, A**. (2019). Public Speaking Anxiety in a Real Classroom: Towards Developing a Reflection System, *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI).*

[C15] Raiturkar, P., **Kleinsmith, A.,** Keil, A. Banerjee, A., & Jain, E. (2016). Decoupling Light Reflex from Pupillary Dilation to Measure Emotional Arousal in Videos, *Proceedings of the ACM Symposium on Applied Perception,* pp. 89-96.

[C14] Rivera-Gutierrez, D., **Kleinsmith, A.,** Childs, G., Pileggi, R. & Lok, B. (2016). Self-Assessment Through Interactive In-Action Reflections to Improve Interpersonal Skills Training, *Proceedings of the IEEE Conference on Advanced Learning Technologies* pp.143-147. (29% acceptance rate).

[C13] Gillies, M., **Kleinsmith A.,** & Brenton, H. (2015). Applying the CASSM framework to improving end user debugging of interactive machine learning, *Proceedings of the ACM Conference on Intelligent User Interfaces*, pp. 181-185. (23% acceptance rate).

[C11] Rivera-Gutierrez, D. Kopper, R., **Kleinsmith, A.,** Finney, G., Cendan, J., & Lok, B. (2014). Exploring gender biases with virtual patients for high stakes interpersonal skills training, *Proceedings of the Conference on Intelligent Virtual Agents* pp. 385-396. (18% acceptance rate)

[C10] Rivera-Gutierrez, D., **Kleinsmith, A.,** Johnson, T., Cendan, J., & Lok, B. (2014). Towards a reflective practicum of virtual human interactions, *Proceedings of the IEEE Conf on Advanced Learning Technologies* (pp. 694-698). 10.1109/ICALT.2014.202 (23% acceptance rate).

[C8] **Kleinsmith, A.,** & Bianchi-Berthouze, N. (2011). Form as a cue in the automatic recognition of non-acted affective body expressions, *Proceedings of the Conference on Affective Computing and Intelligent Interaction,* LNCS:6974 (pp. 155-164). (36% acceptance rate).

[C7] Meng, H., **Kleinsmith, A.,** & Bianchi-Berthouze, N. (2011). Multi-score learning for affect recognition: The case of body postures, *Proceedings of the Conference on Affective Computing and Intelligent Interaction,* LNCS:6974, (pp. 225-234). (36% acceptance rate).

[C6] **Kleinsmith, A.,** & Bianchi-Berthouze, N. (2010). Modelling non-acted affective posture in a video game scenario, *Proceedings of the Conference on Kansei Engineering and Emotion Research,* (pp. 1964-1974).

[C5] **Kleinsmith, A.,** & Bianchi-Berthouze, N. (2007). Recognizing affective dimensions from body posture, *Proceedings of the Conference on Affective Computing and Intelligent Interaction,* LNCS:4738, 48-58. (38% acceptance rate). (166 citations).

[C4] **Kleinsmith, A.,** & De Silva, P.R., & Bianchi-Berthouze, N. (2005). Recognizing emotion from postures: Cross-cultural differences in user modeling, *Proceedings of the Conference on User Modeling,* LNAI:3538, (pp. 50-59). (23% acceptance rate).

[C3] **Kleinsmith, A.,** & De Silva, P.R., & Bianchi-Berthouze, N. (2005). Grounding affective dimensions into posture features, *Proceedings of the Conference on Affective Computing and Intelligent Interaction,* LNCS:3784, (pp. 263-270).

[C2] De Silva, P.R., **Kleinsmith, A.,** & Bianchi-Berthouze, N. (2005). Towards unsupervised detection of affective body posture nuances, *Proceedings of the Conference on Affective Computing and Intelligent Interaction,* LNCS:3784, (pp. 32-39).

[C1] Bianchi-Berthouze, N., Fushimi, T., Hasegawa, M., **Kleinsmith, A.,** Takenata, H., Berthouze, L. (2003). Learning to recognize affective body postures, *Proceedings of the IEEE Conference on Computational Intelligence for Measurement Systems and Applications,* (pp. 193-198).

Peer-Reviewed Workshop Papers and Poster Presentations

[P5] * Bommireddypalli, H. and **Kleinsmith, A.** (2021). Talk it Out: Development of a Reflection App for Paramedic Trainees, *Society for Affective Science Annual Conference.*

[P4] *McGowan, H., *Graham, Y., †Williams, G., †Jenkins, J.L., Mentis, H.M., and **Kleinsmith, A.** (2019). Paramedic Team Emotional Intelligence and its Impact on Performance During Simulation Training, *Prehospital Care Research Forum at EMS World.* (**Best Oral Presentation**).

[P3] *McGowan, H., Feng, Y., *Semsar, A., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2019). Virtual Pointer as a Telementoring Guidance Aid for Laparoscopic Surgery, *Proceedings for the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES).*

[P2] *McGowan, H., Feng, Y., *Semsar, A., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2019). Virtual Pointer for Clarity in Telementoring, *Proceedings for the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES).*

[P1] Feng, Y., *McGowan, H., *Semsar, A., †Zahiri, H.R., †George, I.M., †Turner, T., †Park, A., **Kleinsmith, A.** and Mentis, H.M. (2018). Virtual Pointer for Gaze Guidance in Laparoscopic Surgery, *Proc Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)*.

[W6] Gillies, M., Brenton, H., & **Kleinsmith, A.** (2015). Embodied design of full-bodied interaction with virtual humans, *Proceedings of the Workshop on Movement and Computing* (pp. 1-8). ACM.

[W5] Gillies, M. & **Kleinsmith A.** (2014). Embodied design of dance visualisations, *Proceedings of the Workshop on Movement and Computing* (p. 124). ACM.

[W4] **Kleinsmith, A.,** Bianchi-Berthouze, N., & Berthouze, L. (2006). An effect of gender in the interpretation of affective cues in avatars, *Proceedings of Workshop on Gender and Interaction: Real and Virtual Women in a Male World, In conjunction with Advanced Visual Interfaces.*

[W3] **Kleinsmith, A.** & Bianchi-Berthouze, N. (2006). Affective posture recognition: human factors and modelling, *Proceedings of the Doctoral Consortium of British HCI.*

[W2] **Kleinsmith, A.** Fushimi, T., & Bianchi-Berthouze, N. (2005). An incremental and interactive affective posture recognition system, *Proceedings of Workshop on Adapting the Interaction Style to Affective Factors, In conjunction with User Modeling* (pp. 378-387).

[W1] **Kleinsmith, A.** & Bianchi-Berthouze, N. (2003). Towards learning affective body gesture, *Proceedings of the Workshop on Epigenetic Robotics* (pp. 169-170).

Peer-Reviewed Demos

[D1] **Kleinsmith, A.**, Rivera-Gutierrez, D., and Lok, B. (2014). NERVE: Neurological Examination Rehearsal Virtual Environment, *International Conference on Intelligent Virtual Agents*.

Non-Peer-Reviewed Works

Conference Proceedings

[NC1] Stamato, L., Kleinsmith, A., & Massey, A. (2020). Emotions, Computing, and Privacy: Developing an Ethical Framework for Designing Affective Computing Systems, *Privacy Law Scholars Conference*.

Book Chapters

[B2] Dael, N. Bianchi-Berthouze, N., **Kleinsmith, A.** & Mohr, C. (2016). Measuring body movement: Proxemics, action, posture, and gait. In D. Matsumoto, H. C. Hwang, and M. G. Frank (Eds.), *APA Handbook of Nonverbal Communication* (pp. 551-587). APA Press.

[B1] Bianchi-Berthouze, N. & **Kleinsmith, A.** (2014). Automatic recognition of affective body expressions. In R. Calvo, S. D'Mello, J. Gratch, and A. Kappas (Eds.), *The Oxford Handbook of Affective Computing* (pp. 151-169), Oxford University Press. DOI: 10.1093/oxfordhb/9780199942237.013.025.

Interviews

Hanks-Mastrola, M. (2019, October). In Service. For Association of Public Land Grant Universities.

Media Coverage

Hanks, M. As demand for telemedicine swells, UMBC researchers develop strategies to scale-up services, UMBC News, October 8, 2020 https://news.umbc.edu/as-demand-for-telemedicine-swells-umbc-researchers-develop-strategies-to-scale-up-services/

Hanks Mastrola, M. Wearable sensors and infrared cameras: introducing UMBC's user studies lab, UMBC News, February 5, 2020. https://news.umbc.edu/wearable-sensors-and-infrared-cameras-introducing-umbcs-user-studies-lab/

Hanks Mastrola, M. UMBC researchers work to support first responders through NSF-funded stress-response technology, UMBC News, January 2020. https://news.umbc.edu/umbc-researchers-work-to-support-first-responders-through-nsf-funded-stress-response-technology/

Hanks Mastrola, M. Communication support technology for training surgeons has promising results, EurekAlert, November 2019. https://www.eurekalert.org/pub_releases/2019-11/uomb-cst111819.php.

Hanks, M. Urgent Care, UMBC Magazine, June 2019. https://magazine.umbc.edu/tackling-disparities-related-to-healthcare-and-care-access/

Presentations

The following presentations are in addition to the accompanying presentation of the conference and workshop papers listed above.

Invited Talks

Speaker, *"Interactive Systems Research Center,"* Information Systems Department Seminar Series, December 2021.

Speaker, *"Stressing Connections – Designing for Affective Awareness,*" GRIT-X In Person, UMBC, October 2021.

Speaker, *"Wearable Sensors and Infrared Cameras: Fostering Interdisciplinary Research at UMBC,"* Summer STEM: Lunch and Learn, UMBC, July 2020.

Organizer and Speaker, *"Interactive Systems Research Center Kickoff,"* Information Systems Department, January 2020.

Speaker, *"Stress Reflection Systems for Medical Team Training,"* UMBC COEIT Advisory Board Meeting, September 2018.

Speaker, *"Virtual Human Training Systems: From Understanding Human Behavior to Modeling Users' Emotional Body Posture,"* Computer Science Department, University of Central Florida, April 2015.

Speaker, *"Understanding Human Behavior: From Virtual Humans to Emotional Body Expressions,"* College of Engineering, Computing and Applied Sciences, Clemson University, February 2015.

Speaker, *"Understanding and Modeling Human Behavior: From Emotion Recognition to Training with Virtual Humans,"* School of Computing and Information Sciences, Florida International University, January 2015.

Speaker, *"Understanding and Designing for Users: From Recognizing Affective cues to Interacting with Virtual Humans,"* Visualization Forum, Computer Science Department, Duke University, October 2013.

Speaker, *"Grounding Affect Recognition on a Low-Level Description of Body Posture,"* Visualization and Interaction (VIBE) Research Group, Microsoft Research, May 2012.

Panels

Panelist, *"ePortfolios: A Promising (and Challenging) High-Impact Practice,"* Faculty Development Center, March 2023.

Panelist, *Faculty ADVANCEment Workshop: Tenure Process,* UMBC, April 2022

Panelist, *UMBC Pandemic Preparedness Research in Information Systems*, Virtual, November 2020

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Leadership Roles

2024 – present Co-Lead, National Institute of Student Success at UMBC, Communications Workgroup
2022 – present Graduate Program Director, Human Centered Computing M.S. and Ph.D.
2021 Liaison for Research Innovations, Fall 2021
2018 – 2023 Director, Interactive Systems Research Center, Information Systems Department, UMBC https://isrc.umbc.edu.

Departmental Service

2024 – 2025 Mentoring and Retention Round Table Committee Member
2023 – 2024 IS Department Multiple TT Track Faculty Search Committee Chair

2022 IS Department Broadening Participation in Computing Plan Development Chair
2022 – present HCC Graduate Program Committee Chair
2022 IS Department Research Symposium Judge
2022 – 2023 IS Department Research Committee Member
2021 – 2022 IS Department Visioning Committee Member
2021 – 2022 Launch Committee Tera Reynolds Chair
2021 IS Department Research Committee Chair
2020 – 2021 IS Department Online IS MS Search Committee Member
2019 – 2020 IS Department Open Rank Search Committee Member
2019 – 2021 IS Department Research Committee Member
2018 – 2019 IS Department HCC Search Committee Member
2018 – 2022 HCC Graduate Program Committee Member
2018 IS Department Merit Review Committee Member
2017 – 2018 IS Graduate Program Committee Member
2017 – 2018 IS Department Library Committee Member
2016 – 2017 IS Department AI Search Committee Member
2016 – present Academic advising HCC MS
2016 Academic advising IS MS
2016 IS Department Research Symposium Judge
2015 – present HCC and IS Graduate Admissions Committee Member

College Service

2022 – 2023 COEIT Cluster Search on Renewable Energy and Sustainability Committee Member, Ex Officio
2022 COEIT ASEE Diversity Recognition Program, Led the Silver Application
2021 COEIT Director of Shared Services Interviewer
2020 America East Symposium for Graduate Programs in Engineering & Computing

University Service

2024 – present Hrabowski Innovation Fund Review Committee Member
2022 – 2023 Visual Arts Department Search Committee Member
2022 UMBC Communications Manager Hiring Committee Member
2022 Imaging Research Center, Faculty Research Fellowship Review Committee Member
2021 – present Imaging Research Center Advisory Board Member
2021 – present Interdisciplinary Studies Committee Member
2021 START FY22 Review Committee Member
2017 – 2019 Imaging Research Center Advisory Board Member
2016 – present Undergraduate Research Award Committee Member
2016 Southern Regional Education Board, UMBC attendance at The Institute of Teaching & Mentoring

Professional Service

Teaching and Mentoring Activities

2021 Mentor/Instructor, Computing and Engineering Transfer Institute Summer Program (Inaugural)
2020 Mentor, University of Maryland, College Park, Data Challenge

2017 Doctoral Consortium Panelist, IEEE Conference on Automatic Face and Gesture Recognition

International Funding Panel Reviewing

2024 – present Fulbright U.S. Student Program National Screening Committee Member
2024 Polish National Science Center Grant Reviewer
2022, 2024 European Research Council (ERC) Consolidator Grant Reviewer
2016 Dutch Research Council Reviewer

National Funding Panel Reviewing

2023 NSF CAREER proposal ad hoc reviewer.
2022 NSF EWF proposal review panel
2022 NSF Proposal ad hoc reviewer
2021 NSF FOW proposal review panel
2020 NSF CHS proposal review panel
2018 NSF CHS proposal review panel
2013 NSF proposal review panel

Journal Guest Associate Editor

2019 – 2021 IEEE Transactions on Affective Computing Special Issue on Best of Affective Computing and Intelligent Interaction 2019
2018 – 2020 ACM Transactions on Interactive Intelligent Systems Special Issues on Data-Driven Personality Modeling for Intelligent Human-Computer Interaction

Editorial Board

2014 – present Frontiers in ICT: Human-Media Interaction

Conference and Workshop Leadership - *Year refers to year of conference*

2024 Workshop Co-organizer, Reflection Retreat, UMBC.
2021 Workshop Organizer, The Future of Telemedicine in Emergency Medicine and Training
2019 Program Co-chair, IEEE Affective Computing and Intelligent Interaction (ACII)
2018 Doctoral Consortium Co-chair, Intelligent User Interfaces (IUI)

Program Committees

2017, 2018 PC Member, ACM Symposium on Spatial User Interaction (SUI)
2016 PC Member, IEEE Int'l Conference on Automatic Face and Gesture Recognition (FG)
2016 PC Member, ACM International Conference on Multimodal Interaction (ICMI)
2016 PC Member, ACM Symposium on Applied Perception (SAP)
2016 PC Member, International Symposium on Movement & Computing (MOCO)
2015 PC Member, Int'l Conference on Affective Computing & Intelligent Interaction (ACII)
2015 PC Member, Int'l Conference on Autonomous Agents & Multiagent Systems (AAMAS)
2014 PC Member, International Conference on Intelligent Virtual Agents (IVA)

Journal Reviewing

2022 Computing Surveys
2020 – present BMC Medical Education

2018	The Visual Computer
2017	Personal and Ubiquitous Computing
2017	Motivation and Emotion (MOEM)
2016	Computers
2016	Infrared Physics & Technology
2015 – present	IEEE Transactions on Affective Computing (TAFFC)
2015 – present	Frontiers in Psychology, Human-Media Interaction
2015	International Journal of Distributed Sensor Networks
2014	Frontiers in Behavioral Neuroscience
2014 – present	ACM Transactions on Interactive Intelligent Systems (TiiS)
2014, 2015	IEEE Transactions on Human-Machine Systems (THMS)
2014	Expert Systems with Applications
2014 – 2016	Knowledge-Based Systems
2014	International Journal of Human-Computer Studies (IJHCS)
2013	IEEE Transactions on Fuzzy Systems
2013, 2016	Virtual Reality
2012	IEEE Transactions on Systems, Man, and Cybernetics, Part B
2011	Neurocomputing
2010, 2011	Entertainment Computing
2006	Connection Science

Conference Reviewing - Year refers to year of conference

2020 – present	ACM Annual Conference on Computer Supported Cooperative Work
2019	IEEE Virtual Reality (VR)
2018	ACM Symposium on Applied Perception (SAP)
2016 – present	ACM Symposium on Spatial User Interaction (SUI)
2015	Virtual Reality Software and Technology
2014 – present	ACM Annual Conference on Human Factors in Computing Systems (CHI)
2014	Intelligent Virtual Agents (IVA)
2013	IEEE Symposium on 3D User Interfaces (3DUI)
2013 – present	Affective Computing and Intelligent Interaction (ACII)
2010	MexIHC Workshop on Human-Computer Interaction
2005	Cognitive Science Workshop
2004	Workshop on Epigenetic Robotics

Membership in Professional Societies

2021 – present	Society for Affective Science
2017 – present	Association for Computing Machinery
2009 – present	Association for the Advancement of Affective Computing

The attached curriculum vitae is complete and accurate.

Signature: _____

Printed Name: **Andrea Kleinsmith**

Date: _____

CURRICULUM VITAE

YASMINE KOTTURI

EDUCATION

Ph.D.	2022	Carnegie Mellon University, Human-Computer Interaction
M.S.	2020	Carnegie Mellon University, Human-Computer Interaction
B.S.	2014	University of California, San Diego, Cognitive Science

Experience in Higher Education

2024 - Present	University of Maryland, Baltimore County, Assistant Professor, Information Systems
2022-2024	Carnegie Mellon University, Postdoctoral Scholar, Human-Computer Interaction
2016-2022	Carnegie Mellon University, Graduate Research Assistant, Human-Computer Interaction
2020-2021	Carnegie Mellon University, Graduate Teaching Assistant, Software Engineering
2016-2016	Massachusetts Institute of Technology, Research Fellow, Teaching Systems Lab
2015-2016	UC San Diego, Graduate Research Assistant, Computer Science
2015-2016	UC San Diego, Graduate Teaching Assistant, Computer Science
2014-2015	UC San Diego, Research Assistant, Design Lab
2013-2014	UC San Diego, Research Assistant, Cognitive Science
2012-2013	UC San Diego, Research Assistant, Psychology

Experience in Other than Higher Education

2018-2018	Etsy, Research Fellow
2015-2015	Microsoft Research Asia, Human-Computer Interaction Research Assistant

Honors Received

2024	Consortium for the Science of Sociotechnical Systems (CSST) Fellow
2022	EECC Rising Star
2022	Siebel Scholar
2015	Contributions to Diversity, Computer Science and Engineering, UC San Diego
2014	UC San Diego Cum Laude

Research Support and/or Fellowships

2024-2025	$3,340, UMBC Hrabowski Innovation, P.I. (Submitted)
2024-2025	$1,500, UMBC Supplement for Undergraduate Research Experiences, P.I.
2023-2024	$129,543, National Science Foundation, CO-P.I.
2023-2023	$26,273, National Science Foundation, CO-P.I.
2023-2023	€4,000, Artificial Intelligence Journal, CO-P.I.
2022-2024	$197,044, Virginia Tech Presidential Postdoctoral Fellowship
2022-2024	$120,000, Cornell Tech Ignite Venture Postdoctoral Fellowship
2021-2022	$50,000, Work in the Age of Intelligent Machines (WAIM) Fellowship
2021-2022	$35,000, Siebel Foundation Fellowship
2020-2021	$99,497, Meta, Inc., Research Fellowship

Ph.D. Students

Kirk A. Crawford (Est. graduation 2026), Ph.D. Committee Member

Master's Students

Kaoru Seki (Est. graduation 2025), Master's Thesis Chair

Undergraduate Students

Quentin Romero Lauro, BizChat: Building Resilience in Generative AI Use among Minority Small Business Owners, 2023-present, Advisor.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Peer-Reviewed Works

- **Journal Articles**

1. Friedman, N., Bremmers, A., Nyanyo, A., Clark, I., Kotturi, Y., Dabbish, L., Ju, W., Martelaro, N. Understanding the Challenges of Maker Entrepreneurship. 2025. ACM Conference on Computer Supported Cooperative Work. *Accepted for publication.*

2. Kotturi, Y., Yu, J., Khadpe, P., Gatz, E., Zheng, H., Fox, S. E., & Kulkarni, C. (2024). Peerdea: Co-Designing a Peer Support Platform with Creative Entrepreneurs. *Proceedings of the ACM on Human-Computer Interaction*, *8*(CSCW1), 24 pages.

3. Kotturi, Y., Hui, J., Johnson, T. J., Sanifu, L., & Dillahunt, T. R. (2024). Sustaining Community-Based Research in Computing: Lessons from Two Tech Capacity Building Initiatives for Local Businesses. *Proceedings of the ACM on Human-Computer Interaction*, *8*(CSCW1), 31 pages.

4. Kotturi, Y., Blaising, A., Fox, S. E., & Kulkarni, C. (2021). The Unique Challenges for Creative Small Businesses Seeking Feedback on Social Media. *Proceedings of the ACM on Human-Computer Interaction*, *5*(CSCW1), 27 pages.

5. Blaising, A., Kotturi, Y., Kulkarni, C., & Dabbish, L. (2021). Making it work, or not: A longitudinal study of career trajectories among online freelancers. *Proceedings of the ACM on Human-Computer Interaction*, *4*(CSCW3), 29 pages.

6. Edge, D., Yang, X., Kotturi, Y., Wang, S., Feng, D., Lee, B., & Drucker, S. (2016). Slidespace: Heuristic design of a hybrid presentation medium. *ACM Transactions on Computer-Human Interaction (TOCHI)*, *23*(3), 30 pages.

- **Conference Proceedings**

1. Kotturi, Y., Anderson, A., Ford, G., Skirpan, M., & Bigham, J. P. (2024, May). Deconstructing the Veneer of Simplicity: Co-Designing Introductory Generative AI Workshops with Local Entrepreneurs. In *Proceedings of the CHI Conference on Human Factors in Computing Systems,* 16 pages.

2. Hu, Y., Stegner, L., Kotturi, Y., Zhang, C., Peng, Y. H., Huq, F., Zhao, Y., Bigham J., & Mutlu, B. (2024, July). "This really lets us see the entire world:" Designing a conversational telepresence robot for homebound older adults. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference,* 17 pages.

3. Kotturi, Y., Johnson, H. T., Skirpan, M., Fox, S. E., Bigham, J. P., & Pavel, A. (2022, April). Tech help desk: Support for local entrepreneurs addressing the Long Tail of computing challenges. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems,* 15 pages.

4. Kotturi, Y., Kahng, A., Procaccia, A., & Kulkarni, C. (2020, April). Hirepeer: Impartial peer-assessed hiring at scale in expert crowdsourcing markets. In *Proceedings of the AAAI conference on artificial intelligence* (Vol. 34, No. 03, 7 pages).

5. Kahng, A., Kotturi, Y., Kulkarni, C., Kurokawa, D., & Procaccia, A. (2018, April). Ranking wily people who rank each other. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 32, No. 1), 7 pages.

6. Kotturi, Y., Kulkarni, C. E., Bernstein, M. S., & Klemmer, S. (2015, March). Structure and messaging techniques for online peer learning systems that increase stickiness. In *Proceedings of the Second (2015) ACM Conference on Learning@ Scale*, 8 pages.

7. Kulkarni, C., Cambre, J., Kotturi, Y., Bernstein, M. S., & Klemmer, S. R. (2015, February). Talkabout: Making distance matter with small groups in massive classes. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing*, 8 pages.

- **Posters and Workshops**

1. Romero Lauro, Quentin, Jeffrey P. Bigham, and Yasmine Kotturi. "Exploring the Role of Social Support When Integrating Generative AI in Small Business Workflows." *Companion Publication of the 2024 Conference on Computer-Supported Cooperative Work and Social Computing*. 2024.

2. Liang, C. A., Tseng, E., Dewitt, A., Kotturi, Y., Ghoshal, S., Smith, A. D., Wong-Villacres, M., Wilcox, L., Erete, S. (2023, October). Surfacing Structural Barriers to Community-Collaborative Approaches in Human-Computer Interaction. In *Companion Publication of the 2023 Conference on Computer Supported Cooperative Work and Social Computing* (pp. 542-546).

3. Hui, J., Cranshaw, J., Kotturi, Y., & Kulkarni, C. (2019, November). The Future of Work (places) Creating a Sense of Place for On-demand Work. In *Companion Publication of the 2019 Conference on Computer Supported Cooperative Work and Social Computing* (pp. 487-491).

4. Kotturi, Y., & Kingston, M. (2019, June). Why do Designers in the" Wild" Wait to Seek Feedback until Later in their Design Process?. In *Proceedings of the 2019 Conference on Creativity and Cognition* (pp. 541-546).

5. Blaising, A., Kotturi, Y., & Kulkarni, C. (2019, May). Navigating uncertainty in the future of work: Information-seeking and critical events among online freelancers. In *Extended abstracts of the 2019 CHI conference on human factors in computing systems* (pp. 1-6).

6. Kotturi, Y., Du, A., Klemmer, S., & Kulkarni, C. (2017, April). Long-term peer reviewing effort is anti-reciprocal. In *Proceedings of the Fourth (2017) ACM Conference on Learning@ Scale* (pp. 279-282).

7. Pandey, V., Kotturi, Y., Kulkarni, C., Bernstein, M. S., & Klemmer, S. (2015, March). Connecting stories and pedagogy increases participant engagement in discussions. In *Proceedings of the Second (2015) ACM Conference on Learning@ Scale* (pp. 253-256).

Works Submitted or In Preparation

- **Conference Proceedings**

1. Romero Lauro, Q., Gautum, A., Kotturi, Y. BizChat: Building Resilience in Generative AI Use among Minority Small Business Owners. 2025. ACM Conference on Designing Interactive Systems. *(In preparation).*

2. Gatz, E., Kotturi, Y., Afua Kwamya, A., Fox, S. A Node on the Constellation: The Role of Feminist Makerspaces in Building and Sustaining Alternative Cultures of Technology Production. 2025. ACM Conference on Computer Supported Cooperative Work. *(Submitted for publication).*

Book Chapters

1. Kulkarni, C., Kotturi, Y., Bernstein, M. S., & Klemmer, S. (2016). Designing scalable and sustainable peer interactions online. *Design Thinking Research: Taking Breakthrough Innovation Home*, 237-273.

Presentations

- **Conference/Poster Presentations (Juried/Refereed)**

- Peerdea: Co-Designing a Peer Support Platform with Creative Entrepreneurs. In the *Proceedings of the ACM on Human-Computer Interaction*. San José, Costa Rica. November 2024.
- Sustaining Community-Based Research in Computing: Lessons from Two Tech Capacity Building Initiatives for Local Businesses. In the *Proceedings of the ACM on Human-Computer Interaction*. San José, Costa Rica. November 2024.
- Deconstructing the Veneer of Simplicity: Co-Designing Introductory Generative AI Workshops with Local Entrepreneurs. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*. Honolulu, Hawai'i. May 2024.
- Tech help desk: Support for local entrepreneurs addressing the Long Tail of computing challenges. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. New Orlean, LA. May 2022.
- The Unique Challenges for Creative Small Businesses Seeking Feedback on Social Media. In *Proceedings of the ACM on Human-Computer Interaction*. Remote. October 2021.
- Structure and messaging techniques for online peer learning systems that increase stickiness. In *Proceedings of the Second (2015) ACM Conference on Learning@ Scale*. Vancouver, British Columbia. April 2015.

- **Invited Talks**

- Community-Based Approaches to Building Peer Support Systems for Work. University of Maryland Human-Computer Interaction Lab, College Park, Maryland. December 2024.
- Community-Based Approaches to Building Peer Support Systems for Work. UMBC Information Systems Department, Baltimore, Maryland. December 2024
- Peerdea: Bolstering the Role of Peer-to-Peer Networks in Early-Stage Product Innovation. Meta Inc (Remote). December 2020.
- The Role of Peer-to-Peer Networks in Early-Stage Product Innovation. Meta, New York City, NY. February 2020.
- Designing Peer Interactions Among Online Workers to Enable Worker-Driven Pursuits. Meta, New York City, NY. November 2018.
- Designing Peer Interactions Among Online Workers to Enable Worker-Driven Pursuits. B12, New York City, NY. November 2018.
- Building Scalable and Sustainable Peer Interactions Online. MIT Teaching Systems Lab, Cambridge, Massachusetts. June 2016.
- Leveraging Studio Model for Creating Peer Assessment Environment Online. Hasso-Plattner Institute, Potsdam Germany. September 2015.
- Using Google Hangouts for Small Discussions in Massive Online Classes. Tsinghua University, Beijing, China. August 2015.

- **Guest Lectures**

Etsy and the Future of Creative Work. Designing the Future of Work: Public Interest Technology Development (EGR 371/ENT 371) Taught by Professor Andrés Monroy-Hernández. February 2024.

The Gig Economy: Technology and Policy. Ethics and Policy Issues in Computing (CMU 17-200). Taught by Laura Danish and Jim Herbsleb. February 2021.

Sketching, Storyboarding, and Prototyping in Design Thinking. Design Thinking for Leading and Learning (MIT 11.155x). Taught by Justin Reich. April 2017.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Service to the Department

2024-2025, Reviewer, IS PhD and HCC PhD Applications, University of Maryland, Baltimore County

Service to the University

2019-2022, Co-founder, The Breakfast Club for Queer and Gender Minorities, Carnegie Mellon University

2019, Reviewer, HCII PhD Admissions Committee, Carnegie Mellon University

2019-2019, Member, Respect and Relationships Committee, Carnegie Mellon University

2018-2020, Member, HCII-Improve, Carnegie Mellon University

2018-2019, Officer, Graduate Queers and Allies, Carnegie Mellon University

2015-2016, Vice President, Graduate Women in Computing, UC San Diego

Service to the Community

2019-2024, Co-founder, Tech Help Desk, Community Forge

Service to the Profession

2025, Associate Paper Chair, ACM Computer-Supported Cooperative Work

2024, Reviewer, ACM Transactions of Human-Computer Interaction

2023, Panelist, National Science Foundation

2023, Associate Paper Chair, ACM Designing Interactive Systems

2023, Scholarships Chair, AAAI HCOMP and ACM Collective Intelligence

2022-2024, Reviewer, ACM Computer-Supported Cooperative Work

2021, Program Committee, ACM Learning @ Scale

2021, Reviewer, ACM Creativity and Cognition

2017-2024, Reviewer, ACM Human Factors in Computing

CURRICULUM VITAE

RAVI ANIL KUBER

EDUCATION

Ph.D. 2008	Queen's University Belfast, UK, Sonic Arts
M.Sc. 2004	University College London, UK, Human-Computer Interaction with Ergonomics
B.Sc. 1999	University College London, UK, Information Management (Honors)

Experience in Higher Education

2024 – 2026	Undergraduate Program Director – Business Technology Administration, UMBC
2019 - 2021	Graduate Program Director - Human-Centered Computing, UMBC
2016	Virginia Commonwealth University, Visiting Associate Professor, Department of Biomedical Engineering
2014 – Present	University of Maryland Baltimore County, Associate Professor (with tenure), Department of Information Systems
2008 – 2014	University of Maryland Baltimore County, Assistant Professor, Department of Information Systems
2004 – 2007	Queen's University Belfast, UK, Teaching Assistant/Demonstrator

Experience in Other than Higher Education

11/1999 - 08/2003	Merrill Lynch International Bank, UK, Analyst/Programmer
06/1999 - 11/1999	Merrill Lynch Investment Bank, USA, Graduate Technology Trainee
06/1998 - 09/1998	Citigroup, UK, Web Developer
06/1997 - 09/1997	Civil Service, UK, Administrative Officer

Honors Received

2015 – 2016	University System of Maryland's PROMISE AGEP Outstanding Faculty Mentor
2004 - 2007	Special Research Scholarship, Queen's University Belfast

2001 Merrill Lynch Technology Recognition Award

Research Support and/or Fellowships

External Funding – Awarded (including no-cost extensions)

2024 $3000, Introducing Middle and High School Students who are Blind and Visually Impaired to Computing at UMBC, PI (May 2024)

2021- 2024 $404,932, REU Site: Research Experiences for Undergraduates in Smart Computing & Communications (PI: Roy). NSF, Senior Personnel

2019 – 2021 $269,430, University Mobility Challenge: Designing Wayfinding Technologies that Blind and Older Individuals Can Trust, Toyota, PI.

2018 – 2019 $84,540, Maryland Industrial Partnerships (MIPS) and TRX Systems Ltd. "Smart Wayfinding and Navigation Using 3D Location". *Originally awarded to PI Branham in 2018 and taken over by PI Kuber in 2018.*

2017 – 2020 $356,657, National Science Foundation, Co-PI (PI: Lutters). "II-New: Flexible User Interaction Instrumentation for Ubiquitous and Immersive Computing Environments".

2016 – 2018 $67,244, National Institute of Standards and Technology, UMBC P.I. "Prediction of Imminent Unsafe Temperatures and Notification through Wearable Tactile Technology" (Subaward from Virginia Commonwealth University, UMBC P.I. Share: $25,000).

2015 – 2019 $378,164, Office of Naval Research, P.I. "Tactile Authentication Methods for Mobile Devices in Cyber-Security Settings" (UMBC P.I. Share: $333,834).

2013 – 2015 $96,001, National Science Foundation EAGER, P.I., "Enhancing Mobile Users' Levels of Situational Awareness through Tactile Feedback"

2012 $1,630, AccessComputing Minigrant, P.I., "Introducing Middle and High School Students who are Blind and Visually Impaired to Computing at UMBC II"

2012 $750, AccessComputing Minigrant, Co-P.I., "Introducing Middle and High School Students who are Blind and Visually Impaired to STEM at UMBC I"

2011 $5,100, AccessComputing Minigrant, Co-P.I., "Participatory Design Workshop on Accessible Apps and Games"

2009 - 2010 $4700, AccessComputing Minigrant, P.I. "Accessibility Awareness Training Workshop"

Internal Funding - Awarded

2025 $45,500, Investigating Cybersecurity-Related Advocacy for Older Adults, UMBC CyberFellow Award, UMBC, PI.

2023 - 2025 $25,000, UMBC START funding. Supporting Entrepreneurship among Individuals with Visual Impairments, UMBC, PI. (including one year no-cost extension).

2023 - 2024 $12,000, UMBC Cyberlearning funding. Investigating Cybersecurity Educational Initiatives to Support Older Adults, UMBC, PI.

2018 $1500, UMBC Supplement for Undergraduate Research Experiences (SURE) Award.

2016 $29,886, COEIT Strategic Plan Implementation Grant Program: (PI: Lutters. "Revitalizing the CoEIT User Studies Labs."

2015 $5000, CoEIT Strategic Plan Implementation Grant Program, Co-PI, "Proposal to Join the Human-Computer Interaction Consortium" (PI: Hurst)

2014 $400, UMBC IS Department Research Seed Funding, P.I., "Evaluating an Input Device for Individuals with Physical Disabilities"

2013 - 2014 $1500, UMBC URAS, P.I., Research area: "Developing a Mobile Application to Support Individuals with Intellectual Disabilities"

2012 $6,000, UMBC Summer Faculty Fellowship, P.I., "Developing Mobile Applications to Prevent Frailty in Older Adults"

2012 $300, UMBC IS Department Research Seed Funding, P.I., "Developing Tactile Feedback for Situational Distractions"

2011– 2012 $1,500, UMBC Undergraduate Research Support, P.I., Research area: Brain Computer Interfaces for Development of an AAC system.

2010 – 2011 $1,500, UMBC Undergraduate Research Support, P.I., Research area: Social Networking and Accessibility

2010 - 2011 $19,994, UMBC Special Research Assistantship/Initiative Support, P.I., "Determining the Feasibility of Auditory Feedback for Purposes of Authentication"

2010 $750, UMBC Undergraduate Research Award Support, P.I., Research area: Haptic Web-Based Exploration

Agreements Not Reached

2019 - 2020	$19,998, Enhancing Mobile Authentication by Measuring the Authentication Life-Cycle, National Science Foundation, PI, (Subaward from USNA – Funds received by lead institution. However, funds could not be sent to UMBC).
2012 – 2015	$348,525, Measuring Engagement for Users of Different Media Types II, P.I., Johns Hopkins Applied Physics Laboratory (Agreement could not be reached between UMBC and APL on how to award funds, despite negotiations with primary funding agency: IARPA)
2012 – 2013	$108,863, Measuring Engagement for Users of Different Media Types I., P.I., Johns Hopkins Applied Physics Laboratory. (Agreement could not be reached between UMBC and APL on how to award funds)

Submitted in 2024

2024	$49,652.00, Investigating Cybersecurity Teaching Practices for Older Adults, Spencer Foundation, UMBC, PI.
2024	$148,356, Supporting Partnerships to Aid the Development of and Broaden Participation in Accessible Makerspaces, NSF, UMBC, PI
2024	$1,906,515, Developing a Co-Designed, Trauma-Informed and Culturally Sustaining Community Computing Learning Ecosystem Model for Mothers in Public and Low Income Housing, NSF, UMBC, Senior Personnel

Ph.D. Students

Primary Advisor- In Progress

Mei-Lian Vader, 2022 – Present, Research Area: Supporting Work Practices among Individuals who are Blind (Status: Pre-proposal).

Mariel Maughan, 2023 – Present, Research Area: Supporting Cybersecurity Instruction for Older Adults (Status: Pre-proposal).

Primary Advisor - Completed

Ali Abdolrahmani, 2014 - 2021, Committee Co-Chair (with Dr. Stacy Branham), Dissertation Title: "Investigating Ways to Support the Use of Voice Assistants (VAs) Among Individuals who are Blind".

Iman Alshathri, 2020 – 2023, Committee Co-Chair (with Dr. Anita Komlodi) Dissertation Title: Using Virtual Reality to Motivate and Prepare Students for Community Engagement.

Heera Lee, 2019 – 2022, Committee Co-Chair (with Dr. Jiaqi Gong), Dissertation Title: "Developing an Approach to Support Instructors to Provide Emotional and Instructional Scaffolding for English Language Learners through Biosensor-based Feedback".

Huimin Qian, 2009 – 2014, Committee Chair, Dissertation Title: "Improving Access to Mobile Technologies Using Tactile Feedback."

Hirak Ray, 2018 - 2022, Committee Chair, Dissertation Title: Towards Understanding Usable Privacy and Concerns among Older Adults" (Co-advised by Dr. Adam Aviv).

Sidas Saulynas, 2014 - 2020, Committee Chair, Dissertation Title: "Towards Developing Guidelines for Addressing Situationally Induced Impairments and Disabilities (SIID) and Severely Constraining Situational Impairments (SCSI)"

Flynn Wolf, 2015-2021, Committee Co-Chair (with Dr. Adam J. Aviv), Dissertation Title: "Investigating Mental Models of Risk among Security Experts".

Committee Member - In Progress

Hye-Kyung Bae, 2020 – Present, Member of Dissertation Committee, Research Area: "Understanding Immersion Experience when Using Virtual Reality for Foreign Language Learning" (Status: Proposal defended).

Erin Higgins, 2023 – Present, Member of Dissertation Committee, Research Area: "Creating Equitable and Accessible Makerspaces Situated in Community Rec Centers" (Status: Proposal defended).

Hassan Prottoy, 2024 – Present, Member of Dissertation Committee, Research Area: "Investigating the Use and Appropriation of Digital Technology in Contexts of Infrastructural Limitations". (Status: Proposal defended)

Ira Winkler, 2021 – Present, Member of Dissertation Committee, Research Area: Determining User Risk based upon Psychological Assessments. (Status: Proposal defended).

Committee Member – Completed

Ashwag Alasmari, 2018 – 2020, Member of Dissertation Committee, Research Area: "Toward Quality Multimorbid Health Questions for Information Seeking in Online Q&A Sites", (Status: Ph.D. awarded).

Fahad Alayed, 2014 – 2016, Member of Dissertation Committee, Thesis Title: "Citizen Adoption Model for Technology-Mediated Social Participation Systems," (Status: Ph.D. awarded).

Patrick Carrington, 2015 – 2018, Member of Dissertation Committee, Research Area: Chairable Computing: A New Perspective on Assistive Devices, (Status: Ph.D. awarded).

Hsien-Ming Chou, 2014 – 2017, Member of Dissertation Committee, Research Area: "Context-Aware Call Management for Mobile Phones," (Status: Ph.D. awarded).

Peng Chu, 2015 – 2017, Member of Dissertation Committee, Research Area: User Interaction: Information Seeking and Retrieval in English as a Non-Native Language, (Status: Ph.D. awarded)

Rachel Grice, 2017-2019, Member of Dissertation Committee, Research Area: "Supporting Distraction among Locomotive Engineers", (Status: Ph.D awarded).

Julie Haney, 2018 – 2020, Member of Dissertation Committee, Research Area: "The Work of Cybersecurity Advocates" (Status: Ph.D awarded).

Jianwei Lai, Member of Dissertation Committee, 2016, Thesis Title: Thumb-Based Approaches to Target Acquisition, Zooming, and Text Entry in Single-Handed Interaction with Mobile Phones (Status: Ph.D. awarded).

Galina Madjaroff, 2015 – 2018, Member of Dissertation Committee, Research Area: "Supporting Caregivers and Care Recipients after the Onset of Cognitive Impairment with Home Based Technology" (Status: Ph.D. awarded).

AbdulRhman Al Khanifer, 2012 – 2015, Member of Dissertation Committee (Ph.D. student at Rochester Institute of Technology), Research Area: "Enhancing Situational Awareness of Indoor Orientation for the Visually Impaired," (Status: Ph.D. awarded).

Victor Ondego, 2019- 2020, Member of Dissertation Committee, Research Area: "Web search credibility judgments by non-native English searchers" (Status: Ph.D. awarded).

Wajanat Rayes, 2018 – 2020, Member of Dissertation Committee, Research Area: "Understanding the Role of Information During Transition in the Life of Saudi International Mother Students in the USA", (Status: Ph.D. awarded).

Timothy Richards, 2013 – 2017, Member of Dissertation Committee, Research Area: "User Preferences for Campaign Website Personalization Using a Data-driven Model," (Status: Ph.D. awarded).

Erin Van Dyke, 2018 – 2019, Member of Dissertation Committee, Research Area: "Identifying Information Systems Competencies for Nurse Leaders and Understanding their Perceived Relevance at Varying Levels of Leadership: A Qualitative Study", (Status: Ph.D. awarded).

Jieyu Wang, 2015 – 2018, Member of Dissertation Committee, Research Area: Understanding Searchers' Language Selection: Code-switching in Online Searches, (Status: Ph.D. awarded).

Huijuan Wu, 2013, Member of Dissertation Committee, Thesis Title "Exploring Healthcare Consumer Acceptance of Personal Health Information Management Technology - Personal Health Record Systems", (Status: Ph.D. awarded).

Ph.D. Comprehensive Exam Panel (Information Systems)

2019: Iman Alshathri

2018: Eric Holtgrefe

2017: Ashwag Alasmari, Shifali Sharma

2015: Christopher Isgrig

2013: Fahad Alayed, Peng Chu, Timothy Richards

2012: Brandt Braunschweig

2011: Jianwei Lai, Harold Martin

Ph.D. Comprehensive Exam Panel (Human-Centered Computing)

2024: Kirk Crawford, Elmira Deldari, Rachel Kang, Golnaz Moharrer, Maria Lopez Delgado, Hasan Prottoy, Mei-Lian Vader

2023: Zainab Balogun, Erin Higgins

2022: Yi Xuan Khoo

2021: Vasundhara Misal, Hirak Ray, Jwawon Seo, Lydia Stamato, Akiri Surely, Priya Ulla

2019: Adegboyega Akinsiku, Hye-Kyung Bae, Heera Lee, Azin Semsar

2018: Julie Haney, Nicole Sundin

2017: Ali Abdolrahmani, William Easley, Flynn Wolf, Christopher Kai Wong

2015: Rachel Grice, Sidas Saulynas

2014: Lula Albar, Erin Buehler, Philip Feldman, Brian Frey, Galina Madjaroff, Rita Shewbridge

2013: Patrick Carrington, Barbara Linam Church, Jieyu Wang

2012: Michele Williams (Burton)

2011: Aktta Patel

2010: Kelley Gurley, Huimin Qian, Shaojian Zhu

Research Independent Study Advisor

Maria Lopez Delgado, Spring 2024, "Empowerment and Training Outcomes among Youth with Visual Impairments"

Mei Lian Vader, Ph.D. student, Spring 2024, Fall 2022, Spring 2023, Fall 2023, "Entrepreneurship among Individuals with Visual Impairments"

Hirak Ray, Ph.D. student, Fall 2018, Spring 2019, Spring 2020, Fall 2020, "Mental Models of Security and Privacy among Older Adults".

Adegboyega Akinsiku, Ph.D. student, Spring 2018, "Telerehabilitation and Health".

Flynn Wolf, Ph.D. student, Spring 2016, "Developing Authentication Mechanisms to Support Situational Impairments".

Ali Abdolrahmani, Ph.D. student, Spring, 2015, Fall 2015 and Spring 2016, "Credibility of Information for Individuals who are Blind".

Flynn Wolf, Ph.D. student, Spring 2015, "Enhancing Mobile Users' Levels of Situational Awareness using Tactile Feedback".

Sidas Saulynas, Ph.D. student, Spring 2014 and Spring 2015, "Supporting Inconspicuous Communication".

M. Iftekhar Tanveer, Ph.D. student, Fall 2013, "Evaluation of Physical and Web Interfaces."

Philip Feldman, Ph.D. student, Spring 2013, "Developing a Head-mounted Tactile Interface for Situational Awareness."

Karim Said, Ph.D. student, Fall 2012, "Determining the Feasibility of Authentication using Earcons."

Huimin Qian, Ph.D. student, Spring 2009, "Using Touch to Maintain Levels of Activity Amongst Older Adults."

Shaojian Zhu, Ph.D. student, Spring 2009, "Identifying the Benefits of Touch to Access the Web."

Master's Students

Primary Advisor/Co-Advisor - Completed

Anirudh Nagraj, M.S. student, 2019-2021, M.S. Thesis Chair, "Supporting Navigation among Blind Users in India" (Status: M.S. Awarded).

Antony Rishin Mukkath Roy, M.S. student, 2018-2019, M.S. Thesis Co-Chair, "Evaluating Accessibility Guidance for Voice User Interfaces", (Status: M.S. Awarded).

Franklin Wright, M.S. student, 2010-2011, M.S. Thesis Chair, "Emotional Transfer for Computer Mediated Communication using a Brain Computer and Gestural Interface," (Status: M.S. Awarded).

Thesis Committee Member

Fatimah Alqurmti, M.S. student, 2019, M.S. Thesis Committee Member, "Detecting makeup activities using internet-of-things", (Status: Awarded).

Ajinkya Gaurkar, M.S. student, 2018-2019, M.S. Thesis Committee Member, "Study of user behavior by comparing group and individual actions in crowdsourcing applications in the mobile environment," (Status: Awarded)

Samuel Owusu, M.S. student, 2013 -2014, M.S. Thesis Committee Member, "Cyberbullying Identification, Response and Prevention," (Status: Awarded).

Shu Yi Tseng, M.S. student, 2021-2021, M.S. Thesis Committee Member, "Exploring the Relationship between Body Expressions and Electrodermal Activity in Public Speaking Anxiety," (Status: Awarded).

Erin Van Dyke, M.S. student 2015, M.S. Thesis Committee Member, "Evaluating Usability of Clinical Information Systems to Inform Survey Tool Optimizations" (Status: Awarded)

Vaishnavvi Viswanathan, M.S. student, 2020, M.S. Thesis Committee Member, "Impact of Trait Emotional Intelligence on the Motivations of Playing League of Legends" (Status: Awarded)

Research Independent Study Advisor

Gabriella Waters, Ph.D. student, Spring 2025 TBD.

Ahmed Adams, M.S. student, Spring 2025 TBD.

Keerthana Ravichandran, M.S. student, Spring 2025 TBD.

Devayani Gadgil, M.S. student, Fall 2024 "Making Makerspaces Accessible"

Srivalli Kanthipudi, M.S. student, Fall 2024, "Gamification of Cybersecurity Concepts for Older Adults"

Manjula Mathi, M.S. student, Fall 2024, "Cybersecurity for Individuals with Motor Disabilities"

Gods'favour Sunday, M.S. student, Fall 2024, "Supporting Cybersecurity Instruction for Older Adults".

Marjory Pineda, M.S. student, Spring 2024, "Empowerment and Training Outcomes among Youth with Visual Impairments"

Aishwarya Sundaram, M.S. student, Spring 2024, “Orientation and Mobility Training in India”

Rohit Asave, M.S. student, Spring 2024, “Orientation and Mobility Training in India”

Kayla Johnson, M.S. student, Fall 2023, “Accessibility for Sport”

Sravankumar Krovvidi, M.S. student, Fall 2023, “Investigating Academic Performance during the COVID pandemic”

Evangeline William, M.S. student, Fall 2023, “Cybersecurity Initiatives for Older Adults”

Cameron Green, M.S. student, Spring 2023, “Accessibility for Smart-Home Innovation”

Jeeyoung Min, M.S. student, Spring 2023, “Design of Mobile Technology”

Sravanti Vitta Sanjay, M.S. student, Spring 2023, “Accessibility for Interaction”

Emerson Smith, M.S. student, Spring 2022, “Examining Flow State Ideation”

Shyam Ravichandran, M.S. student, Spring 2022, “Perceptions of Privacy and Security”

Sheetal Dhanapal, M.S. student, Fall 2020, “Qualitative Coding for Information Security”

John Nweke, M.S. student, Fall 2020, “In-Car Interface Design”

Apoorva Bendegiri Shashidar, M.S. student, Fall 2019, “Accessible Interfaces for Navigation”

Darshini Matharu, M.S. student, Fall 2019, “Auto Interface Design”

Shubhi Shah, M.S. student, Fall 2019, “Cybersecurity for Small Business”

Mousa Alalhareth, M.S. student, Spring 2019, “Security and Privacy for BigData”

Shivani Sinnarkar, M.S. student, Spring 2019, “Navigation for Individuals who are Blind”

Priyanka Soni, M.S. student, Fall 2018, “Alerts for Firefighters”

Yahya Almazni, M.S. student, Spring 2018, Research area: authentication interfaces.

Keerthana Sridhar, M.S. student, Spring 2018, Research area: authentication interfaces.

Hwaju Chung, M.S. student, Spring 2017, “Supporting Social Networking Among Students”

Melvin Green, M.S. student, Fall 2016, “Authentication using Smartwatch Technologies”

Iris Kwok, M.S. student, Summer 2016, “Supporting Communication through Tactile and Gestural Signals”

Shane Knudsen, M.S. student, Spring 2016, “Hand Signal Recognition”

Leila Heroabadi, M.S. student, Fall 2015, “Web Credibility for Individuals who are Blind.”

Abdullah Ali, M.S. student, Spring 2015, “Haptic and Gestural Authentication.”

Melvin Green, M.S. student, Spring 2015, “Haptic Authentication Methods.”

Ayidh Alqahtani, M.S. student, Spring 2015, "Mobile Solution to Support Individuals with Cognitive and Physical Disabilities."

Abdulwhab Alsalmah, M.S. student, Spring 2015, "Mobile Solution to Support Individuals with Cognitive and Physical Disabilities."

Sai Sandeep Badugu, M.S. student, Spring 2015, "Haptic Automotive Interfaces."

Flynn Wolf, M.S. student, Fall 2014, "Enhancing Mobile Users' Levels of Situational awareness using Tactile Feedback."

Katelyn Toy, M.S. student, Spring 2014, "Multimodal Interfaces for Older Adults".

Hanie Barri, M.S. student, Spring 2014, 'Educational Technologies for Individuals with Cognitive Disabilities."

Mohammed Harysi, M.S. student, Fall 2013, "Vibrational Feedback for Supporting Individuals to Maintain Balance."

Marta Seres, M.S. student, Fall 2013, "Examining the Impact of Alarm Fatigue."

William Easley, M.S. student, Fall 2013, Co-Advised with Dr. Ant Ozok, Research Area: "Medication Management for Individuals who are Blind."

Jessica Martin, M.S. student, Fall 2012, "Identifying the Barriers to Physical Activity for Older Adults."

Flynn Wolf, M.S. student, Fall 2012, "Improving Levels of Activity Among Older Adults who are Pre-Frail."

Kirk Norman, M.S. student, Spring 2012, "Web Design using an Assistive Haptic Tool."

Dae Park, M.S. student, Spring 2012, "Mobile Exergames to Aid Older Adults Remain Cognitively Active."

Shiva Sharma, M.S. student, Spring 2011, "Authentication for the Blind."

Amanda Hastings, M.S. student, Fall 2010, "Determining the Challenges Faced when using a Mobile Screen Reader."

Euna Kim, M.S. student, Fall 2010, "Evaluation of Physical and Web Interfaces."

Matthew Tretter, M.S. student, Fall 2010, "Auditory Authentication using Earcons."

Undergraduate Students

Research Independent Study Advisor

Zia Animashaun, B.S. student, Spring 2024: "Supporting Graduate and Postdoctoral Students with Disabilities in STEM"

Fahad Mahmood, B.S. student, Fall 2023: “Supporting Cybersecurity of Government Intelligence”

Liz Dernoga, B.S. student, Spring 2022: “Redesigning Web Applications”

Ricky Kan, B.S. student, Spring 2021: “Investigating Forced Technology Adoption among Older Adults”

Lake Amtmann, BS INDS student, Fall 2020-Spring 2021, “UX Design”

Tristan King, BS INDS student, Fall 2020-Spring 2021, “Navigation for Blind Users”

Samantha Keener, B.S. student, Spring 2020, “Portfolio Design”

Mei Lian Vader, B.S. MechEng student, Spring, Fall 2019, 2020, “Accessibility in Transportation Hubs”

Donovan Garrett, B.S. student, Spring 2019, “Usable Security for Small Businesses”

Kyle Lee, B.S. student, Spring 2019, “Navigation for Disabled Users”

Yasmin Majali, B.A. student, Fall 2018, “Navigation for Disabled Users”

Maya Gupta, B.S. student, Fall 2018 and Spring 2019, “Navigation for Disabled Users”

Marc Lazaga, B.S. student, Fall 2018 and Spring 2019, “Navigation for Disabled Users”

Cary Chin, B.S. student, Spring 2018, “Examining Perceptions of Security when using Voice Activated Personal Assistants by Individuals who are Blind.”

Jeff Romanowski, B.S. student, Spring 2018, “Examining Perceptions of Biometrics by Experts and Non-Expert Users.”

Chukwuemeka Marume, B.S. Biochemistry, Fall 2017, “Password Meters for Mobile Authentication”.

John T. Davin, B.S. student (USNA), Spring 2016-Spring 2017, “Mobile Authentication Methods”. Supervised in conjunction with Dr. Adam J. Aviv (USNA).

Ryan Sullivan, B.A. student (INDS), Fall 2015, “Ethics of BCI.” Supervised in conjunction with Dr. Aaron Massey (UMBC)

Charles Lechner, B.S. student (INDS), Fall 2015, “Authentication using BCI.”

Amanda Mancuso, B.S. student, Spring 2015, “Enhancing Mobile Users’ Levels of Situational awareness using Tactile Feedback.”

Dylan Chu, B.S. student (CSEE), Spring and Fall 2014, “Developing Technologies for Individuals with Intellectual Disabilities.”

Sagun Saru, B.S. student, Spring 2014, “Technologies to Support Individuals who are Blind”.

Vernetta Biggs, B.A. student, Spring 2014, “Evaluation of Physical and Web Interfaces.”

Sagun Saru, B.S. student, Fall 2013, "Developing a Mobile Interface to Support Individuals with Alzheimer's Disease."

Kris Singh, B.S. student, Fall 2013, "Developing a Mobile Interface to Support Individuals with Alzheimer's Disease."

Amanda Mancuso, B.S. student, Spring 2013, "Developing Support Aids for Individuals with Cognitive Disabilities."

Caroline Brunschwyler, B.S. student, Fall 2011 and Fall 2012, "Non-Visual Access to Social Networking Sites."

Yevgeniy Arber, B.S. student, Spring 2012, "Dynamic Haptic Browsing for the Web".

Alexis Ladusky, B.S. student, Spring 2012, "Developing Technologies to Support Individuals with Down Syndrome."

Matt Wheeler, B.S. student, Fall 2011 and Spring 2012, "Developing an Augmented Assistive Communication Device."

Jefreena Packianathan, B.S. student (INDS), Fall 2010 and Spring 2011, "Exploration of the Accessibility Issues encountered when Social Networking."

Shiva Sharma, B.S. student, Spring 2010 and Fall 2010, "Authentication for the Blind Community."

Matthew Tretter, B.S. student, Spring 2010, "Multi-device Access to a Haptic Interface."

Melvin Austinraj, B.A. student, Fall 2009, "Developing and Evaluating an Online Application for the Good Shepherd Center."

Eduardo Cabrera, B.S. student, Fall 2009, "Developing a Multimodal Internet Safety Tutorial for Blind Children."

Shiva Sharma, B.S. student, Fall 2009, "Enhancing the Process of Scheduling Tutoring for Undergraduate Students at UMBC."

Matthew Tretter, B.S. student, Fall 2009, "Developing a Multimodal Memory Game for Blind and Low-Vision Users."

Daniel Floriza, B.A. student, Spring 2009, "Automating the Process of Scheduling Tutoring for Undergraduate Students at UMBC."

PUBLICATIONS AND PRESENTATIONS

Publications (Student authors underlined)

Peer-Reviewed (Journal proceedings)

Alshathri, I., Komlodi, A. & **Kuber, R.** 2024: Investigating the Role of Virtual Reality to Support Community Engagement. International Journal of Instruction, 17(4), 385-404.

Saulynas, S., Burgee, L., Bendigeri, A. & **Kuber, R.** 2022: Putting Situational Impairments in Context: Developing Guidelines for Situational Impairments and Severely Constraining Situational Impairments by Examining Parallel Domains. Universal Access in the Information Society (21), 941–966 (Impact Factor: 2.4).

Ray, H., Wolf, F**., Kuber, R.** & Aviv, A.J., 2021: "Warn Them" or "Just Block Them"?: Using Drawmetrics to Compare Privacy Concerns Among Older and Working Age Adults." Privacy Enhancing Technologies Symposium (2), 27-47.

Saulynas, S. & **Kuber, R**., 2020: Understanding and supporting individuals experiencing severely constraining situational impairments. Universal Access in the Information Society, 19(4), 919-933.

Abdolrahmani, A., Storer, K.M., Mukkath Roy, A.R., **Kuber, R.** & Branham, S.M., 2020: Blind Leading Sighted: Drawing Design Insights from Blind Users Towards More Productivity-Oriented Voice Interfaces. Transactions on Accessible Computing, Article No. 18.

Saulynas, S., Lechner, C. and **Kuber, R.** 2018: Towards the Use of Brain-Computer Interface Technologies as a Potential Alternative to PIN Authentication. International Journal of Human-Computer Interaction, 34 (5), 433-444.

Wolf, F., Aviv, A.J. & **Kuber, R.** 2018: It's All About the Start: Classifying Eyes-Free Mobile Device Authentication Techniques. Journal on Information Security and Applications, 41, 28-41.

Wolf, F. & **Kuber, R.** 2018: Developing a Head-Mounted Tactile Prototype to Support Situational Awareness. International Journal of Human-Computer Studies 109, 54-67. DOI: 10.1016/j.ijhcs.2017.08.002 (Impact Factor: 2.006)

Wolf, F., **Kuber, R.** & Aviv. A.J., 2018: An Empirical Study Examining the Perceptions and Behaviours of Security Conscious Users of Mobile Authentication. Behaviour and Information Technology, 37(4), 320-334 (Impact Factor: 1.429)

Wong, C., Mentis, H.M. & **Kuber, R**., 2018: The Bit Doesn't Fit: Evaluation of a Commercial Activity-Tracker at Slow Walking Speeds. Gait and Posture, 59, 177-181 (Impact Factor: 2.414)

Easley, W., **Kuber, R.** & Ozok, A.A. 2017: An Empirical Study Examining Medication Management among Individuals with Visual Impairments. Universal Access in the Information Society, 16 (2), 483-495 (JCR Impact Factor: 1.219).

Feng, Y., Wong, C.K., Janeja, V., **Kuber, R.** & Mentis, H.M. 2017: Comparison of Tri-axial Accelerometers Step-count Accuracy in Slow Walking Conditions. Gait & Posture, 53, 11-16. (JCR Impact Factor: 2.347).

Krishnaswamy, K., **Kuber, R.** & Oates, T. 2016: Developing a Limb Repositioning Interface for Individuals with Severe Physical Disabilities. Universal Access in the Information Society, 15 (4), 609–627, (JCR Impact Factor for 2015: 0.656).

Said, K., **Kuber, R.** & Murphy, E. 2015: AudioAuth: Exploring the Design and Usability of a Sound-Based Authentication System. International Journal of Mobile Human-Computer Interaction, 7(4), 16-34.

Qian, H., **Kuber, R.**, Sears, A. & Stanwyck, E. 2014: Determining the Efficacy of Multi-Parameter Tactons in the Presence of Real-world and Simulated Audio Distractors. Interacting with Computers, Interacting with Computers, 26 (6), 572-594 (JCR Impact Factor for 2013: 1.158, 5 Year Impact Factor: 1.493).

Kuber, R. & Wright, F.P. 2013: Augmenting the Instant Messaging Experience Through the Use of Brain–Computer Interface and Gestural Technologies. International Journal of Human Computer Interaction, 29 (3), 178-191 (JCR Impact Factor for 2013: 1.131, 5 Year Impact Factor: 1.284).

Zhu, S., **Kuber, R.**, Tretter, M. & O'Modhrain, M.S. 2011: Identifying the Effectiveness of Using Three Different Haptic Devices for Providing Non-Visual Access to the Web. Interacting with Computers, 23, 565-581 (JCR Impact Factor for 2011: 1.233, 5 Year Impact Factor: 1.455).

Qian, H., **Kuber, R.** & Sears, A. 2011: Towards Developing Perceivable Tactile Feedback for Mobile Devices. International Journal of Human Computer Studies 69, 705-719 (JCR Impact Factor for 2011: 1.171, 5 Year Impact Factor: 1.968).

Qian, H., **Kuber, R.**, Sears, A. & Murphy, E. 2011: Maintaining and Modifying Pace through Tactile and Multimodal Feedback. Interacting with Computers, 23 (3), 214–225 (JCR Impact Factor for 2011: 1.233, 5 Year Impact Factor: 1.455).

Kuber, R., Yu, W. & O'Modhrain, M.S. 2011: Evaluation of Haptic HTML Mappings Derived from a Novel Methodology. ACM Transactions on Accessible Computing, 3 (4), Article 12, 1-27.

Kuber, R. & Yu, W. 2010: Feasibility Study of Tactile-based Authentication. International Journal of Human-Computer Studies, 68 158–181 (JCR Impact Factor for 2011: 1.600, 5 Year Impact Factor: 2.273).

Murphy, E., **Kuber, R.**, McAllister, G., Strain, P. & Yu, W. 2008: An Empirical Investigation into the Difficulties Experienced by Visually Impaired Internet Users. Universal Access in the Information Society, 7(1), 79-91.

Yu, W., **Kuber, R.**, Murphy, E., Strain, P. & McAllister, G. 2006: A Novel Multimodal Interface for Improving Visually Impaired People's Web Accessibility. Virtual Reality, 9, 2 (Jan 2006), 133-148.

Peer-Reviewed (Conference and workshop proceedings – Long papers)

Asave, R., Hamidi, F. & **Kuber, R.**, 2024. An Investigation of The Experiences of Orientation and Mobility Trainers in India. In proceedings of Web4All Conference – W4A'24, https://doi.org/10.1145/3677846.3677847

Vader, M.L., Pineda, M., Hamidi, F. & **Kuber, R**. 2024: "Pretty Much an Advocate as Well": Investigating the Experiences of Self-Employed Individuals with Visual Impairments. In proceedings of W4A Conference – W4A'24, https://doi.org/10.1145/3677846.3677865

Ray, H., **Kuber, R.** & Aviv, A.J. 2022: Investigating Older Adults' Adoption and Usage of Online Conferencing Tools During COVID-19. In proceedings of the Web4All Conference – W4A'22, Article No. 27, 1–11.

Saulynas, S., Vader, M., Bendigeri, A. King, T., Nagraj, A., & **Kuber, R.** 2022: How and Why We Run: Investigating the Experiences of Blind Runners. In proceedings of the Web4All Conference – W4A'22, Article No. 25, 1–11 (Best Technical Paper Candidate Nominee).

Nagraj, A., **Kuber, R.**, Hamidi, F. & Prasad R.S.G., 2021: Investigating the Navigational Habits of People who are Blind in India. In proceedings of the International ACM Conference on Computers and Accessibility – ASSETS'21, Article No. 33 (29% acceptance rate).

Wolf, F.**, Kuber, R.** & Aviv, A.J., 2021: Security Obstacles and Motivations for Small Businesses from a CISO's Perspective. In proceedings of the 30th USENIX Security Symposium (USENIX Security 21). Available: https://www.usenix.org/conference/usenixsecurity21/presentation/wolf (19% acceptance rate)

Ray, H., Aviv, A.J. & **Kuber, R.**, 2021: Why Older Adults Do (and Do Not) Use Password Managers. In proceedings of 30th USENIX Security Symposium (USENIX Security 21). Available: https://www.usenix.org/conference/usenixsecurity21/presentation/ray (19% acceptance rate)

Abdolrahmani, A., Gupta, M, Vader, M., **Kuber, R.** & Branham. S.M., 2021: Towards More Transactional Voice Assistants: Investigating the Potential for a Multimodal Voice-Activated Indoor Navigation Assistant for Blind and Sighted Travelers. In Proceedings of the Conference on Human Factors in Computing Systems - CHI '21, Article No: 495, 1-16 (26.3% acceptance rate)

Khan, H., Ceci, J., Stegman, J., Aviv, A.J., Dara, R. & **Kuber, R.**, 2020: Widely Reused and Shared, Infrequently Updated, and Sometimes Inherited: A Holistic View of PIN Authentication in Digital Lives and Beyond. In Proceedings of the Annual Computer Security Applications Conference –ACSAC'20, 249–262 (23% acceptance rate).

Gupta, M., Abdolrahmani, A., Edwards, E., Cortez, M., Tumang, A., Majali, Y., Lazaga, M., Tarra, S., Patil P., **Kuber, R.** & Branham, S.M., 2020: Towards More Universal Wayfinding Technologies: Navigation Preferences Across Disability Identities. In Proceedings of the Conference on Human Factors in Computing Systems - CHI '20, 1-13 (24.3% acceptance rate).

Wolf, F., Soni, P., **Kuber, R.**, Pawluk, D. & Turnage, B., 2019: Addressing the Situational Impairments Encountered by Firefighters through the Design of Alerts. In Proceedings of the Web4All Conference - W4A'19, San Francisco, CA, Article No. 22 (37% acceptance rate).

Wolf, F., **Kuber, R.** & Aviv, A.J., 2019: "Pretty Close to a Must-Have:" Balancing Usability Desire and Security Concern in Biometric Adoption. In Proceedings of the Conference on Human Factors in Computing Systems - CHI '19, Paper No. 151 (23.8% acceptance rate).

Aviv, A.J., Wolf, F., & **Kuber, R.**, 2018: Comparing Video Based Shoulder Surfing for Mobile Unlock Authentication with Live Simulation. In Proceedings of the Annual Computer Security Applications Conference – ACSAC'18 (20.1% acceptance rate).

Abdolrahmani, A., **Kuber, R.** & Branham, S.M., 2018: "Siri Talks at You": An Empirical Investigation of Voice Activated Personal Assistant (VAPA) Usage by Individuals Who are Blind. In Proceedings of the International ACM Conference on Computers and Accessibility – ASSETS'18, Galway, Ireland (23% acceptance rate).

Aviv, A.J. & **Kuber, R.,** 2018: Towards Understanding Connections Between Security/Privacy Attitudes and Unlock Authentication. In Proceedings of Workshop on Usable Security - USEC 2018, San Diego, CA.

Aviv, A.J., Davin, J.T., Wolf, F. & **Kuber, R.,** 2017: Towards Baselines for Shoulder Surfing on Mobile Authentication. In Proceedings of 33rd Annual Computer Security Applications Conference - ACSAC'17, Orlando, FL, 486-498 (19.7% acceptance rate).

Saulynas, S., Burgee, L. and **Kuber, R**, 2017**.** All Situational Impairments are not Alike: A Classification System for Situational Impairments and the Unique Nature of Severely Constraining Situational Impairments. In Proceedings of the iConference'17, Wuhan, China (11 pages).

Toy, K., O'Meara, E., **Kuber, R.** and Saulynas, S., 2017: An Investigation of Ways to Support Older Adults when Using Mobile Interfaces. In Proceedings of the iConference'17, Wuhan, China (11 pages).

Abdolrahmani, A. and **Kuber, R.**, 2016: Should I Trust It When I Cannot See It? Credibility Perception and Assessment for Blind Web Users. In Proceedings of the 18th International ACM Conference on Computers and Accessibility – ASSETS'16, Reno, NV, 191-199. (Technical paper acceptance rate: 25%).

Abdolrahmani, A., **Kuber, R.** & Hurst A., 2016: An Empirical Investigation of the Situationally-Induced Impairments Experienced by Blind Mobile Device Users. In Proceedings of the 13th International Web for All Conference - W4A 2016, Montreal, Canada, Article No. 21 (Acceptance rate: 35%).

Ali, A., **Kuber, R.** & Aviv, A.J., 2016: Developing and Evaluating a Gestural and Tactile Mobile Interface to Support User Authentication. In Proceedings of the iConference 2016, Philadelphia, PA, (Acceptance rate: 30%).

Aviv, A.J., Budzitowski, D. & **Kuber, R.**, 2015: Is Bigger Better? Comparing User Generated Passwords on 3x3 vs. 4x4 Grid Sizes for Android Pattern Unlock. In Proceedings of 31st Annual Computer Security Applications Conference - ACSAC'15, Los Angeles, CA, 301-310.

Said, K., **Kuber, R.** & Murphy, E., 2014: Towards the Development of AudioAuth: An Auditory Authentication System. In proceedings of Irish Human Computer Interaction 2014, Dublin, Ireland, 48-55, ISBN 978-1-873769-27-0.

Kuber, R. & Sharma, S. 2012: Developing an Extension to an Existing Tactile Authentication Mechanism to Support Non-Visual Interaction. In proceedings of IASTED Conference on Human-Computer Interaction, Baltimore, USA, 190-198.

Kuber, R., Hastings, A., Tretter, M. & Fitzpatrick, D. 2012: Determining the Accessibility of Mobile Screen Readers for Blind Users In proceedings of IASTED Conference on Human-Computer Interaction, Baltimore, USA, 182-189.

Kuber, R., Tretter, M. & Murphy, E. 2011: Developing and Evaluating a Non-Visual Memory Game. In proceedings of IFIP TC13 Conference on Human-Computer Interaction - INTERACT 2011, Part II, LNCS 6947, Lisbon, Portugal, 541–553, (Paper acceptance rate: 27.6%).

Kuber, R., Yu, W. & McAllister, G. 2007: Towards Developing Assistive Haptic Feedback for Visually Impaired Internet Users. In proceedings of on Human Factors in Computing Systems - CHI'07, San Jose, USA, 1525–1534. (Paper acceptance rate: 22% - Nominee for Best Paper Award).

Murphy, E., **Kuber, R.**, Strain, P., McAllister, G. & Yu, W. 2007: Developing Sounds for a Multimodal Interface: Conveying Spatial Information to Visually Impaired Web Users. In proceedings of the 13th Meeting of the International Conference on Auditory Display - ICAD'07, Montreal, Canada, 348-355.

Peer-Reviewed (Conference proceedings – Short papers, extended abstracts and posters)

Alshathri, I., Komlodi, A. & **Kuber, R.** 2024. Developing an Approach to Integrate Virtual Reality Technologies to Support Service Learning Instruction. In Proceedings of the 15th International Conference on Society and Information Technologies, 130-134. https://doi.org/10.54808/ICSIT2024.01.130

Alshathri, I., Komlodi, A. and **Kuber, R.**, 2023: Examining the Feasibility of Virtual Reality to Motivate and Prepare International Students for Community Engagement Activities – An Inquiry among Service Learning Experts. In Posters section of iConference 2023. Available: https://www.ideals.illinois.edu/items/126419

Kuber, R., King, T., Nagraj, A., Vader, M., Bendigeri, A. & Wolf, F., 2023: The Design and Evaluation of a Wearable Prototype to Support Non-Visual Wayfinding. In Posters section of iConference 2023. Available: https://hdl.handle.net/2142/117360

Kuber, R., Sinnarkar, S., Gupta, M., Mukkath Roy, A.R. & Abdolrahmani, A., 2021: Organizing an Accessibility-Themed Mini-Hackathon. In Proceedings of iConference 2021.

Lee, H., Mandalapu, V., Gong, J., Kleinsmith, A. & **Kuber, R.**, 2020: Using Physiological Cues to Determine Levels of Anxiety Experienced among Deaf and Hard of Hearing English Language Learners. In Companion Publication of the International Conference on Multimedia Interaction - ICMI'20, 72-76.

Ray, H., Wolf, F., **Kuber, R.** & Aviv, A.J., 2019: "Woe is me:" Examining Older Adults' Perceptions of Privacy. In Extended Abstracts of ACM CHI (Late Breaking Work).

Gupta, M., **Kuber, R.** & Branham, S.M., 2019: Towards Identifying and Classifying Navigation Strategies Among Individuals with Diverse Disabilities. In Proceedings of iConference (Posters), URI: http://hdl.handle.net/2142/103313.

Mukkath, R., Abdolrahmani, A., **Kuber, R.** & Branham, S.M., 2019: Beyond Being Human: The (In)Accessibility Consequences of Modeling VAPAs After Human-Human Conversation. In proceedings of iConference (Posters), URI: http://hdl.handle.net/2142/103342.

Wolf, F., Aviv, A.J. & **Kuber, R.**, 2018: How Do We Talk Ourselves Into These Things? Challenges with Adoption of Biometric Authentication for Expert and Non-Expert Users. In SOUPS Posters 2018 (Resubmission of CHI LBW 2018).

Saulynas, S. & **Kuber, R.** 2018: Towards Supporting Mobile Device Users Facing Severely Constraining Situational Impairments. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18, Montreal, Canada, LBW540.

Wolf, F., **Kuber, R.** & Aviv. A.J., 2018: How Do We Talk Ourselves Into These Things? Challenges with Adoption of Biometric Authentication for Expert and Non-Expert Users. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18, Montreal, Canada, LBW502.

Wolf, F., Aviv, A.J. & **Kuber, R.**, 2018: Work-In-Progress: Performance of Eyes-Free Mobile Authentication. In Proceedings of Workshop on Usable Security - USEC 2018, San Diego, CA.

Wolf, F.**, Kuber, R.** & Aviv, A.J., 2017: Addressing Observational Attacks through the Design of a Tactile Aid for Mobile User Authentication. In Proceedings of the 33rd Annual Computer Security Applications Conference - ACSAC'17, Orlando, FL (2 pages).

Kuber, R., 2017: Developing Interfaces for Rehabilitation: A Graduate Level Course for Students from Multiple Disciplines. In Proceedings of the 19th International ACM Conference on Computers and Accessibility – ASSETS'17, Baltimore, MD, 317-318.

Saulynas, S. & **Kuber, R.**, 2017: Towards BCI and Gestural-Based Authentication for Individuals who are Blind. In Proceedings of the 19th International ACM Conference on Computers and Accessibility – ASSETS'17, Baltimore, MD, 403-404.

Wolf, F.**, Kuber, R.** & Aviv, A.J., 2017: Perceptions of Mobile Device Authentication Mechanisms by Individuals who are Blind. In Proceedings of the 19th International ACM Conference on Computers and Accessibility – ASSETS'17, Baltimore, MD, 385-386.

Wolf, F., **Kuber, R.**, Pawluk, D. & Turnage, B., 2017: Towards Supporting Individuals with Situational Impairments in Inhospitable Environments. In Proceedings of the 19th International ACM Conference on Computers and Accessibility – ASSETS'17, Baltimore, MD, 349-350.

Davin, J., Aviv, A.J., **Kuber, R.** & Wolf, F., 2017: Baseline Measurements of Shoulder Surfing Analysis and Comparability for Smartphone Unlock Authentication. In Extended Abstracts on Human Factors in Computing Systems - CHI'17, Denver, CO, 2496-2503.

Wolf, F., **Kuber, R.**, and Aviv, A.J., 2016: Towards Non-Observable Authentication for Mobile Devices. In Proceedings of the Twelfth Symposium on Usable Privacy and Security – SOUPS'16, Denver, CO.

Abdolrahmani, A., **Kuber, R.** & Easley, W., 2015: Web Search Credibility Assessment for Individuals who are Blind. In Proceedings of the 17th International ACM Conference on Computers and Accessibility – ASSETS'15, Lisbon, Portugal, 369-370.

Saulynas, S., Albar, L., **Kuber, R.** & Felzer, T., 2015: Using OnScreenDualScribe to Support Text Entry and Targeting among Individuals with Physical Disabilities. In Proceedings of the 17th International ACM Conference on Computers and Accessibility – ASSETS'15, Lisbon, Portugal, 303-304.

Ali, A., **Kuber, R.** & Aviv, A.J., 2015: H4Plock: Supporting Mobile User Authentication through Gestural Input and Tactile Output. In Proceedings of the Eleventh Symposium on Usable Privacy and Security - SOUPS'15, Ottawa, Canada.

Budzitowski, D., Aviv, A.J. & **Kuber, R.**, 2015: Do bigger grids sizes mean better passwords? 3x3 vs. 4x4 Grid Sizes for Android Unlock Patterns. In Proceedings of the Eleventh Symposium on Usable Privacy and Security - SOUPS'15, Ottawa, Canada.

Saulynas, S. & **Kuber, R.**, 2015: Going Beyond "Beyond Being There": An Inquiry into the Use of Brain-Computer Interface Technologies and Intelligent Machine Agents to Facilitate Inconspicuous Communication. In Proceedings of the International Conference on Collaboration Technologies and Systems – CTS'15, Atlanta, GA, 454-459 (Best Poster Paper Nominee).

Feldman, P. & **Kuber, R.**, 2015: Tangibly Augmenting Haptics. In Extended Abstracts of the International Conference on Tangible, Embedded and Embodied Interaction – TEI'15, Stanford, CA, 563-568 (Overall acceptance rate: 36%).

Wolf, F. & **Kuber, R.** 2014: Developing Tactile Feedback for Wearable Presentation: Observations from using a Participatory Approach. In Extended Abstracts of the International Conference on Human Computer Interaction with Mobile Devices and Services - Mobile HCI'14, Toronto, Canada, 543-548 (Overall acceptance rate: 28%).

Qian, H., **Kuber, R.** & Sears, A. 2014: Supporting the Mobile Notification Process through Tactile Cues Selected using a Paired Comparison Task. In Extended Abstracts on Human Factors in Computing Systems - CHI'14, Toronto, Canada, 1741-1746 (Overall acceptance rate: 32%).

Wolf, F., Feldman, P. & **Kuber, R.** 2014: Towards Supporting Situational Awareness using Tactile Feedback. In proceedings of the IEEE Symposium on 3DUI, Minneapolis, USA, 131-132.

Norman, K., Arber, Y. & **Kuber, R.** 2013: How Accessible is the Process of Web Interface Design? In proceedings of the 15th International ACM Conference on Computers and Accessibility – ASSETS'13, Bellevue, USA, Article No: 51 (Overall acceptance rate: 34%).

Qian, H., **Kuber, R.** & Sears, A. 2013: Designing Tactile Feedback to Support Mobile Users when Situationally Impaired. In proceedings of the 15th International ACM Conference on Computers and Accessibility – ASSETS'13, Bellevue, USA, Article No: 47 (Overall acceptance rate: 34%).

Wheeler, M., Wolf, F. & **Kuber, R.** 2013: Supporting Augmented and Alternative Communication using a Low-Cost Gestural Device. In proceedings of the 15th International ACM Conference on Computers and Accessibility – ASSETS'13, Bellevue, USA, Article No: 67 (Overall acceptance rate: 34%).

Qian, H., **Kuber, R.** & Sears, A. 2013: Tactile Notifications for Ambulatory Users. In Extended Abstracts of on Human Factors in Computing Systems - CHI'13, Paris, France, 1569-1574 (Overall acceptance rate: 23%).

Krishnaswamy, K. & **Kuber, R.**, 2012: Toward the Development of a BCI and Gestural Interface to Support Individuals with Physical Disabilities. In proceedings of the 14th International ACM Conference on Computers and Accessibility – ASSETS'12, Boulder, USA, 229-230 (Overall acceptance rate: 38%).

Anthony, L., Prasad, S., Hurst, A. & **Kuber, R.**, 2012: A Participatory Design Workshop on Accessible Apps and Games with Students with Learning Differences. In proceedings of the 14th International ACM Conference on Computers and Accessibility – ASSETS'12, Boulder, USA, 253-254 (Overall acceptance rate: 38%).

Carrington, P., **Kuber, R.**, Anthony, L., Hurst, A. & Prasad, S., 2012: Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach. In proceedings of the 26th BCS Conference on Human Computer Interaction, Birmingham, UK, 333-338 (Acceptance rate: 40%).

Qian, H., **Kuber, R.** & Sears, A. 2011: A Longitudinal Pilot Study to Evaluate Non-Visual Icons in a Mobile Exertion Application. In proceedings of IFIP TC13 Conference on Human-Computer Interaction - INTERACT 2011, Part IV, LNCS 6949, Lisbon, Portugal, 458–461 (Short communication acceptance rate: 22%).

Kuber, R. & Sharma, S. 2010: Toward Tactile Authentication for Blind Users. In proceedings of the 12th International ACM Conference on Computers and Accessibility – ASSETS'10, Pittsburgh, USA, 289-290 (Overall acceptance rate: 38%).

Kuber, R. & Yu, W. 2010: Tactile vs. Graphical Authentication. In proceedings of Eurohaptics (Lecture Notes in Computer Science 6191), Amsterdam, Netherlands, 314-319.

Qian, H., **Kuber, R.** & Sears, A. 2010: Maintaining Levels of Activity using a Haptic Personal Training Application. In Extended Abstracts of Human Factors in Computing Systems - CHI'10, Atlanta, USA, 3217-3222 (Overall acceptance rate: 23%).

Qian, H., **Kuber, R.** & Sears, A. 2009: Towards Identifying Distinguishable Tactons for Use with Mobile Devices. In proceedings of the 11th International ACM Conference on Computers and Accessibility, 257-258 (Overall acceptance rate: 38%).

Strain, P., McAllister, G., Murphy, E., **Kuber, R.** & Yu, W. 2007: A Grid-Based Extension to an Assistive Multimodal Interface. In Extended Abstracts of on Human Factors in Computing Systems - CHI'07, San Jose, USA, 2675-2680 (Overall acceptance rate: 23%).

Kuber, R., Sulaiman, S. & Blandford, A. 2006: Investigating the Communication of Emotions through Multimodal Technologies and Gestures. In proceedings of the 20th BCS Conference on Human Computer Interaction - HCI'06 Volume 2, London, UK, 205-207.

Kuber, R. & Yu, W. 2006: Authentication using Tactile Feedback. In proceedings of the 20th BCS Conference on Human Computer Interaction - HCI'06 Volume 2, London, UK, 141-145.

Yu, W., McAllister, G., **Kuber, R.**, Murphy, E. & Strain, P. 2005: Improving Web Accessibility using Content-Aware Plug-ins. In Extended Abstracts of Human Factors in Computing Systems - CHI'05, Portland, USA, 1893-1896 (Overall acceptance rate: 23%).

Peer-Reviewed (Workshop proceedings)

Saulynas, S. & **Kuber, R**., 2019: Designing Mobile Interaction Guidelines to Account for Situationally Induced Impairments and Disabilities (SIID) and Severely Constraining Situational Impairments (SCSI). In Proceedings of the SIID Workshop at ACM CHI 2019.

Abdolrahmani, A., Mukkath Roy, A.R., **Kuber, R.** & Branham, S.M., 2018: Blind People Are Power Users: An Argument for Centering Blind Users in Design of Voice Interfaces. In Proceedings of Accessible Voice Workshop, Conference on Computer Supported Collaborative Work (CSCW).

Wolf, F., **Kuber, R.**, and Aviv, A.J., 2016: Preliminary Findings from an Exploratory Qualitative Study of Security-Conscious Users of Mobile Authentication. In Proceedings of the Second Workshop on Security Information Workers, Twelfth Symposium on Usable Privacy and Security – SOUPS'16, Denver, CO.

Kuber, R., Yu, W. & O'Modhrain, M.S. 2010: Tactile Web Browsing for Blind Users. In proceedings of the 5th International Workshop on Haptic Audio Interaction Design (Lecture Notes in Computer Science 6306), Copenhagen, Denmark, 75-84.

Kuber, R., Yu, W., Murphy, E., Strain, P. & McAllister, G. 2005: Assistive Multimodal Interfaces for Improving Web Accessibility. In Hands on Haptics Workshop, ACM Conference on Human Factors in Computing Systems - CHI'05, Portland, USA.

Murphy, E., McAllister, G., Strain, P., **Kuber, R.** & Yu, W. 2005: Audio for a Multimodal Assistive Interface. Combining Speech and Sound in the Interface Workshop, 12th Meeting of the International Conference on Auditory Display – ICAD'05, Limerick, Ireland.

Peer-Reviewed (Others)

Brunschwyler, C. & **Kuber, R.** 2012: Determining the Accessibility of Social Networking Sites. In proceedings of the Grace Hopper Celebration of Computing, Baltimore, USA.

Kuber, R. 2006: Developing an Assistive Haptic Framework for Improving Non-Visual Access to the Web. In SIGACCESS Newsletter & ASSETS Doctoral Consortium, ASSETS'06, Portland, USA, 16-19.

Kuber, R., Yu, W., Strain, P., Murphy, E., & McAllister, G. 2005: Assistive Multimodal Interfaces for Improving Visually Impaired People's Access to the Web. Posters section, World Haptics Conference, Pisa, Italy (1 page poster).

Non-Peer-Reviewed Publications

Non-Peer-Reviewed (Dissertation)

Kuber, R. 2008: Developing Assistive Haptic Guidelines for Improving Non-Visual Access to the Web. Ph.D. Thesis, Queen's University Belfast, UK.

Kuber, R. 2004: Touching Emotion? A Study to Investigate whether Emotions can be Communicated using Multi-Modal Technologies and Gestures. M.Sc. Thesis, University College London, UK.

Non-Peer-Reviewed (Conference proceedings)

Kuber, R., Yu, W. & McAllister, G. 2007: A Non-Visual Approach to Improving Collaboration between Blind and Sighted Internet Users. In proceedings of Human Computer Interaction International: Universal Access in Human-Computer Interaction, Applications and Services (Lecture Notes in Computer Science), 913-922.

Yu, W., McAllister, G., Murphy, E., **Kuber, R.** & Strain, P. 2005: Developing Multimodal Interfaces for Visually Impaired People to Access the Internet. In proceedings of Human Computer Interaction International, Las Vegas, NV, USA.

Non-Peer-Reviewed (Workshop proceedings)

Kuber, R., Yu, W. & McAllister, G. 2006: Designing Assistive Haptic Feedback for Visually Impaired Internet Users using a Scenario-Based Approach. In proceedings of the Accessible Media Workshop, Potsdam, Germany.

Editorally-Reviewed Articles

Aviv, A.J., **Kuber, R.** & Budzitowski, D. 2017: Is Bigger Better When it Comes to Android Graphical Pattern Unlock? IEEE Internet Computing, 21 (6), 46-51. DOI: 10.1109/MIC.2017.4180833 (JCR Impact Factor: 1.521)

Kuber, R., Zhu, S., Arber, Y., Norman, K. & Magnusson, C. 2014: Augmenting the Non-Visual Web Browsing Process using the Geomagic Touch Haptic Device. In ACM SIGACCESS Newsletter, 109 (June 2014), 4-10.

Works Submitted or in Preparation

Lee, H. & **Kuber, R.**, Using a Modified Design Thinking Approach to Support Language Instructors Monitor Learners' Levels of Anxiety. iConference (Submitted September 2024)

Maughan, M., Singh, S., Sunday, G., Saulynas, S. & **Kuber, R.** Supporting Cybersecurity Instruction among Older Adults. iConference (Submitted September 2024)

Pineda, M., Lopez Delgado, M., Asave, R., Hamidi, F. & **Kuber, R.** Designing a STEM Career-Preparation Program for Empowering Pre-College Blind and Visually Impaired Youth. ACM CHI (Submitted September 2024).

Vader, M.L., Pineda, M. & **Kuber, R.** Investigating Assembly Line Work Practices among Individuals with Visual Impairments. ACM CHI (Submitted September 2024).

Patents (Applied for)

Kuber, R., O'Modhrain, M.S., Sears, A. & Qian, H. 2009: Method and System for using Haptics to Maintain Levels of Activity. Provisional Internal Patent No: 2603RK (Provisional Patent Applied For).

Kuber, R. & Yu, W. 2006: System and Method for User Authentication. Patent No 0603581.0 (Patent Applied For).

McAllister, G., Yu, W., Strain, P., Murphy, E. & **Kuber, R.** 2006: Improvements Relating to the Access of Image Information. Patent No 0624035.2 (Patent Applied For).

Presentations

Refereed Conference and Workshop Presentations

International Web for All Conference (W4A 2016). An Empirical Investigation of the Situationally-Induced Impairments Experienced by Blind Mobile Device Users, April 2016.

iConference 2016. Developing and Evaluating a Gestural and Tactile Mobile Interface to Support User Authentication, March 2016.

BCS Conference on Human Computer Interaction (BCS HCI'12). Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach, September 2012.

IASTED Conference on Human-Computer Interaction. Developing an Extension to an Existing Tactile Authentication Mechanism to Support Non-Visual Interaction, May 2012.

IASTED Conference on Human-Computer Interaction. Determining the Accessibility of Mobile Screen Readers for Blind Users, May 2012.

IFIP TC13 Conference on Human-Computer Interaction (INTERACT 2011): 13th IFIP TC13 Conference on Human-Computer Interaction. Developing and Evaluating a Non-Visual Memory Game, September 2011.

ACM Conference on Human Factors in Computing Systems (CHI'07). Towards Developing Assistive Haptic Feedback for Visually Impaired Internet Users, September 2007.

Refereed Poster Presentations

iConference 2023. The Design and Evaluation of a Wearable Prototype to Support Non-Visual Wayfinding.

iConference 2021. Organizing an Accessibility-Themed Mini-Hackathon.

International ACM Conference on Computers and Accessibility – ASSETS'17. Developing Interfaces for Rehabilitation: A Graduate Level Course for Students from Multiple Disciplines.

Twelfth Symposium on Usable Privacy and Security (SOUPS'16). Towards Non-Observable Authentication for Mobile Devices.

International Conference on Collaboration Technologies and Systems (CTS 2015), Going Beyond "Beyond Being There": An Inquiry into the Use of Brain-Computer Interface Technologies and Intelligent Machine Agents to Facilitate Inconspicuous Communication, June 2015.

ACM Conference on Mobile Human Computer Interaction (MobileHCI'14), Developing Tactile Feedback for Wearable Presentation: Observations from using a Participatory Approach, September 2014.

ACM Conference on Human Factors in Computing Systems (CHI'14), Supporting the Mobile Notification Process through Tactile Cues Selected using a Paired Comparison Task, April 2014.

IEEE 3DUI Symposium, Towards Supporting Situational Awareness using Tactile Feedback., March 2014.

ACM Conference on Computers and Accessibility (ASSETS'13), How Accessible is the Process of Web Interface Design, October 2013.

ACM Conference on Computers and Accessibility (ASSETS'13), Designing Tactile Feedback to Support Mobile Users when Situationally Impaired, October 2013.

ACM Conference on Computers and Accessibility (ASSETS'13), Supporting Augmented and Alternative Communication using a Low-Cost Gestural Device, October 2013.

ACM Conference on Human Factors in Computing Systems (CHI'13). Tactile Notifications for Ambulatory Users, April 2013.

ACM Conference on Computers and Accessibility (ASSETS'12). Toward the Development of a BCI and Gestural Interface to Support Individuals with Physical Disabilities, October 2012.

ACM Conference on Computers and Accessibility (ASSETS'12). A Participatory Design Workshop on Accessible Apps and Games with Students with Learning Differences, October 2012.

BCS Conference on Human Computer Interaction (BCS HCI'12). Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach, September 2012.

IFIP TC13 Conference on Human-Computer Interaction (INTERACT 2011). A Longitudinal Pilot Study to Evaluate Non-Visual Icons in a Mobile Exertion Application, September 2011.

ACM Conference on Computers and Accessibility (ASSETS'10). Toward Tactile Authentication for Blind Users, October 2010.

International Workshop on Haptic Audio Interaction Design (HAID'10). Tactile Web Browsing for Blind Users, September 2010.

Eurohaptics'10. Tactile vs. Graphical Authentication, July 2010.

ACM Conference on Computers and Accessibility (ASSETS'09). Towards Identifying Distinguishable Tactons for Use with Mobile Devices, October 2009.

ACM Conference on Computers and Accessibility (ASSETS'06). Developing an Assistive Haptic Framework for Improving Non-Visual Access to the Web, October 2006.

BCS Conference on Human Computer Interaction (BCS HCI'06), Investigating the Communication of Emotions through Multimodal Technologies and Gestures, September 2006.

BCS Conference on Human Computer Interaction (BCS HCI'06): Interactive Experiences Track. Authentication using Tactile Feedback, September 2006.

First Joint Eurohaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems - World Haptics Conference (WHC'05). Assistive Multimodal Interfaces for Improving Visually Impaired People's Access to the Web, March 2005.

Non-Refereed Conference and Workshop Presentations

Accessible Media Workshop 2006. Designing Assistive Haptic Feedback for Visually Impaired Internet Users using a Scenario-Based Approach, May 2006.

Research Seminars and Invited Talks

STEM Access for People with Disabilities and the AC3 Project, AC3 Project Team Meeting, 2023

Work Practices for Individuals with Visual Impairments, Manufacturing USA, 2023

NIST, Gaithersburg, MD, Cybersecurity for Small Business, 2020.

UMBC Game Development Club, User Experience and User Interface Design for Games, 2019.

Department of Biomedical Engineering, Virginia Commonwealth University, VA, Tactile Feedback for Mobile Interaction, 2016.

Department of Biomedical Engineering, Virginia Commonwealth University, VA, Authentication using Tactile Feedback, 2012.

Colloquia

ACM Conference on Computers and Accessibility (ASSETS'06). Developing an Assistive Haptic Framework for Improving Non-Visual Access to the Web, October 2006.

Multimodal Colloquium, University of Glasgow, UK. Haptics for a Web Interface, 2005.

Media Interest

Pierce, Timothy. "Why Older Adults Use (And Do Not Use) Password Managers". George Washington University (Published 1/7/2021, Available: https://mediarelations.gwu.edu/why-older-adults-use-and-do-not-use-password-managers)

U of G Study Finds Safety Concerns Over Reused, Rarely Updated PINs. University of Guelph (Published 1/6/2021, Available: https://news.uoguelph.ca/2021/01/u-of-g-study-finds-safety-concerns-over-reused-rarely-updated-pins/)

Hanks Mastriola, M. “Navigation Preferences across People with a Diverse Range of Disabilities.” EurekaAlert (Published 8/14/2020, Available: https://www.eurekalert.org/pub_releases/2020-08/uomb-npa081420.php)

Nield, D. “5 Incredibly Stupid Security Mistakes You Make Every Day”. Gizmodo (Published: 10/4/2017, Available: http://fieldguide.gizmodo.com/5-incredibly-stupid-security-things-you-do-everyday-1819132763)

Cameron, D. “For the Love of All That Is Holy, Stop Using Pattern Unlock” Gizmodo (Published: 9/22/2017, Available: https://gizmodo.com/for-the-love-of-all-that-is-holy-stop-using-pattern-un-1818672002)

Greenberg, A. “Don't Rely On An Unlock Pattern To Secure Your Android Phone” (Published: 9/22/2017, Available: https://www.wired.com/story/android-unlock-pattern-or-pin/)

COURSES TAUGHT

Spring 2025	HCC729: Human Centered Design
Fall 2024	MGMT210: Principles of Management
Spring 2024	MGMT210: Principles of Management
	HCC729: Human Centered Design
Fall 2023	MGMT210: Principles of Management
	IS403: User Interface Design
Spring 2023	MGMT210: Principles of Management
	HCC729: Human Centered Design
Spring 2022	IS303: Fundamentals of Human-Computer Interaction
	HCC729: Human Centered Design
Fall 2021	MGMT210: Principles of Management
	IS403: User Interface Design
Spring 2021	MGMT210: Principles of Management
Fall 2020	IS303: Fundamentals of Human-Computer Interaction
Spring 2020	HCC629: Fundamentals of Human-Centered Computing
Fall 2019	IS303: Fundamentals of Human-Computer Interaction
	IS403: User Interface Design

Spring 2019	HCC629: Fundamentals of Human-Centered Computing
Fall 2018	IS303: Fundamentals of Human-Computer Interaction
	IS403: User Interface Design
Spring 2018	IS303: Fundamentals of Human-Computer Interaction
	IS403: User Interface Design
Fall 2017	HCC742: Developing Interfaces for Rehabilitation
	IS403: User Interface Design
Fall 2015	HCC742: Developing Interfaces for Rehabilitation
	IS403: User Interface Design
Spring 2015	HCC613: User Interface Design and Prototyping
	IS303: Fundamentals of Human-Computer Interaction
Fall 2014	HCC629: Fundamentals of Human-Centered Computing
	IS303: Fundamentals of Human-Computer Interaction
Spring 2014	IS698/800: Developing Interfaces for Rehabilitation
	IS303: Fundamentals of Human-Computer Interaction
Fall 2013	HCC629: Fundamentals of Human-Centered Computing
Spring 2013	IS698/800: Developing Interfaces for Rehabilitation
	IS303: Fundamentals of Human-Computer Interaction
Fall 2012	HCC629: Fundamentals of Human-Centered Computing
Spring 2012	HCC729: Human Centered Design
	IS303: Fundamentals of Human-Computer Interaction
Fall 2011	IS698/800: Developing Interfaces for Rehabilitation
Spring 2011	IS/HCC729: Human Centered Design
	IS303: Fundamentals of Human-Computer Interaction
Fall 2010	IS/HCC629: Fundamentals of Human-Centered Computing
Spring 2010	IS/HCC729: Human Centered Design
Fall 2009	IS/HCC629: Fundamentals of Human-Centered Computing
Spring 2009	IS303: Fundamentals of Human-Computer Interaction

Fall 2008 IS303: Fundamentals of Human-Computer Interaction

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY AND PROFESSION

Service to the Department

2024 – 2025	Co-Chair, Tenure Track Search Committee
2024 – 2025	Member, Staff Search Committee
2024 – Present	Co-Chair, Undergraduate Committee
2023	Member, Merit Review Committee
2023	Participant, BTA Course Remapping Initiative & Course Lead for IS303 & IS403
2023 – Present	Member, HCC Committee
2023 – 2024	Member, Graduate IS Admissions Committee
2022 (Spring) - Present	Member, Application Reviewing Committee for IS MS Program
2021 – 2022	Member, Tenure-Track Faculty Search Committee
2021 – 2022	Member, Undergraduate Committee
2021 – Present	Departmental Mentor (Hamidi)
2020 - 2021	Organizer, Departmental PhD Day
2020	Chair, IS Departmental Postdoctoral Fellowship Committee
2020 - 2021	Chair, HCC Committee
2019 – 2020	Member, Mentoring and Retention Roundtable Committee
2019-2020	Member, Open Rank TT Search Committee
2019	Chair, P&T Committee for Sisi Duan (Third Year Review)
2019 - 2020	Co-Chair, Combined Graduate Committee
2019 – 2021	Course Organizer for HCC810
2019	Chair, Committee for Anita Komlodi (Post-Tenure Review)
2018 – 2019	Chair, P&T Committee for Richard Sponaugle (Promotion to Senior Lecturer)
2018-2019	Co-Chair, Open Rank TT Search

2018 – 2019	Member, Honors and Awards Committee
2018	Member, HCC Comprehensive Exam Committee
2017 – 2018	Member, Graduate HCC Committee
2017 – 2018	Member, Graduate IS On-Campus Committee
2017	Member, HCC Comprehensive Exam Committee (Spring 2017)
2015	Member, Information Systems Undergraduate Committee
2015	Member, Information Systems Research Committee
2014 - Present	Chair, HCC Comprehensive Exam Committee (Fall 2014, Spring 2015, Spring 2017, Spring 2019)
2014 - 2015	Member, HCC Faculty Search Committee
2014 - 2015	Member, Information Systems Undergraduate Committee
2013 – 2015	Member, Information Systems Honors and Awards Committee
2013 - 2014	Member, Information Systems Research Committee
2013, 2014	Judge, Information Systems Research Poster Competition
2011	Advisor, Assisted with accessibility requirements for departmental online programs
2011 - Present	Member, Information Systems Comprehensive Exam Committee (Fall 2011, Spring 2012, Spring 2013, Fall 2013, Spring 2017, Spring 2019)
2011 - 2012	Member, Information Systems Research Committee
2011, 2015	Member, Information Systems Merit Review Committee
2010 – 2013	Member, Information Systems Graduate Committee
2010 – 2018	Representative, AccessComputing. Responsible for liaising with consortium of other universities on matters related to disabilities and education.
2010	Member, Maryland Judiciary project for the Information Systems Department
2010	Organizer, Ph.D. seminars for Human Centered Computing area (IS803)
2009 - 2014	Member, Human-Centered Computing Comprehensive Exam Committee (Fall 2009, Spring 2010, Fall 2011, Fall 2012, Fall 2013, Spring 2014)
2009 – 2010	Member, Information Systems Student Recruiting Committee

2009 – Present	Advisor, Guidance on course selections for up to 12 MS students
2008 – Present	Member, Graduate Programs at UMBC. Responsible for aiding development of reading list for graduate students, played a role in the graduate and faculty recruitment processes.

Service to the College

2024	Reviewer, Cybersecurity Research and Education Proposals
2024 - 2025	Member, Launch Committee (Kotturi)
2020 – 2022	Chair, Launch Committee (Yao)
2019 – 2020	Advocate, Launch Committee (Hamidi)
2019, 2021	Representative, LSAMP event for recruitment events
2019	Attendee, Preparing Future Faculty Summit, Howard University
2018	Attendee, Southern Regional Educational Board (SREB) Conference

Service to the University

2024 – Present	Member, IT Accessibility Workgroup
2024	Panelist, Faculty Development Workshop on Curriculum Mapping
2023	Participant, Georgian Delegation on Inclusiveness
2022 (Spring), 2023-	Chair, Library Policy Committee
2022	Faculty Advisor, Design Club (IS Department Liaison from 2023 onwards)
2022	Committee Member, Center for Public Health Research Proposal
2021	Committee Member, Library Policy Committee
2019 - Present	Faculty Advisor, Sigma Alpha Lambda
2019 - Present	Member, Executive Committee on the Recruitment, Retention, and Advancement of Underrepresented Minority Faculty
2018	Reviewer for Carroll Fund (CAHSS)
2017-2018	Faculty Advisor for Usability Labs, Interactive Systems Research Center
2017	Speaker/Panelist, UMBC Research Forum 2017 (Aging Research)

2015	Faculty Advisor for Communications, Interactive Systems Research Center
2015	Panellist, Faculty ADVANCEment Workshop on the Tenure Process
2014 - 2015	Member, UMBC Interdisciplinary Studies Committee
2013	Attendee, Americans with Disabilities Act Anniversary Celebration (State of Maryland), UMBC, MD
2012	Participant, Americans with Disabilities Act Anniversary Celebration (State of Maryland), UMBC, MD
2012	Reviewer, Summer Research Institute (McNair Scholars Program)
2012	Advisor, Section 508 compliance testing for UMBC web site (sites.umbc.edu)
2011 – 2013	Member, UMBC Human Resources Committee
2010	Organizer, Accessibility Training Workshop for Faculty, Staff and Students at UMBC
2009 – 2011	Member, Organization and University Operations Committee

Service to the Profession

Editorial Boards

2017 – 2024	Universal Access in the Information Society
2018 – 2020	ACM Transactions on Accessible Computing

Organization and Program Committees

2024	Reviewer, MIPS 2025
2024	Reviewer, CHI 2025
2024	Reviewer, iConference 2025
2024	Reviewer, CENTRIC conference
2024	Program Committee Member, ASSETS 2024
2024	Program Committee Member, Web4All Conference 2024
2024	Program Committee Member, Ninth International Conference on Universal Accessibility in the Internet of Things and Smart Environments (SMART ACCESSIBILITY)

2023	Reviewer, International Journal of Human-Computer Studies
2023	Technical Program Committee Member, Advances in Human-Oriented and Personalized Mechanisms, Technologies, and Services
2023	Faculty Grant Reviewer – Towson University
2023	Reviewer for Promotion and Tenure for candidate at Towson University
2023	Program Committee Member, ASSETS 2023
2022	Reviewer, International Journal of Human-Computer Interaction
2022	Program Committee Member, Web4All Conference 2023
2022	Reviewer, ACM CSCW 2023
2022	Reviewer, ACM CHI 2023
2022	Reviewer, International Conference on Information Systems, ICIS 2022
2022	Manuscript Reviewer, Decision Support Systems
2022	Program Committee Member, ASSETS 2022
2022	Program Committee Member, ACM Web4All
2021	Reviewer, ACM CHI (CHI 2022)
2021	Reviewer, iConference (iConference 2022)
2021	Program Committee Member, AcessBuilt2021
2021	Reviewer, TAPIA Conference (Workshop Committees)
2021	Manuscript Reviewer, ACM Mobile HCI (MobileHCI 2021)
2021	Program Committee, Best Paper Committee, Student Research Competition Judge, ASSETS 2021
2020	Reviewer, iConference (iConference 2021)
2020	Program Committee, Web Conference (Web 2021)
2020	Reviewer, TAPIA Conference (Workshop Committees)
2020	Program Committee, ACM Conference on Computers and Accessibility Committee (ASSETS 2020).
2019	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2020)

2019	Manuscript Reviewer, iConference (2020)
2019	Manuscript Reviewer, Universal Access in the Information Society
2019	Manuscript Reviewer, ACM Transactions on Accessible Computing
2019	Program Committee, Where Are You Now Workshop, SOUPS 2019
2018	Program Committee, USEC 2019
2018	Program Committee and Doctoral Consortium Committee (Mentor), iConference 2019
2018	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2019)
2018	Manuscript Reviewer, International Journal of Human-Computer Studies
2018	Manuscript Reviewer, Interacting with Computers
2017	Host, DCAPS Anonymity, Privacy and Security Seminar at UMBC
2017	Faculty Grant Reviewer – Towson University
2017	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2018)
2017	Manuscript Reviewer, HFES Conference
2017	Manuscript Reviewer, Universal Access in the Information Society
2016	Manuscript Reviewer, ICSI
2016	Program Committee Member, ACM SIGACCESS Conference on Computers and Accessibility
2016	Manuscript Reviewer, IEEE Internet Engineering
2016	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2017)
2016	Manuscript Reviewer, Transactions on Haptics
2016	Manuscript Reviewer, Transactions on Accessible Computing
2016	Manuscript Reviewer, Universal Design Conference (UD'16)
2016	Program Committee Member, International Cross-Disciplinary Conference on Web Accessibility (W4A 2016)
2015	Manuscript Reviewer, International Journal of Human-Computer Studies

2015	Manuscript Reviewer, Transactions on Accessible Computing
2015	Program Committee Member, ACM SIGACCESS Conference on Computers and Accessibility – (Posters and Demos)
2015	Manuscript Reviewer, Human-Computer Interaction journal (HCI)
2015	Session Chair, CTS Conference
2015	Program Committee Member, International Cross-Disciplinary Conference on Web Accessibility (W4A 2015)
2014	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2015)
2014	Manuscript Reviewer, ACM Transactions on Accessible Computing
2014	Manuscript Reviewer, Eurohaptics 2014
2014	Program Committee Member, Universal Design Conference
2014	Organizing Committee, ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2014). Role: Accessibility Co-Chair
2013	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2014)
2013	Program Committee Member, International Cross-Disciplinary Conference on Web Accessibility (W4A 2013)
2013	Program Committee Member, Workshop on Mobile Accessibility (MOBACC 2013)
2013	Program Committee Member, International Workshop on Haptic Audio Interaction Design (HAID 2013)
2013	Manuscript Reviewer, ACM Transactions on Haptics (THAPTICS)
2013	Manuscript Reviewer, ACM Symposium on User Interface Software and Technology (UIST 2013)
2013	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2013)
2013	Manuscript Reviewer, Graphics Interface Conference (GI 2013)
2012	Organizing Committee, ACM Conference on Computers and Accessibility Organizing Committee (ASSETS 2012). Role: Treasurer & Registration Chair

2012	Program Committee Member, International Workshop on Haptic Audio Interaction Design (HAID 2012)
2012	Manuscript Reviewer, ACM Symposium on User Interface Software and Technology (UIST 2012)
2012	Manuscript Reviewer, Transactions on Accessible Computing
2011	Program Committee Member, ACM Conference on Computers and Accessibility (ASSETS 2011)
2011	Program Committee Member, Workshop on Mobile Accessibility (MOBACC 2011)
2011	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2011)
2011	Manuscript Reviewer, Haptics Symposium
2011	Manuscript Reviewer, International Conference on Multimodal Interfaces (ICMI 2011)
2011	Manuscript Reviewer, Workshop on Information Technology and Systems
2010	Program Committee Member, ACM Conference on Computers and Accessibility (ASSETS 2010)
2010	Manuscript Reviewer, ACM Conference on Human Factors in Computing Systems (CHI 2010)
2010	Manuscript Reviewer, International Journal of Human Computer Studies
2010	Manuscript Reviewer, Transactions on Accessible Computing
2010	Manuscript Reviewer, Universal Access in the Information Society
2009	Student Research Competition Judge, ACM Conference on Computers and Accessibility (ASSETS 2009)
2009	Manuscript Reviewer, ACM Conference on Computers and Accessibility (ASSETS 2009)
2009	Manuscript Reviewer, Haptic Audio Interface Design Workshop (HAID 2009)
2009	Manuscript Reviewer, International Journal of Human Computer Studies
2009	Reviewer, National Science Foundation Panel for HCC area proposals

2009	Manuscript Reviewer, Human Computer Interaction International (HCII 2009)

Professional Development

2022	IAAP CPAAC (Accessibility) Certified
2021	Participant, Mental Health First Aid training, UMBC
2019 – 2021	Participant, UMBC ALIT Certificate, Faculty Development Center (Status: Awarded 2021)
2018-2019	Attendee, STRIDE events for supporting recruitment of faculty from diverse backgrounds
2012	Participant, CBI Higher Education Accessibility, Arlington, VA
2010	Participant, Integrating Usability and Accessibility into Information Assurance Education, Bowie, MD.
2010	Participant, Deaf and Hard of Hearing Community of Practice, Milwaukee, WI
2009	Participant, CBI Higher Education Accessibility, University of Washington, WA
2008 – Present	Member, Association for Computing Machinery

The attached curriculum vitae is complete and accurate.

Signature: 

Name: Dr. Ravi Kuber

Date 11/25/2024

The attached ctLu-iculwn vitae *is* complete and accurate.

Signature: 

Printed Name: _____

Date: _____

CURRICULUM VITAE

LEIZHANG

EDUCATION

Ph.D.	2015	McMaster University, Computer Science
MSc.	2008	The University of Hong Kong, Computer Science
BSc.	2004	Zhejiang University, Computer Science

Experience in Higher Education

2022 - Present University of Maryland Baltimore County, Assistant Professor, Information Systems

2017 - 2022 Toronto Metropolitan University (formerly Ryerson University), Post-doctoral Researcher, Computer Science

Experience in Other than Higher Education

2020 - Present	Canada, Co-founder, Quarta Inc.
2016 - 2017	Canada, Biomedical Software Engineer, Mariner Endosurgery Inc.
2008 - 2009	Hong Kong, Software Engineer, Hong Kong Communication Technology Inc.
2006 - 2007	China, Software Engineer, SIM Technology.
2004-2006	China, Software Engineer, Mitac Computer Ltd.

Honors Received

2021	2021 Project of the Year, The IBM Center for Advanced Studies
2020	Distinguished Paper Award, The 42nd International Conference on Software Engineering
2019	Faculty of Science Dean's Research Fund, Ryerson University
2015	Engineering Graduate School Travel Award, McMaster University
2008	Master's Degree Pass with Distinction, The University of Hong Kong
2007	China Student Scholarship Award, The University of Hong Kong

Research Support and/or Fellowships

2024 - 2027 $999,461, National Science Foundation, Experiential Leaming for Emerging and Novel Technologies, **P.I.**

2024-2025	$24,980, UMBC Strategic Awards for Research Transitions, P.I.
2023 -2023	$6,000, UMBC Summer Research Faculty Fellowship, **P.I.**
2023 -2024	$3,500, UMBC Hrabowski Innovation Fund Seed Grant, **P.I.**
2025 -2028	$599,977, National Science Foundation, Computer and Information Science and

Engineering: Core Programs, Pending, **P.I.**

2021 - 2023 $33,010 (CAD), Ryerson University, Dean's Research Fund, Post-Doctoral Fellowship

2020-2022 $188,010 (CAD), NSERC CRD: Improved Robustness and Transparency of Cloud Platforms, Project Coordinator/Researcher

2020- 2021 $34,000 (CAD), IBM Center for Advanced Studies, Post-Doctoral Fellowship

2018 - 2020 $72,000 (CAD), Ryerson University, Dean's Research Fund, Post-Doctoral Fellowship

2018 - 2019 $50,000 (CAD), OCE VIP: Regression Testing of Datasets, Project Coordinator/Researcher

2017 - 2018 $50,000 (CAD), OCE VIP: Scalable Simulation for Management of Large and Dense Crowds, Project Coordinator/Researcher

Ph.D. Students

Ainaz Jamshidi, 2024 - 2028 (expected), Supervisor
Fang Yuan, 2023 - 2028 (expected), Supervisor
Nadeem Ahmed, 2023 - 2028 (expected), Co-supervisor

Master's Students

Khushdeep Kaur, 2023 - 2024 (thesis-based), Supervisor
Sireesha Bommareddy, 2023 (independent study), Advisor
Ishan Joshi, 2023 (independent study), Advisor
Charan Duggirala, 2023, Master's thesis examination committee (Dean's Representative)

Undergraduate Students

Dongchan (Nick) Kim, 2024 (independent study), Advisor
Mikayla Hopper, 2023, research project (Undergraduate Student Research Award Recipient), Advisor

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications (Students under my supervision are indicated with an underscore.)

Peer-Reviewed Work

Articles

1. **L. Zhang,** A.V. Miranskyy, W. Rjaibi, G. Stager, M. Gray and J. Peck, Making Existing Software Quantum Safe: A Case Study on IBM Db2, *Information and Software Technology,* 2023.
2. **L. Zhang,** S. Howard, T. Montpool, J. Moore, K. Mahajan and A.V. Miranskyy, Automated Data Validation: An Industrial Case Study, *Journal of Systems and Software,* Elsevier, 2022.
3. W. Pourmajidi, **L. Zhang,** J. Steinbacher, T. Erwin and A. Miranskyy, Immutable Log Storage as a Service on Private and Public Blockchains, *Transactions on Services Computing,* IEEE, 2021.
4. **L. Zhang,** A.V. Miranskyy and W. Rjaibi, Quantum Advantage and Y2K Bug: Comparison, *IEEE Software,* 38(2), IEEE, 2021.
5. **L. Zhang,** D. Lai and A.V. Miranskyy, The Impact of Position Errors on Crowd Simulation, *Simulation Modelling Practice and Theory,* 90(2019), Elsevier, 2019.
6. **L. Zhang** and D.G. Down, APEM - Approximate Performance Evaluation for Multi-core Computers, *Journal of Circuits, Systems, and Computers,* 28(1), World Scientific, 2018.

Chapters in Books

1. M. Radnejad, K. Kaur, H. Song, **L. Zhang,** Methods and Tools to Improve Quantum Software Quality: A Survey, Chapter 12 of *"Quantum Machine Learning, Quantum Algorithms and Neural Networks",* 2023.
2. W. Pourmajidi, **L. Zhang,** A. Miranskyy, T. Erwin, D. Godwin and J. Steinbacher, The Challenging Landscape of Cloud-Monitoring, accepted in the book of *"Knowledge Management in Development of Data-Intensive Systems",* 2020.
3. **L. Zhang** and D.G. Down, SMVA: A Stable Mean Value Analysis Algorithm for Closed Systems with Load-dependent Queues, Chapter 2, in the book *of"Systems Modeling: Methodologies and Tools",* Springer, 2018.

Conference Proceedings

1. **L. Zhang,** A. Miranskyy, Automated Flakiness Detection in Quantum Software Bug Reports, accepted by *the 4'h International Workshop on Quantum Software Engineering and Technology (Q-SET),* 2024.

2. **L. Zhang,** M. Radnejad, A. Miranskyy, Identifying Flakiness in Quantum Programs, In Proc. of *the* International Symposium on Empirical Software Engineering and Measurement *(ESEM),* 2023.
3. K. V. Kher, M. B. Chandra, I. Joshi, **L. Zhang,** M. V. P. Rao, Automated Diagnosis of Quantum Software Bug-Fix Motifs, in Proc. of *the 35th International Coriference on Software Engineering and Knowledge Engineering (SEKE),* 2023.
4. J. Baskararajah, **L. Zhang,** A. Miranskyy, Term Interrelations and Trends in Software Engineering, in Proc. of *the ACM joint European Software Engineering Coriference and Symposium on the Foundations of Software Engineering (ESEC/FSE),* 2021.
5. M. S. Islam, W. Pourmajidi, **L. Zhang,** J. Steinbacher, T. Erwin and A. Miranskyy, Anomaly Detection in a Large-scale Cloud Platform, in Proc. of *the 43rd International Coriference on Software Engineering (!CSE),* 2021.
6. A.V. Miranskyy, **L. Zhang** and J. Doliskani, Is Your Quantum Program Bug-Free? in Proc. of *the 42nd International Coriference on Software Engineering (!CSE),* 2020. **(Distinguished Paper Awards).**
7. A.V. Miranskyy and **L. Zhang,** On Testing Quantum Programs, in Proc. of *the 4JSl International Coriference on Software Engineering (!CSE),* 2019.
8. W. Pourmajidi, **L. Zhang,** J. Steinbacher, A.W. Erwin and A.V. Miranskyy, Immutable Log Storage as a Service, in Proc. of *the 4JS' International Coriference on Software Engineering (!CSE),* 2019.
9. **L. Zhang** and D.G. Down, A Stable Mean Value Analysis Algorithm for Closed Systems with Load-dependent Queues, in Proc. of *the 10th EA! International Coriference on Performance Evaluation Methodologies and Tools (VALUETOOLS),* 2016.
10. **L. Zhang** and D.G. Down, Approximate Mean Value Analysis for Multi-core Systems, in Proc. of *the International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS),* 2015.
11. I. Al-Azzoni, **L. Zhang** and D.G. Down, Performance Evaluation for Software Migration, in Proc. of *the 2nd ACM/SPEC International Coriference on Performance Engineering (JCPE),* 2011.

Works Submitted or In **Preparation**

In Preparation

1. A. Miranskyy, **L. Zhang,** J. Doliskani, On Testing and Debugging Quantum *Software,preprint.*
2. W. Pourmajidi, **L. Zhang,** J. Steinbacher, T. Erwijn and A. Miranskyy, A Reference Architecture for Observability and Compliance of Cloud Native Applications, Transactions on Software Engineering.
3. P. K. Nayak, K. V. Kher, M. B. Chandra, M. V. P. Rao, **L. Zhang,** Q-PAC: Automated Detection of Quantum Bug-Fix Patterns, Information and Software Technology.

Submitted

I. J. Sivaloganathan, A. Jamshidi, A. Miranskyy, **L. Zhang,** Automating Quantum Software Maintenance: Flakiness Detection and Root Cause Analysis, submitted to ICSE 2025

2. A. Jamshidi, K. Kaur, A. Gangopadhyay, **L. Zhang,** Let Students Take the Wheel: Introducing Post-Quantum Cryptography with Active Learning, submitted to ICSE 2025

3. A. Virani, D. D, A. Suresh, **L. Zhang** and P. Rao MV, Bias-Entropy Approach for Differentiating between Bugs and Noise in Quantum Programs, submitted to ICST 2025.
4. K. Kaur, D. Kim, A. Jamshidi and **L. Zhang,** Identifying Flaky Tests in Quantum Code: A Machine Learning Approach, submitted to Q-SANER 2025.
5. **L. Zhang,** A. Miranskyy, W. Rjaibi, G. Stager, M. Gray and J. Peck, Making existing software quantum safe: A case study on IBM Db2, submitted to SANER 2025 (Journal First).

Presentations

Conference/Poster Presentations (Juried/Refereed)

1. Conference Presentation at QCE'24, Montreal, Canada, September, 2024
2. Conference Presentation at ESEM'23, New Orleans, USA, October, 2023
3. Conference Presentation at ICSE'20, Korea (online), July, 2020
4. Conference Presentation at IBM CASTLE'20, Canada (online), May, 2020
5. Poster Presentation at ICSE'19, Montreal, Canada, May, 2019
6. Poster Presentation at CASCON'18, Toronto, Canada, October, 2018

7. Workshop Presentation at IBM CASTLE'l8, Toronto, Canada, May, 2018
8. Conference Presentation at VALUETOOLS' 16, Taormina, Italy, October, 2016
9. Conference Presentation at SPECTS'l5, Chicago, USA, July, 2015

Conference/Poster Presentations (Non-Juried/Refereed)

1. A. Jamshidi, K. Kaur, A. Gangopadhyay, **L. Zhang,** Let Students Take the Wheel: Creating Active Learning Modules for Introducing Quantum Cryptography to STEM Students, Provost's Teaching and Learning Symposium, UMBC, 2024.
2. A. Miranskyy, **L. Zhang,** W. Rjaibi, G. Stager, J. Peck, Making Existing Software Quantum-Resistant, *Center for Advanced Studies Technical Link Event (CASTLE '20).*
3. **L. Zhang,** Performance Evaluation for Multi-tier Cloud Applications, in Workshop of *Taming Services for IBM Cloud, Coriference of the Center for Advanced Studies on Collaborative Research (CASCON '19).*
4. W. Pourmajidi, **L. Zhang,** M. Islam, T. Erwin, J. Steinbacher, D. Godwin, J. Brumer, S. Woolf, A.V. Miranskyy, Dogfooding: Use IBM Cloud Services to Monitor IBM Cloud Infrastructure, *Coriference of the Center for Advanced Studies on Collaborative Research (CASCON'J9)* and *Center for Advanced Studies Technical Link Event (CASTLE'J9).*
5. W. Pourmajidi, **L. Zhang,** T. Erwin, J. Steinbacher, D. Godwin, A.V. Miranskyy, ROAD-Realtime Outlier and Anomaly Detection for IBM Cloud, *Coriference of the Center for Advanced Studies on Collaborative Research (CASCON'l8)* and *Center for Advanced Studies Technical Link Event (CASTLE'l7).*

Other Professional Presentations

1. Invited Talk at Center for Women in Technology (CWIT), November, 2023
2. Invited Talk at Consortium for Software Engineering Research, Canada (online), May, 2021
3. Invited Talk at IBM Toronto Software Lab, Canada (online), August, 2020
4. Invited Talk at CASCON'l9, Toronto, Canada, November, 2019
5. Invited Talk at Laipac Technology Inc., Toronto, Canada, November, 2017
6. Invited Talk at Huawei Canada Research Center, Toronto, Canada, July, 2015

Creative Achievements

Intellectual Property

1. W. Pourmajidi, A.V. Miranskyy, **L. Zhang,** A. Erwin, D. Godwin, J. Steinbacher, Feedback-Based Automatic Anomaly Detection for Cloud Platforms, IPCOM 000260742D, (2019) (IP publication).

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITE AND PROFESSION

Department

1. 2024 - 2025, Committee Member, Research Committee
2. 2024 - 2025, Committee Member, Graduate Admission Committee
3. 2023 - 2024, Committee Member, Search Committee
4. 2023 - 2024, Committee Member, Graduate Committee

University

1. 2024, Panel Member, New Faculty Welcome Event
2. 2024, Guest Speaker, New Faculty Mentorship Program
3. 2023-2024, Member, New Faculty Mentorship Program
4. 2022-present, Member, Asian and Asian American Faculty Staff Council

Profession

1. 2024, Guest Editor, Pivoting Quantum Computing Using Software Engineering Best Practices, Journal of Computing
2. 2024, Co-Chair, Fifth International Workshop on Quantum Software Engineering (Q-SE), co-located with ICSE'24

3. 2024, Reviewer, The Journal of IEEE Software
4. 2024, Program Committee Member, The IEEE International Conference on Software Testing, Verification and Validation (ICST'25)
5. 2024, Program Committee Member, The Sixth International Workshop on Quantum Software Engineering (Q-SE'25)
6. 2024, Program Committee Member, The IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER'25)
7. 2024, Reviewer, The Journal of ACM Transactions on Software Engineering and Methodology
8. 2024, Program Committee Member, The International Symposium on Empirical Software Engineering and Measurement (ESEM)
9. 2024, Program Committee Member, Empirical Studies for Quantum Software Engineering (E-QSE)
10. 2024, Program Committee Member, The Fourth International Workshop on Quantum Software Analysis, Evolution and Reengineering (Q-SANER), co-located with SANER'24
11. 2023, Reviewer, The Journal of ACM Transactions on Software Engineering and Methodology
12. 2023, Reviewer, The Journal of IEEE Transactions on Quantum Engineering
13. 2023, Reviewer, The Journal of Systems and Software
14. 2023, Program Committee Member, The Third International Workshop on Quantum Software Analysis, Evolution and Reengineering (Q-SANER), co-located with SANER'23
15. 2023, Program Committee Member, The Third International Workshop on Quantum Software Engineering and Technology (Q-SET), Seattle, USA
16. 2023, Reviewer, NSF
17. 2023, Reviewer, Book Proposal, Springer
18. 2023, Reviewer, Scientific Reports, Nature
19. 2023, Reviewer, Quantum Information Processing, Springer
20. 2023, Reviewer, IEEE Transactions on Intelligent Transportation Systems
21. 2023, Program Committee Member, The Fourth International Workshop on Quantum Software Engineering (Q-SE), Melbourne, Australia
22. 2023, Program Committee Member, The First International Workshop on the Art, Science, and Engineering of Quantum Programming (QP), Tokyo, Japan/Online
23. 2022, Reviewer, The Journal of IEEE Transactions on Quantum Engineering
24. 2022, Reviewer, The Journal of Empirical Software Engineering
25. 2022, Program Committee Member, International Conference on the Quality of Information and Communications Technology (QUATIC), Talavera de la Reina, Spain
26. 2022, Program Committee Member, The First International Workshop on Quantum Software Analysis, Evolution and Reengineering (Q-SANER), Honolulu, Hawaii
27. 2021, Reviewer, The Journal of Automated Software Engineering
28. 2021, Shadow Program Committee, The 2021 Mining Software Repositories (MSR), Online
29. 2021, Program Committee Member, The Second International Workshop on Quantum Software Engineering (Q-SE), Online
30. 2021, Program Committee Member, The 2021 Conference of the North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL-HLT), Mexico City, Mexico
31. 2020, Review Committee Member, The 2020 Conference on Empirical Methods in Nature Language Processing (EMNLP), Online
32. 2020, Reviewer, The 58tl' Annual Conference of the Association for Computational Linguistics (ACL), Online
33. 2019, Reviewer, The 29tl, International Conference on Computer Science and Software Engineering (CASCON), Toronto, Canada
34. 2019, Reviewer, The Journal of Systems and Software

35. 2019, Reviewer, The 27tl' IEEE International Requirements Engineering Conference (RE), Jeju Island, South Korea
36. 2018, Co-Reviewer, The 28th International Conference on Computer Science and Software Engineering (CASCON), Toronto, Canada

MARGARET M. KAHL

2910 Timber Trails Court, Ellicott City, MD 21042
kahl@umbc.edu, (410) 215-5997 (Cell)

EDUCATION

MS in Operations Analysis, 1990 - University of Maryland Baltimore County
BS in Information Systems Management, 1984 - University of Maryland Baltimore County

PROFESSIONAL EXPERIENCE

1/2024 – Present

Course Lead for IS 202, IS 438, IS 440

The course lead for IS 202, IS 438, and IS 440. Work with adjuncts who are teaching these courses to create consistency within all sections of each course; meet with the adjuncts to discuss curriculum development, such as how the courses' content aligns with the department goals and industry requirements; discuss striving to have lectures, slides, assignments, tests, and projects consistent throughout the sections of each course so that all students are getting the same level of instruction.

1/2024 – Present

Mentor for College Teaching and Learning Science

Mentored a graduate student for the Spring 2024 semester who was in their teaching practicum. Guided them through the process of lecture preparation, delivery, learning activities relevant to the topics discussed in class, teaching strategies, classroom philosophy, student engagement, and worked with them on their own lecture of two chapters. Evaluated and provided feedback on each lecture.

1/2024 – Present

Women in Technology Panel

Talk with women, who have been admitted but not yet committed to UMBC, the opportunities and community available in technology at UMBC, share my experiences as

an undergraduate, graduate, and Lecturer in technology at UMBC and the resources that UMBC has to offer.

9/2023 – Present

PLTW (Project Lead the Way) Program Advisory Committee

Advising young women, who are interested in engineering, about the possibilities that are open to them, how to prepare for courses to take in high school (PLTW Career Academy), educate them on the Engineering disciplines at UMBC and meeting with representatives from the Engineering Department.

9/2023 – Present

Adjunct Review Committee

Adjunct Faculty Search - advertise for adjunct faculty, filter CVs that would meet the departments requirements, interview candidates, narrow down the list based on parameters that were set, and hire adjunct.

Adjunct Promotion Review – assess those who have applied for Adjunct Promotions. Evaluate based on criteria for Adjunct II's completion of teaching at least 13 courses during the fall and/or spring semesters, taught for at least 6 fall or spring semesters, received high evals for multiple terms, syllabus, exams and assignments, feedback from students, CV with additional academic qualifications. The criteria that was used to evaluate for Adjunct III are that they are currently at a rank of Adjunct II, feedback from students, taught at a rank of Adjunct II for at least 12 fall and spring semesters, taught a total of more than 24 courses (each of 3 credits or more) during those semesters at the rank of Adjunct II, teaching evaluations consistently above the median SEEQ, record of teaching excellence and leadership in teaching – new curriculum, innovation, teaching scholarship, classroom observation, service (optional) to UMBC, professional, government, public), current curriculum vita in UMBC format (template for required format attached); course materials from multiple courses/semesters taught including course syllabi, teaching assignments, feedback to students and other course materials, SEEQs for each course taught over the past five years, evidence documenting excellence in teaching and teaching leadership. Observe adjunct wanting to be promoted to Adjunct III and submit observation notes for the Adjunct Committee Chair.

Adjunct Annual Review – assess each adjunct based on the assessment of adhering to UMBC procedures and policies, student course evaluations SEEQ, consistent with full-time lead, feedback from the students, faculty development, maintain regular office and classroom hours, using UMBC email, attending IS Department's Annual Adjunct Orientation meeting, making adjustments based on previous feedback, CV, syllabi and self-assessment. Adjuncts are reviewed and evaluated if they meet expectations, exceed expectations, or fall below expectations.

3/2023 – 5/2024

BTA Curriculum Advisory Committee

Rebrand the BTA program to bring out its strengths, review existing BTA curriculum and identify the key learning objectives and key assignments/artifacts of each course. Understand how the students currently progress in their learning goals and identify potential overlap and/or new topics we should include. Work with the Faculty Development Center to facilitate the Curriculum Mapping and Assessment to identify the key learning objectives of each course to analyze the curriculum.

Start the process of mapping the BTA courses to their course learning outcomes to relate knowledge, skills, and attitudes learning will demonstrate by completing the courses. Responsible for the process of mapping IS 202, IS 438, and IS 440's formative and summative learning, working on the meta cognitive skills of each course to analyze the course level outcomes. There is a scaffolding to learning and creating, such as reading, discussions, assignments, tests, projects, etc. Currently looking at the high-level of the courses and will be drilling down into more detail as our mapping proceeds. Topic areas include the 3-sphere business model: Demonstrate leadership skills and familiarity of business law and ethics for enterprises, Demonstrate Use IT applications if various business areas, Demonstrate the use of business model and tools AI. The committee has met with Jennifer Harrison (FDC) to learn more about the mapping process that is centered about the learning outcomes: learning the basic ideas, practice and build the students learning in the outcome, complicate and refine the students learning in the outcome, and develop undergraduate level proficiency in the learning outcome.

9/2022 – Present

Research Park Advisory Committee

Stayed current on proposals, awards, extramural expenditures, and F & A recovery. Current updates on Regional Innovations Engine's new program; Advanced Manufacturing Materials and Processes GPS laser on the battlefield; NSF Regional Innovation Engines Type 1 concept – food quality and food insecurity; GSC Ground Vehicle Systems' next gen combat vehicle; AirPhoton's innovative technology for analytics for earth and space; NASA – design measurements; and Venturist in France to build satellite payloads.

11/2022 – 11/2023

Mentor for the Information Challenge

Mentor students and help the teams understand the problem statement asked by the organization that submitted the dataset or challenge statement and coach the students as they work through the problem for the week. The students solve real-world

information challenges, make industry contacts, develop solutions for organizations like Booz Allen, the US National Cancer Institute, US Department of Housing and Urban Development.

8/2022 – Present

Honors and Awards Committee

Responsible for identifying and evaluating students who have demonstrated remarkable skills and abilities and honoring them with awards, such as: Outstanding IS Students, Outstanding BTA Students, Student Leadership Award, valedictorians, John B Schwartz Scholarship, Legg Mason Scholarship, Vijay Jose Scholarship.

Examine the top GPA achievers for the IS and BTA degrees and evaluate each student based on various criteria. This included determining if the student transferred to UMBC and their status, evaluate their involvement in the IS department (such as ISCOM), assess their participation in other honor societies or organizations at UMBC, and explore their leadership experience.

2/2020 – 5/2023

Undergraduate Committee

Review the curriculum to ensure that it aligns with current industry trends and emerging technologies and evaluates the effectiveness of the program in preparing students for their future careers. Additionally, work closely with the department faculty to identify areas for improvement and make recommendations for changes to enhance the overall quality of the undergraduate program. The goal is to ensure that UMBC's IS program remains competitive and provides students with a high-quality education that prepares them for success in their chosen field.

Assess courses that lead to attrition of students or increased time to graduation, work on current course transfer policies, adopt new courses, create a pathway for students who take CMSC 201 to be able to take IS 247 directly, the new Business Analytics Certificate, develop a process for identifying students for the student leadership awards , update BS/MS-HCC, BA/MS-HCC, work on creating a new BS-CS/MS-HCC, update the IS and BTA academic pathways, update the description of the IS major in the catalog, and manually overrode all those who earned 'C' in IS 300 and IS 310 Gateway courses in Spring 2020 only.

Work on changes in course descriptions, changes in prerequisites, adding new classes, proposing changes in current classes, course name changes, new minors, making changes to current minors, revamping BTA, collect information from those teaching

gateway courses and assessing why 65% pass the gateway, discuss the potential of students using Chapgpt in class, assess the IS Department website and give recommendations on how to update it with the student's perspective in mind, (based on questions that students often have) including updating the prerequisites for all courses in the IS, BTA, Minor, and Certificates, revising the confusing IS program diagram, providing prerequisites for each of the courses in our program, updating the research section for students to find which professor is currently conducting research in a specific area, and adding the Internship guidelines and policies, compiling a comprehensive list of job titles and employers that have previously hired graduates from the IS program.

9/2019 – 5/2023

Lecturer/PoP Search Committee

Responsible for filling the available Lecturer/PoP positions in the IS Department by undertaking a comprehensive process which includes defining the roles and responsibilities of each position, creating a diversity plan and advertisement, and inviting members from STRIDE to consult to ensure that the approach aligns with UMBC's vision. Post the advertisement and establishing rating criteria for the applicants, view applications, review each CV on relevance of degree, industry experience, teaching experience, diversity understanding, and advising experience and evaluate based on the parameters set. Rank each candidate, writeup assessments, invite the candidates with the highest rank to interview. The candidates interview the committee, lecture for an hour to the department, answer questions from the department, meet to follow-up about each candidate lecture's content, relevance, and delivery. Candidates are recommended to the Chair of the IS Department for approval.

1/2019 – Present

UMBC Lecturer, Dept of Information Systems

IS 202 Systems Analysis Methods - assign a systems proposal project that involves systems analysis, where student groups meet with actual companies to gather data and identify problems and/or opportunities for improvement. The project requires the students to consider budget, timeframe, and requirements from the company, and propose a solution based on their research. Through this project, the students gain experience in breaking down a project, understanding the processes of a company, and identifying the technology needed for a specific task. The project also helps them appreciate the importance of research and proposal writing. In addition, homework is assigned that requires students to apply the methodologies and technology discussed in class to a real-world company scenario. Additionally, to evaluate their understanding of the subject matter, each student completes the homework assignments and brings them to class for a brief one-on-one meeting with me.

IS 438 – Project Management - the framework focuses on teaching new information and relating it to real-life experiences. Aspects of Project Management including project integration management, project requirements, project charter, stakeholders, resource management, integration management, scope management, schedule management, cost management, quality management, resource management, communications management, risk management, and procurement management, were taught. The students encounter new knowledge from lectures, slides, textbooks, my experiences, and other related real-world examples. After each chapter is taught, a project management dilemma is posed and have students meet in their groups to discuss how they can use what they have learned so far to brainstorm different ways to approach the dilemma from the PM's perspective, as well as the group members and stakeholders. Each of these scenarios' understanding pairs well with what they are learning and what they may encounter in their projects.
The groups work with real-life companies that are at various stages of their projects (ie the beginning of a project where the company is working on the project charter, or in the middle when the tasks are being completed to the requirements, time, budget, or towards the end when the final project deadline is approaching and discussions about whey the project won't be done on time, etc).

IS 440 - Integrating Technology into Business Processes - material learned is related to the different levels of management that the students may be working with after graduation; students work with a real-life competitive company (one that the student finds and chooses as a group) that needs to transition to new technology or update current tech. Students work with a point-person at the company who they will meet with about the topics in their project. The course is set up for the students to start with a project charter at the beginning of the semester that assigns each group member's tasks they are responsible for. The students interview the point person about the roles and responsibilities, and projects the CSO, CTO, CPO, CIO, and CKO are working on.
IS 440 is designed for the students to understand the perspectives of each of these roles and relate their jobs to internal and external databases' validation testing, data analytics, data visualization, their use of AI, software/systems development methodologies, the competitive edge strategies they use, and project management.

1/2019 – Present

IS Department Advisor

Responsible for providing departmental advising to 150 Information Systems and BTA students. Assist students with both semester and long-term advising, ensuring that they take the appropriate courses to complete their academic career as efficiently as possible, and explaining the different courses and working with them to fit everything together.

Also assisting students by writing letters of recommendation for their applications to graduate schools and future job opportunities; conduct graduation reviews for students who have applied for graduation by thoroughly examining their academic record to ensure that they have fulfilled the IS/BTA requirements and determine if they are

eligible to graduate or not, approve or disapprove their application, and identify any pending courses.

In addition, assist students with SAP (Satisfactory Academic Progress) Appeals. Work with the students to develop an academic success plan that meets their needs and helps them succeed, review their written plan, provide additional notes and feedback to ensure their success, then approve or deny the appeal based on the information presented.

1/2019 – Present

UMBC Orientation Advisor

Represent the IS Department in Winter and Summer Orientation advising sessions for incoming freshmen and transfer students through the registration process. Introduce the students to university resources, guide them through the registration process, assist them with finding open classes they need, and help them transition from high school or another college to UMBC.

1/2019 – 5/2022

Member of the Computer Policy Committee - worked on the requirements of using Duo among all faculty and evaluated the number of faculty using Bb Ultra and discussed any issues with Ultra (and updated the rollout plan for each department), navigated through academic continuity (Covid), collected information on student's access to the Internet, laptop requirements policy, surveyed what has been learned from remote instructions that can be addressed for future online courses, what courses shouldn't be moved online, assessment of online classes, and moved to asynchronous learning. Surveyed the university to determine what was learned from remote instruction that can be addressed for future online courses, reviewed, and suggested updates on laptop requirement policy, computer replacement initiative.

8/2003 – 1/2019

UMBC Adjunct Lecturer, Department of Information Systems
Courses taught: Systems Analysis Methods, Management Information Systems, Integrating Technology into Business Processes, The Practice of Management.

Lectured on real-life company analysis, research on current technology and how it related to the course work with open student discussions, information systems, planning techniques, systems development methods, SWOT, competitive edge, data modeling, process modeling, force field analysis, technological change considerations, decision making, virtual collaboration.

Assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

9/1997 – 4/2019

Adventure Web Interactive, IT Consultant

Worked with clients and their web development needs, budget, target audience, marketing materials, time frame, images/logos, content, mobile apps; worked with project team on timelines, client training, developed customer intake files, and oversaw maintenance of website.

9/2008 – 5/2011

Strayer University Adjunct Professor, Owings Mills, MD
Course taught: Introduction to Information Systems, Relational Database Management Systems, and Systems Analysis and Development.

Lectured on developing Information Systems, designing databases, project management, data modeling, process modeling.

Assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

8/2001 – 5/2003

UMBC Full-time Lecturer, Dept. of Information Systems
Courses taught: Systems Analysis Methods, Structured Systems Analysis and Design, Management Information Systems, Integrating Technology into Business Processes, Decision Support Systems, The Practice of Management.

Lectured on data modeling, process modeling, system development methods, designing databases, assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

Advised students on course requirements, prerequisites, registration approval, and graduation requirements met.

9/1991 –5/2001

UMBC Adjunct Lecturer, Dept. of Information Systems
Courses taught: Systems Analysis Methods, Structured Systems Analysis and Design, Management Information Systems, Integrating Technology into Business Processes, Decision Support Systems, The Practice of Management.

Lectured on analysis techniques, systems development processes, data gathering methods, determining feasibility, project management tools, analytical tools used for decision making, system proposals, prototyping, and strategic uses of IT.

Assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

9/94 – 2000

Johns Hopkins University - Adjunct Lecturer
SCS, Division of Business and Management
Course taught: Graduate and Undergraduate Information Technology courses – Information Systems Management, Computer Applications for Business, and Information Systems Principles.

Assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

Also, a JHU Faculty advisor for Graduate Capstone courses and Committee member for the development of the Cohort Group in IT.

8/1990 – 5/1991

UMBC - Full-time Lecturer, Dept. of Information Systems
Systems Analyst for the Department of Information Systems - managed a personal computer lab and a Hewlett Packard workstation lab, responsible for the analysis and procurement of all hardware and software for the department and labs, maintained the hardware, software, IBM Token Ring and Ethernet LANs. Staffed both labs, educated users on new procurements, developed, and documented departmental procedures, and served on the IS Department's Planning Committee.

Course taught: Systems Analysis and Design for sophomore and senior levels classes. Assessed students' work assignments, tested on theory and application, evaluated group project deliverables, encouraged educational development, and worked with students outside of class to better understand the material.

7/84 – 8/90

UMBC Bookstore – Full-time Systems Analyst
Analyzed the systems flow of information for each department within the retail establishment, proposed a three-year plan for computerization, researched current technology, wrote RFP for proposed system, evaluated alternatives, installed an IBM 36 minicomputer and networked ten terminals, created spreadsheets and statements in Lotus and Quattro, implemented a cash register system with CPU and POS capabilities, supervised all systems development activities, schedules and conducted training of all personnel involved, and maintained all systems and networks.

7/82-7/84

UMBC Bookstore – CO-OP Systems Analyst
Carried out extensive research in accounts payable, accounts receivable, inventory monitoring, and financial statements, which became the basis for analysis of the new bookstore system.

Ida Busiime Ngambeki

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cybersecurelab.com

ACADEMIC TRAINING

PhD, Engineering Education, Purdue University, West Lafayette IN (08/12)
Concentration: Ecological Sciences and Engineering

B.S. (with High Honors) Engineering, Smith College, Northampton MA (05/07)
Thesis: An exploration of choice, learning, and the formation of professional identity

PROFESSIONAL EXPERIENCE

Director – Cybersecure Lab (08/16 – present)
Assistant Professor – UMBC, Department of Information Systems (08/22 – present)
Assistant Professor – Purdue University, Department of Computer and Information Technology (08/16 – 06/22)
Academic Director – Cyber Education Network Training Resources (06/19 – 06/22)
Visiting Assistant Professor - Purdue University, Department of Computer and Information Technology (08/14 – 06/16)
Postdoctoral Researcher – Purdue University, Department of Technology, Leadership and Innovation (08/12 – 07/14)
Research Assistant – Purdue University, School of Engineering Education (08/07 – 08/12)
Student Academic Adviser – Purdue University, School of Engineering Education (06/08 – 07/08)
Research Assistant – Smith College Picker Engineering Program (05/05 – 07/07)
Research Assistant – University of Massachusetts, Department of Civil and Environmental Engineering (05/06 – 08/06)

GRANTS

Co-PI – Enhancing Emergent Cybersecurity Education: Strengthening and Piloting Curriculum in Secure Coding, AI in Security, Hardware insecurity, and Mobile Security. (Currently Under Review) PIs: Ida Ngambeki. Award Amount $50, 000. Program: WPI. (Subaward). PIs: Ida Ngambeki, Matt Bishop, Jun Dai. Amount: $2,500,000. Funding Agency: National Security Agency, National Centres of Academic Excellence in Cybersecurity (NCAE-C). Dates: 8/1/2024 -7/31/2027.

Co-PI - "A Clinic for Secure Programming," Ngambeki, Busiime, Grant (Currently Under Review), Sponsored by Google, Corporate Sponsor, $1,000,000.00.

PI - Strengthening Workforce Education: Excellence in Programming Securely (SWEEPS). PIs: Ida Ngambeki. Award Amount $804,193. Program: UC Davis. (Subaward). PIs: Ida Ngambeki, Matt Bishop, Jun Dai. Amount: $2,500,000. Funding Agency: National Security Agency, National Centres of Academic Excellence in Cybersecurity (NCAE-C). Dates: 8/1/2023 -7/31/2026.

PI – CyberCELL: Cybersecurity Curriculum Express Learning Library. PI: Ida Ngambeki. Award Amount $25,000. Program: UMBC Cybersecurity Exploratory Projects. Dates: 05/15/2023-06/30/2024.

Co-PI – Hrabowski Innovation Fund Competition: Quantum Immersion for Information Systems Undergraduates: An Experiential Learning Approach. PI: Lei Zhang. Award Amount $3,500. Program UMBC. Dates: 01/30/2023- 01/30/2025.

Co-PI – EAGER: SaTC EDU: AI Based Humour-Integrated Social Engineering Training. PIs: Julia Rayz, Ida Ngambeki. Award Amount: $300,000. Program: NSF Secure and Trustworthy Cyberspace. Dates: 01/01/2021 – 12/30/2024.

PI – SaTC:EDU: Collaborative: An Assessment Driven Approach to Self-Directed Learning In Secure Programming (Sectutor). PIs: Ida Ngambeki, Jun Dai, Matthew Bishop. Award Amount: $238,137. Program: NSF Secure and Trustworthy Cyberspace. Dates: 10/01/2019-09/30/2025.

PI – National Cybersecurity Teaching Academy. PIs: Ida Ngambeki. Award Amount: $60,000. Program: DePaul University/ National Security Agency. Dates: 09/01/2021 – 08/30/2025.

PI – CISA/CIRI Development of a Robust, Nationally Accessible Cybersecurity Risk Management Curriculum for Technical and Managerial Cybersecurity Professionals. PIs: Ida Ngambeki, Nicole Hands. Award Amount: $65,000. Program: DHS CISA. Dates: 09/01/2021 – 08/30/2022.

Co-PI – CISA/CIRI Institutes Planning Project: Utilizing an Academic Hub and Spoke Model to Create a National Network of Cybersecurity Institutes. PIs: Eugene Spafford, Ida Ngambeki. Award Amount: $400,000. Program DHS CISA. Dates: 09/25/2020 – 09/24/2021.

Co-PI - Purdue Cybersecurity Apprenticeship Program (P- CAP): Apprenticeships that Address the Critical Workforce Shortage in Cybersecurity. PIs: Steve Elliot, Ida Ngambeki, Geanie Umberger. Award Amount: $13,110,175. Program Department of Labour. Dates: 02/01/2020 – 01/31/2022.

PI - Developing a Data Privacy Framework for Rural Use of Digital Agriculture. PIs: Ida Ngambeki, John Springer, Austin Toombs. Award Amount: $13,000. Program: Purdue Polytechnic Institute Civic and Community Engagement. Dates 06/01/2019-06/30/2021.

PI - Finding and Reducing Bias for Natural Language Applications to Increase System Trustworthiness. PIs: Ida Ngambeki, Julia Rayz, Victor Raskin. Award Amount: $12,000. Program: Purdue Polytechnic Institute Holistic Safety and Security. Dates 06/01/2019-06/30/2021.

Co-PI - HapTutor-Lab: Promoting Complex Learning in STEM Domains through Intelligent Tutors and Haptic Feedback. PIs: Alejandra Magana, Sanjay Rebello, Bedrich Benes, Ida Ngambeki. Award Amount: $8,000. Program: Purdue Polytechnic Institute Future of Work and Learning. Dates 10/01/2018 – 06/30/2019.

Co-PI – CICI: CE: Enhancing Cybersecurity for Broadening Data Driven Research and Partnerships. PIs Sonia Fahmy, Ida Ngambeki, Bruno Ribiero, Xiao Zhu, Nicole Key. Award Amount: $841,506. Program: NSF Cybersecurity Innovation for Cyberinfrastructure. Dates: 10/01/2017 – 09/30/2019.

PI – Developing a Secure Programming Concept Inventory. PIs: Ida Ngambeki, Matt Bishop, Jun Dai. Award Amount: $299,931. Program: NSA National Cybersecurity Curriculum Program. Dates: 08/01/2018 – 07/31/2020.

Co-PI – Haptic Based Learning Experiences as Cognitive Mediators for Conceptual Understanding and Representational Fluency in Engineering Education. PIs: Alejandra Magana, Ida Ngambeki, Edward Berger, Bedrich Benes. Award Amount: $325,081. Award ID: EEC 1606396. Dates 08/01/2016 – 07/30/2020.

Co-PI - Collaborative Project: Development and Testing of a Secure Programming Clinic. PIs: Melissa Dark, Ida Ngambeki, Matt Bishop. Award Amount: $272,956. Award ID: DGE-1303048
Dates: 08/15/2014 - 07/31/2019.

Key Personnel - Engineering Students as Active Participants in Public Policy: An Integrated Cross-Curricular Approach. PIs: S. Rao, D. Evangelou, M. Cox. Grant type: Purdue Engineer of 2020. Award amount: $40,000. Dates: 2011-2012.

Key Personnel - Explaining the migratory patterns of engineering students using social psychological theories. PIs: D. Evangelou, M. Ohland. Grant type: NSF IEECI. Award amount: $400,000. Dates: 2009-2012.

PEER-REVIWED PUBLICATIONS

Ngambeki, I. B., Bishop, M., Dai, J., & Nico, P. (under review). A Taxonomy of Misconceptions in Secure Programming.

*Ngambeki, I., Ahluwalia, G. (under review). Creating a Database of Social Engineering Attacks

*, S., Ngambeki, I., (under review). Examining Predispositions Towards Online Fraud Motivation and Rationalization.

Ngambeki, I., Raja-Arul, L., Taylor, C. (under review). Examining the Effect of Online Personas on Social Engineering Susceptibility.

Raja-Arul, L., Ngambeki, I. (under review). Understanding the Impacts of Privacy Perceptions on Susceptibility to Social Engineering Attacks

Bosman, L., Ngambeki, I. (under review). Big Data Ethics and its Role in the Innovation and Technology Adoption Process

Ngambeki, I. B., Bishop, M., Dai, J., & Nico, P. (2023). Validation of a Secure Programming Concept Inventory. *ACM Special Interest Group on Computer Science Education (SIGCSE),* Toronto, ON Canada, March 15-18.

Ngambeki, I. B., Bishop, M., Dai, J., & Nico, P. (2022). An Intelligent Tutoring System for Secure Programming. *Proceedings of the 23rd Annual World Conference on Information Security Education.*

Bishop, M., Ngambeki, I., Mian, S., Dai, J., Nico, P. (2021). Measuring Self-Efficacy in Secure Programming. *Proceedings of the 22nd Annual World Conference on Information Security Education.*

*Ngambeki, I., Spafford, E., Ansari, S., Alhassan, I., Basil-Camino, M., Rapp, D. (2021). Curriculum Guidance Document. Industrial Control Systems. *A Report for the Department of Homeland*

Security: Cybersecurity and Infrastructure Security Agency.
Ngambeki, I., Ahluwalia, A., Ansari, S., Li, M., Raja-Arul, L. (2021). Developing a Social Engineering Course. In *IEEE Frontiers in Education*. IEEE Education Society.
Ngambeki, I., Spafford, E., Ansari, S., Alhassan, I., Basil-Camino, M., Rapp, D. (2021). Creating a Concept Map for ICS Security: A Delphi Study. In *IEEE Frontiers in Education*. IEEE Education Society.
Ngambeki, I., McBride, S., Slay, J. (2021). Knowledge Gaps in Curricular Guidance for ICS Security. *Proceeding of the 25th Colloquium for Information System Security Education*.
Yuskel, T., Walsh, Y., Magana, A. J., Ngambeki, I., Nova, N., Krs, V., Berger, E., Benes, B. (2019). Cyber-physical Experiments: Exploring the Effects of Visual and Tactile Feedback on Student's Learning of Friction Concepts. *Computers and Education*.
Madamanchi, A., Ngambeki, I., Ely, D., Magana, A. (2019). A qualitative study of integrated computing experiences and career development in community college engineering students. In *IEEE Frontiers in Education*. IEEE Education Society.
Bishop, M., Dark, M., Futcher, L., Ngambeki, I., Bose, S., Stuart, L., Zhu, M. (2019). Learning Principles and the Secure Programming Clinic. *Proceedings of the 20th Annual World Conference on Information Security Education,* Hong Kong, November 26-30, 2019.
Dark, M. J., Ngambeki, I., and Depew, D. (2014). Social engagement by the engineer. In E. Coyle & M. Dark (Eds.), *Global energy policy: Equipping graduates for grand challenges in sustainable energy*.
Walsh, Y., Magana, A. J., Benes, B., Ngambeki, I. B., & Berger, E. (2018). Visuo-haptic Simulations for Promoting the Interplay between Graphical Representations and Conceptual Understanding of Structural Analysis. In *IEEE Frontiers in Education*. US: IEEE Education Society.
Ngambeki, I. B., Bishop, M., Nico, P., & Dai, J. (2018). Concept Inventories in Cybersecurity Education: An Example from Secure Programming. In *IEEE Frontiers in Education*. IEEE Education Society.
Bishop, M., Dai, J., Dark, M., Ngambeki, I., Nico, P. & Zhu, M. (2017). Evaluating Secure Programming Knowledge. *Proceedings of the 10th Annual World Conference on Information Security Education,* Rome, Italy, May 29-31, 2017.
Walsh, Y., Magana, A., Yuskel, T, Krs, V. Benes, B., Ngambeki, I, & Berger, E. (2017). Identifying Affordances of Physical Manipulatives Tools for the Design of Visuo-haptic Simulations. *American Society for Engineering Education Annual Conference Proceedings,* Columbus, OH, June 25- 28.
Dark, M., Ngambeki, I., Bishop, M. & Belcher, S. (2016). Effect of the Secure Programming Clinic on Learner's Secure Programming Practices. *Proceeding of the 20th Colloquium for Information System Security Education,* Philadelphia, PA.
Ngambeki, I., Dark, M., Bishop, M. & Belcher, S. (2015). Teach the Hands, Train the Mind. A Secure Programming Clinic. *Proceeding of the 19th Colloquium for Information System Security Education,* Las Vegas, NV.
Dark, M., Belcher, S., Ngambeki, I. and Bishop, M. (2015). Practice, Practice, Practice….Secure Programmer. *Proceeding of the 19th Colloquium for Information System Security Education,* Las Vegas, NV.
Chong, R., Depew, D., Ngambeki, I., and Dark, M. J. (2014). The efficacy of case studies for teaching policy in engineering and technology courses. *American Society for Engineering Education Annual Conference Proceedings,* Indianapolis, IN, June 15- 18.
Woodcock, A., Graziano, W.G., Branch, S.E., Habashi, M., Ngambeki, I., & Evangelou, D. (2013). Person and Thing Orientations: Psychological Correlates and Predictive Utility. *Social Psychological and Personality Science,* 4(1), p. 116-123.

Ngambeki, I., Depew, D., Dark, M. J., and Chong, R. (2013). Approaches to integrating policy into engineering education. *American Society for Engineering Education Annual Conference Proceedings,* Atlanta, GA, June 23- 26.

Chong, R., Depew, D., Ngambeki, I., and Dark, M. J. (2013). Teaching social topics in engineering: The case of energy policy and social goals. *American Society for Engineering Education Annual Conference Proceedings,* Atlanta, GA, June 23- 26.

Thompson, S., Ngambeki, I., Troch, P., Sivapalan, M., and Evangelou, D. (2012). Incorporating student-centred approaches into catchment hydrology teaching: A review and synthesis. *Hydrology and Earth System Sciences*, 16, 3263-3278.

Woodcock, A., Graziano, W.G., Branch, S.E., Ngambeki, I., & Evangelou, D. (2012). Engineering students' beliefs about research: Sex differences, personality and career plans. *Journal of Engineering Education,* 101 (3).

Graziano, W.G., Habashi, M.M, Evangelou, D., & Ngambeki, I. (2012). Orientations and motivations: Are you a "people person," a "thing person," or both? *Motivation and Emotion*, 36(4), p. 465-477.

Ngambeki, I., Habashi, M., Evangelou, D., Graziano, W., Corapci, F., Sakka, D. (2012). Using Profiles of Person-Thing Orientation to Examine the Underrepresentation of Women in Engineering in Three Cultural Contexts. *International Journal of Engineering Education,* 28 (3)*,* p. 1-12.

Pilotte, M., Ngambeki, I., Branch, S., and Evangelou, D. (2012). Examining engineering work and identity across generations in the USA. *European Society for Engineering Education Annual Conference Proceedings,* Thessaloniki Greece, September 23-26.

Coso, A. Louis, R., Ngambeki, I., Sattler, B., and London, J. (2012) Exploring the reasons for collaboration and cooperation among graduate student researchers. *American Society for Engineering Education Annual Conference Proceedings,* San Antonio TX, June 10-13.

Mendoza-Garcia, J., Ngambeki, I., Behbehani, L., Evangelou, D., Rao, S., Cox, M. (2012) Defining the knowledge and skills that enable engineers to participate in public policy. *American Society for Engineering Education Annual Conference Proceedings,* San Antonio TX, June 10-13.

Ngambeki, I., Evangelou, D., Rao, S., Cox, M. (2011). Work in progress: Developing a curriculum to prepare engineers to participate in public policy. *Frontiers in Education Conference,* Rapid City, South Dakota, October 12 - 15.

Ngambeki, I., Evangelou, D., Graziano, W. (2011). Investigating the nature of thing orientation. *Research in Engineering Education Symposium, Madrid,* Spain, October 4-7.

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Ngambeki, I., Evangelou, D., Ohland, M. W., & Ricco, G. (2011). Exploring the motivations for migration among engineering students. *American Society for Engineering Education Annual Conference Proceedings,* Vancouver, Canada, June 26-29.

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Habashi, M., Graziano, W., Evangelou, D., Ngambeki, I. (2009). Teacher Influences on Child Interest in STEM Careers. *Research in Engineering Education Symposium,* Queensland, Australia, July 20-23.

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Riley, D. M., Claris, L. and Ngambeki, I. (2006). Learning/Assessment: A tool for assessing liberative pedagogies in engineering education. *American Society for Engineering Education Annual Conference Proceedings*, Chicago, IL, June 18 - 21.

Riley, D. M., Claris, L., and Ngambeki, I. (2006). The Ethics Blog: Students making connections among ethics, thermodynamics, and life. *American Society for Engineering Education Annual Conference Proceedings*, Chicago, IL, June 18 - 21.

Ngambeki, I., Riley, D., and Rua, A. (2006). Sojourns and Pathways: Personal and professional identity formation and attitudes toward learning among college women. *Frontiers in Education Conference Proceedings,* San Diego, CA, October 28-31.

PRESENTATIONS & INVITED TALKS

Ngambeki, I. (2021, November). The Educational Landscape of ICS in the US. Industrial Cybersecurity Education and Training Workshop: Establishing Standards and Impacting Economic and Workforce Development at Idaho National Labs.

Ngambeki, I., Spafford, E., Ansari, S., Alhassan, I., Basil-Camino, M., Rapp, D. (2021, October). *Industrial Control Systems: An Educational Challenge*. 22nd Annual CERIAS Symposium.

Ngambeki, I. (2021, July). *Understanding the Human Hacker.* CERIAS Security Symposium.

Ngambeki, I. (2021, March). *Human Factors in Cybersecurity*. Ep. # 143 The Social Engineer Podcast.

Ngambeki, I, (2021, January). *CyberSEC Curriculum Development: Aligning with Standards.* Workshop on the Development and Integration of an IT course with elements of Cybersecurity in the Curriculum of Ukrainian Universities.

Ngambeki, I., Hamilton, D., Burley, D., Conklin, A., Andersen, N. (2020, November) *Industrial Cybersecurity Needs and Opportunities: Education and Training Panel Discussion.* Industrial Cybersecurity Education and Training Workshop: Establishing Standards and Impacting Economic and Workforce Development at Idaho National Labs.

Ngambeki, I. B., Graziano, W., Habashi, M., VanArsdall, J., McIntyre, M., Su, R. (2019, April). *Personality, Cognition & Gender Norms: Biases in Orientations to Environments*. Oral Presentation presented at the meeting of the MPA.

Tiwari, P., Ansari, S., Ngambeki, I. B. (2019, October). *Security Failures Resulting from Misconceptions*. Poster presented at the meeting of the AnitaB.org.

Tsygunyuk, T., Choi, S., Ansari, S., Tiwari, P., Ngambeki, I. B. (2019, April). *The Effects of Online Anxiety on Cybersecure Behavior*. Poster presented at the meeting of the Purdue University.

Choi, S., Tsygunyuk, T., Tiwari, P., Ansari, S., Ngambeki, I. B. (2019, April). *The Effects of Online Anxiety on Cyber-Hygiene*. Poster presented at the meeting of the Purdue University, West Lafayette.

Ngambeki, I. B., Bishop, M., Dai, J., Nico, P. (2018, November). *Secure Programming Concept*

Inventory. Poster presented at the meeting of the National Cybersecurity Curriculum Program/National Initiative for Cybersecurity Education.

Ngambeki, I. B., Dark, M. J. (2017, September). *GenCyber Impact: Assessing the Impact of GenCyber Camps*. Oral Presentation presented at the meeting of the GenCyber.

Ngambeki, I. (2016). An Introduction to Social Engineering. *Invited Seminar, Department of Computer and Information Technology, Purdue University. Presentation to TECSUP students,* West Lafayette, IN, October 10, 2016.

Ngambeki, I. & L. Stuart. (2016). Developing a Secure Programming Clinic. *Invited seminar, Department of Computer Science, University of California Sacramento,* Sacramento, CA, March 2, 2016.

Ngambeki, I., Dark, M., Daugherty, J. (2015). Examining the capacity for innovation: An examination of selected units at Purdue University. *Invited seminar, Department of Technology, Leadership and Innovation, Purdue University,* West Lafayette, IN, April 10, 2015.

Ngambeki, I., Dark, M., Daugherty, J. (2015). Examining the capacity for innovation: An examination of selected units at Purdue University. *Invited talk to President Mitch Daniels and the Purdue University Leadership Team*, *Purdue University,* West Lafayette, IN, October 7, 2014.

Ngambeki, I. (2013). Urban agriculture: Sustainable water management. *Invited seminar, Purdue Energy Forum: Sustainable Urban Planning, Purdue University,* West Lafayette, IN, March 30, 2013.

Ngambeki, I. (2012). Exploring the relationship between person thing orientation and technical aptitudes. *Invited seminar, Michigan Technological University, Department of Mechanical Engineering,* Houghton, MI, April 18, 2012.

Ngambeki, I. (2011). Motivation and major choice in engineering. *Invited seminar, Harvard University, School of Applied Sciences and Engineering*, Cambridge, MA, December 1, 2011.

Evangelou, D., Ngambeki, I, Ohland, M., Orr, M. Using Social Psychological Theories to Examine the Migratory Patterns of Engineering Students. *National Science Foundation Engineering Education Awardees Conference,* Reston, VA, February 13-15, 2011.

Ngambeki, I., Evangelou, D., Habashi, M., Graziano, W. Examining Person and Thing Orientation among University Students in the USA. *Gender and Science, Technology, Engineering and Mathematics (STEM) Research Symposium,* West Lafayette, IN, February 19, 2010.

Branch, S. & Ngambeki, I. In their own words: Classifying free expressions of motivation. *Gender and Science, Technology, Engineering and Mathematics (STEM) Research Symposium,* West Lafayette, IN, February 19, 2010.

Ngambeki, I. An Examination of the Factors Affecting Global Virtual Water Flows. *Purdue University Ecological Sciences and Engineering Interdisciplinary Graduate Program Annual Symposium,* West Lafayette, IN, September 25, 2009.

Behbehani, L., Galloza, M., Ngambeki, I., & Park, J. Indicators of Power in the Nile Basin. *Purdue University Ecological Sciences and Engineering Interdisciplinary Graduate Program Annual Symposium,* West Lafayette, IN, September 25, 2009.

Habashi, M, Evangelou, D., Graziano, W., Ngambeki, I. Teacher knows best: Interest as a predictor of children's career plans. *Society for the Study of Motivation, 2nd Annual Conference,* San Francisco, CA, May 25, 2009.

Branch, S. & Ngambeki, I. In their own words: Classifying free expressions of motivation. *Society for the Study of Motivation, 2nd Annual Conference,* San Francisco, CA, May 25, 2009.

Ngambeki, I., Evangelou, D., Habashi, M., Graziano, W. Examining Person and Thing Orientation among University Students in the USA. *Society for the Study of Motivation, 2nd Annual Conference,* San Francisco, CA, May 25, 2009.

Woodcock, A., Ngambeki, I., Evangelou, D., Habashi, M., & Graziano, W. Focus of Interests as Motivation: Men, Women and Engineering, *Society for the Study of Motivation, 1st Annual Conference,* Chicago, IL, May 22, 2008.

Ngambeki, I., Dalrymple, O., and Evangelou, D. Decision-Making in First-Year Engineering: How Students Choose an Engineering Discipline, *Annual Graduate Student Educational Research Symposium,* West Lafayette, IN, March 5, 2008.

Ngambeki, I., Dalrymple, O., and Evangelou, D. Decision-Making in First-Year Engineering: How Students Choose an Engineering Discipline, *Centre for the Integration of Science Education and Research Conference: On Being an Engineer,* Lubbock, TX, February 1-2, 2008.

SELECTED WORKSHOPS

Ngambeki, I. Cyber Outreach Workshop. November 6, 2019. SANS Cyberstart, CSforAll, the Computer Science Teachers Association, the Women in Cybersecurity Organization at Purdue University.

McGregor, R., Ngambeki, I., Pilotte, M., Watson, J., Cox, M. Convincing the non-believers: Selling engineering education experiences on the job market. *American Society for Engineering Education Annual conference, Indianapolis, IN,* June 15-18, 2014.

Ngambeki, I., Coso, A., Herman, G. Completing the cycle: Effectively disseminating and implementing your research. *American Society for Engineering Education Annual Conference, San Antonio, TX,* June 10-13, 2012.

Dalrymple, O., Ngambeki, I., Bagiati, A., Evangelou, D. Artefact Redesign Using Disassemble/Analyze/Assemble (DAA) Activities, *Annual American Society for Engineering Education IN/IL Section Conference,* Terre Haute, IN, April 3-5, 2008.

Riley, D., Claris, L., Ngambeki, I., Rua, A. and Mancha, E. Liberative Pedagogies in Engineering Education, *Liberative Pedagogies Workshop,* Northampton, MA, August 4-7, 2005.

TEACHING EXPERIENCE

Instructor – Information Systems, UMBC (08/23 – 12/23)
Course: Social Engineering

Instructor – Information Systems, UMBC (01/23 – 05/23)
Course: Advanced Research Methods

Instructor – Information Systems, UMBC (08/22 – 12/22)
Course: Management Information Systems

Instructor – Computer and Information Technology, Purdue University (08/17 – 05/22)
Course: Social Engineering

Instructor – Computer and Information Technology, Purdue University (01/17 – 05/22)
Course: Research Methods in Computing

Instructor – Computer and Information Technology, Purdue University (08/16 – 05/22)
Course: Policy, Ethics, Regulation, and Globalization in Information Technology

Co-Instructor – Computer and Information Technology, Purdue University (08/15 – 05/16)
Course: Policy, Regulation, and Globalization in Information Technology

Co-Instructor – Computer and Information Technology, Purdue University (08/15 – 12/15)
Course: Information Assurance Ethics

Co-Instructor - Computer and Information Technology, Purdue University (08/14 - 12/14)
Course: Research in Open Innovation

Co-Instructor - Computer and Information Technology, Purdue University (08/14 - 12/14)
Course: Cyber-learning Research and Development

Co-Instructor – Technology, Leadership, and Innovation, Purdue University (01/14 – 05/14)
Course: Technology and Public Policy

Apprentice Faculty – Technology, Leadership, and Innovation, Purdue University (01/14 – 05/14)
Course: Research in Open Innovation
Co-Instructor – Technology, Leadership, and Innovation, Purdue University (08/13 – 12/13)
Course: Information Assurance Ethics
Guest Lecturer - Ecological Sciences and Engineering, Purdue University (01/12 – 05/12)
Course: Sustainable cities
Guest Lecturer – Civil and Environmental Engineering, Purdue University (01/12 – 05/12)
Course: Water Resources Sustainability
Apprentice Faculty – Engineering Education, Purdue University (01/11 – 05/11)
Course: Content, Assessment and Pedagogy
Apprentice Faculty – Civil and Environmental Engineering, Purdue University (08/10 – 05/11)
Course: Environmental Engineering Sustainability
Instructor – Gifted Engineering Resource Institute, Purdue University (09/09 – 12/09)
Course: Introduction to Environmental Engineering

SERVICE AND PROFESSIONAL ORGANISATIONS

Purdue University
Advisory Committee on Diversity and Inclusion, Member (2020-2021)

Purdue University, Purdue Polytechnic Institute
Education Policy Committee, Member (2016-present)
Inclusion, Diversity, Equity, and Advocacy Steering Group, Member (2020-2021)
Inclusion, Diversity, Equity, and Advocacy Engagement Working Group, Head (2020-2021)
Inclusion, Diversity, Equity, and Advocacy Research Working Group, Head (2020-2021)

Purdue University, Department of Computer and Information Technology
Graduate Education Committee (2016-2019); Education Policy Committee, Chair (2016-present); Faculty Search Committee (2016 – present); ABET Reaccreditation. (2018-2019).

Industrial Control Systems Community of Practice
Steering Committee, Member (2020- present)

American Society for Engineering Education
Minorities in Engineering Division, Secretary (2014-2016); IN/IL Section conference 2010, Poster Session Organizer (2010); President, Purdue Student Chapter (2009 – 2010); Vice President, Purdue Student Chapter (2007 – 2009)

Purdue University Postdoctoral Association
Secretary (2013-2015)

Journal of Engineering Education
Reviewer

Journal of Digital Forensics, Security and Law
Editorial Board Member (2018 – present)

Engineering Studies
Assistant Editor (2012-2018)

Conference Committees
NSF RESET Conference -2021
World Conference on Information Security Education, Lisbon – 2019
Annual Conference on Digital Forensics Security and Law, West Lafayette, Indiana – 2019
American Society for Engineering Education (2006-present)

Graduate Engineering Education Consortium for Students
Vice Chair (2010 - 2012); Organizer, ASEE Workshop (2012); Organizer, Annual Symposium (2012); Peer Mentoring Group Leader (2011-2012)

Purdue University, School of Engineering Education

Student Representative, Graduate Committee (2009 – 2010); Member, Head Search Committee (2009 – 2010); School Senator (2007 – 2009)

Purdue University, Graduate School

Graduate Student Library Advisory Council (2007 - 2010); Academic and Professional Development Committee (2008-2009); Outstanding Faculty Mentor Award Committee (2008)

Purdue University, Ecological Sciences and Engineering Graduate Program

Organizer, Annual Symposium (2008 – 2010)

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

1. Midwestern Psychological Organization, MPA, December 15, 2018 - Present
2. Society for Personality and Social Psychology, SPSP, August 29, 2018 - Present
3. IEEE Computer Society, January 30, 2018 - Present
4. IEEE Education Society, January 30, 2018 - Present
5. Women in Engineering Proactive Network, WEPAN, January 30, 2018 - Present
6. International Federation for Information Processing, IFIP, January 1, 2018 - Present
7. Women in Cybersecurity, WiCyS, January 1, 2018 - Present
8. Collaborative Network for Engineering and Computing Diversity, CoNECD, December 15, 2017 - Present
9. Sigma Xi, 2010 - Present
10. American Society for Engineering Education, ASEE, 2008 - Present

HONOURS AND AWARDS

Purdue CIT Outstanding Faulty in Learning (2020, 2021)
Purdue Seeds for Success Acorn Award (2020)
Bilsland Dissertation Fellowship (2011-2012) - $ 40,000
Outstanding Student Service Award (2010) - $2,000
Women in Engineering Travel Grant (2009) - $750
Ross Fellowship (2007) - $45,000
Coulter Scholarship (2003-2007) - $170,000

Patricia Ordóñez, Ph.D.
Voice: (410) 455-8843 Email: patti.ordonez@umbc.edu

Website: http://ccom.uprrp.edu/~pordonez Google Scholar: https://bit.ly/pattipublications

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Updated May 31, 2024

RESEARCH INTERESTS and SUMMARY

Artificial intelligence and visualization in medicine to develop clinical decision support systems using machine learning, data mining, and visual analytics on multivariate, temporal medical data to personalize medicine and improve diagnosis and treatment; human-computer interaction and cybersecurity to develop novel interfaces in medicine and in assistive technologies that ensure the privacy of its users; health informatics to reduce health disparities around the world; and computer science education research in public schools to democratize access to computer science learning and increase the diversity of the population of computing professionals. I specialize in bringing people from different disciplines, nations, and ethnicities together to tackle equity in health and computer science education. First Hispanic woman to receive a Ph.D. in the Department of Computer Science and the College of Information Technology and Engineering at the University of Maryland Baltimore County. The first woman to be promoted to Associate Professor and receive tenure in the Department of Computer Science of the University of Puerto Rico Río Piedras. I am passionate about creating a more diverse, equitable, and inclusive culture in computing and bridging the computer and data science divide that exists in K-16 and higher education.

EDUCATION

Ph.D. in Computer Science May 2012

University of Maryland, Baltimore County

Dissertation Title: Multivariate Time-Series Analysis of Physiological and Clinical Data Advisor and Chair: Dr. Tim Oates Co-Chair: Dr. Marie desJardins

Committee Members: Drs. Anupam Joshi, Jim Fackler, and Christoph U. Lehmann

MS in Computer Science August 2010

University of Maryland, Baltimore County

Thesis Title: An Animated Multivariate Visualization for Physiological and Clinical Data in the ICU Advisor: Dr. Marie desJardins

BA in Hispanic and Italian Studies June 1989

Johns Hopkins University

AWARDS

Recipient of the 2021 AccessComputing Building Capacity Award, https://www.washington.edu/accesscomputing/capacity-building-award.

Recipient of the 2021 HENAAC Award in Education, https://greatmindsinstem.org/2021-henaac-award-winners/.

Group awarded second place in the Best Demo category at 17th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS) 2015, https://assets15.sigaccess.org/acceptedPosters/97.html.

Group awarded second place at Health and Wellness Innovation Event 2012 at MIT for the development of electronic diabetes logbook, https://diabeteslogbook.wordpress.com/.

Recipient of UMBC Dissertation Fellowship in spring 2011.

Honorable Mention and Alternate for Ford Foundation Dissertation Fellowship in 2010.

Recipient of Jessica Soto Pérez Award in 2009 given by Graduate Student Association, https://gsa.umbc.edu/gsa-awards/. Nominated for the Student Best Paper Competition in AMIA 2008 Annual Symposium.

Recipient of Graduate Research Fellowship from National Science Foundation in 2007.

Honorable Mention List for Ford Foundation Diversity Pre-Doctoral Fellowships Program in 2007. Recipient of Xerox Technical Minority Scholarship for 2007-2008.

Recipient of Scholarship from the Hispanic Scholarship Fund in 2005-2006.

First prize in Mathematics, Physical Sciences, and Engineering category for poster presentations at the PROMISE Research Symposium, January 2006.

Recipient of Scholarship from Verizon Fellowship Program in 2005-2006.

Named High School Field Hockey Coach of the Year in Howard County in 1994 by the Baltimore Sun. https://www.baltimoresun.com/news/bs-xpm-1994-11-22-1994326165-story.html

HIGH PROFILE INTERVIEWS

Featured in the IEEE Computer Society Excellence in STEM series, October2022: https://www.computer.org/publications/tech-news/build-your-career/excellence-in-stem-patricia-ordonez-franco.

Featured in People of the ACM profile, July 2021: article https://www.acm.org/articles/people-of-acm/2021/patricia-ordonez, and video https://www.acm.org/articles/people-of-acm/2021/patricia-ordonez.

Featured in the National Geographic video series, I CAN SCIENCE, created by UC Davis researcher, Dr. Rebecca Calisi Rodríguez, 2021: https://www.nationalgeographic.org/video/i-can-science-patricia-patti-ordonez/.

Featured in CMD-IT Newsletter, *An Interview with Patricia Ordóñez, Tapia 2020 Deputy Program Chair* by Jerri Barrett, February 2020: http://www.cmd-it.org/news/archives/2020/02/20/an-interview-with-patricia-ordonez-tapia-2020-deputy- program-chair/.

Featured in New York Times article *The Secret History of Women in Computing* by Clive Thompson, February 2019: https://www.nytimes.com/2019/02/13/magazine/women-coding-computer-programming.html.

Featured in an article for Ciencia PR, Propelling Computer Science by Reyna Martinez de Luna, October 2016: https://www.cienciapr.org/en/monthly-story/patricia-ordonez-propelling-computer-science-health-industry-and-equity.

Featured in NPR interview by Steve Henn, *Episode 576: When Women Stopped Coding,* October 2014 and July 2016: https://one.npr.org/?sharedMediaId=487069271:487082443.

EMPLOYMENT HISTORY

2022-present **Associate Professor**

University of Maryland, Baltimore County, Department of Information Systems

Tenured faculty position teaching IS undergraduate and graduate students and developing research to reduce health disparities in hospitals and promote community-driven data science education in marginalized communities to increase social mobility with a focus on equity-enabling research, teaching and service.

2023-2026 **Affiliated Associate Professor**

University of Maryland, Baltimore County, Department of Computer Science

Tenured faculty position which permits me to mentor students from the Department of Computer Science.

2016-2022 **Associate Professor**

University of Puerto Rico Río Piedras, Department of Computer Science

Tenured faculty position teaching undergraduate students and mentoring undergraduate and graduate students in research to develop a lab that is focused on applying machine learning, data mining, and data visualization to big time-series data to improve medicine. Working on voice-controlled Electronic Health Records, visualizations for EHRs, and analysis of bee activity and ICU vital sign time series data considering Circadian Rhythms. Actively developing an interdisciplinary undergraduate data science program in the university and K-12 computer science education curriculum in the public high schools of Puerto Rico.

9-11/2017 **Instructor/Interpreter/Consultant**

AnnieCannons Inc.

Served as substitute instructor and interpreter in the AnnieCannons Bootcamp for survivors of human trafficking and domestic abuse and as a consultant in the development of curriculum and teaching practices.

7-8/2017 **Visiting Faculty**

Facebook

Visiting Faculty in Data Analytics team. Experienced a summer internship to develop a curriculum in data science and better prepare our students for summer data science internships in Silicon Valley.

2012 – 2016 **Assistant Professor**

University of Puerto Rico Río Piedras, Department of Computer Science

Tenure-track faculty position teaching undergraduate students and mentoring undergraduate and graduate students in research to develop a lab that is focused on applying machine learning, data mining, and data visualization to big time-series data to improve medicine. Worked on developing a spoken programming language for people with limited mobility in their hands. Determined to create a strategic plan for incorporating a high-caliber computer science education curriculum in the high schools of Puerto Rico.

6-7/2015 **Visiting Researcher**

Massachusetts Institute of Technology

Developed a secure interface to the high-frequency streaming monitor data from a local hospital using Rabbit MQ while working at the Laboratory of Computational Physiology.

2013 **Leader of Biomedical Informatics Function**

Puerto Rico Clinical and Translational Research Consortium

Helped to develop the infrastructure for medical researchers to take advantage of and incorporate biomedical informatics into their research in a multi-campus consortium consisting of the University of Puerto Rico Medical Sciences Campus, Universidad Caribe Central, and the Ponce School of Medicine.

2005-2012 **Technical Trainer and Curriculum Development Specialist**

UMBC Training Centers

Repeatedly taught two introductory Java courses, which prepared students for Sun's Java Programmers Certification Exam for the Java 2 Platform 1.4 over eight weeks: a week-long introduction to programming course in different programming languages (ANSI C, Java, and Python) over the first six years. Summer of 2012 developed a format for online courses for the cyber security curriculum and taught an Introduction to Linux course and an Introduction to Perl course.

8-12/2011 **Teaching Assistant**

University of Maryland, Baltimore County

Taught and developed labs for the course CMSC 202, "Computer Science II for Majors," required for all computer science majors. Held office hours and graded exams. The course used Java for programming.

1-6/2011 **UMBC Dissertation Fellow**

University of Maryland, Baltimore County

Worked on the development and evaluation of my dissertation research. Led ta eam of three underrepresented undergraduates using funds I raised from the Collaborative Research for Undergraduates Program (CREU) grant. See **Funded Proposals**.

8-12/2010 **Instructor**

University of Maryland, Baltimore County

Taught CMSC 201, "Computer Science I for Majors," an undergraduate course required by computer science majors. Assisted in the development of the curriculum for this course in a special topics course in spring 2009. The course used Python for programming.

2007-2010 **NSF Graduate Research Fellow**

University of Maryland, Baltimore County

Developed multivariate time series representations of clinical and physiological data to improve medical diagnosis of patients in critical care using visualization and machine learning techniques. Worked in collaboration with dissertation committee members, Drs. Jim Fackler and Christoph U. Lehmann at the Johns Hopkins University School of Medicine.

8-12/2009 **Instructor**

University of Maryland, Baltimore County

Taught CMSC 104 "Problem Solving and Computer Programming," an undergraduate elective for non-programmers. The course used JavaScript and HTML for programming.

6-8/2009 **Visiting Student Researcher**

Massachusetts Institute of Technology

Developed two new visualizations for multivariate clinical and physiological data under the guidance of Dr. Roger Mark of the Laboratory of Computational Physiology.

6-6/2009 **Resident Assistant**

MIT Summer Research Program (MSRP) of the Office of the Dean for Graduate Education

Served as the liaison between the directors of MSRP and the head of the dorm where undergraduates in the program resided. The program's mission is to promote the value of graduate education, improve the research enterprise through increased diversity and recruit the best and brightest for graduate education at MIT.

8-12/2007 **Instructor**

University of Maryland, Baltimore County

Taught CMSC 341 "Data Structures," an undergraduate course required for computer science majors. Converted course from C++ to Java and taught the first course in Java.

2005-8/2007 **Graduate Assistant**

University of Maryland, Baltimore County

Assisted in the conversion of two core courses of the Computer Science curriculum from C++ to Java - CMSC 202 "Computer Science II" and "CMSC 341 Data Structures". Prepared marketing materials for prospective and incoming graduate students for all the departments in CSEE – Computer Science, Electrical Engineering, and Computer Engineering.

2006-2007 **Research Assistant**

University of Maryland, Baltimore County

CAST (Context-Aware Surgical Training): An environment where pervasive technologies, agent technologies, Semantic Web ontologies, logic reasoning, security and privacy policies, and RFID (radio frequency identifier) technology are being developed to extend the capabilities of the MASTRI Center, a surgical training facility located at the University of Maryland Medical School under the guidance of Dr. Anupam Joshi and Dr. Tim Finin.

Traumapod: A DARPA-funded project to build an unmanned vessel that will provide lifesaving medical care by medic at a remote location to soldiers wounded on the battlefield while they are being transported to the hospital. Responsible for the Resource Monitoring System that uses pervasive computing to record medically significant events such as the administering of anesthesia under the guidance of Dr. Anupam Joshi and Dr. Tim Finin. The project ended on March 29, 2007.

5-8/2006 **Summer Research Intern**

IBM Almaden Research Center

Created two interactive visualizations, a graph, and a tree view, for the IBM Chemical Search Engine using Prefuse, an interactive visualization toolkit. Also, developed the experiments and wrote about results and visualizations for a published paper on the search engine under the guidance of Mentor James Rhodes. *Co-author on paper.*

1-5/2006 **Teaching Assistant**

University of Maryland, Baltimore County

Taught labs for the undergraduate course, CMSC 202 "Computer Science II for Majors" required for computer science majors, held office hours, and graded exams. The course used C++ for programming.

8-12/2005 **Instructor**

University of Maryland, Baltimore County

Taught CMSC 104 "Problem Solving and Computer Programming," an undergraduate elective for non-programmers. The course used Perl and C for programming.

2000-2005 **Technical Trainer**

/training/etc Inc.

Taught intensive weeklong courses in Java, Swing, Perl, C, C++, Linux, and Web Application Programming. Taught 1-3 day classes in HTML, XML, JavaScript, WSAD, CGI using Perl, Dreamweaver, Oracle SQL, and Oracle PL/SQL. Created and maintained a FileMaker database to manage classes for the company.

1996-2000 **Technical Support and System Trainer**

CAM Software & Support

Provided over 6700 man-hours of training and 170 successful installations of property management software. Responsible for updating and editing the 900-page Reference Manual for the software. Developed the company's first national training seminar to introduce the latest version of the software to clients. Responsible for everything from developing the marketing materials and creating the curriculum to teaching the seminars and setting up the classrooms.

1991-1996 **High School Teacher and Coach**

Glenelg Country School

Taught Geometry, Algebra II, Pre-Calculus, Spanish III, and AP Spanish Language. Coached Varsity field hockey at a small private high school in Glenelg, Maryland.

1989-1991 **High School Teacher and Coach**

George School

Taught Geometry, Algebra II, Pre-Calculus, and Spanish II and II. Coached field hockey and lacrosse and served as a dorm parent at a large private boarding school in Newtown, Pennsylvania.

TEACHING EXPERIENCE

University of Maryland, Baltimore County

Spring 2024 Associate Professor, IS 698, "Temporal Data Mining and its Applications" (graduate elective course) Fall 2023 Associate Professor, IS 620, "Advanced Database Projects" (graduate required course)

Spring 2023 Associate Professor, IS 733, "Data Mining" (graduate required course)

Fall 2022 Associate Professor, IS 147, "Introduction to Computer Programming." (undergraduate required course)

University of Puerto Rico Río Piedras

Spring 2022 Associate Professor, CCOM 4029, "High-Level Programming Lang." (undergraduate required course) Spring 2022 Associate Professor, CCOM 3982, "Seminar in Computer Science" (undergraduate required course) Fall 2021 Associate Professor, CCOM 3031, "Introduction to Data Science" (undergraduate elective course)

Fall 2021 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2021 Associate Professor, CCOM 4029, "High-Level Programming Lang." (undergraduate required course) Fall 2020 Associate Professor CCOM 3031, "Introduction to Data Science" (undergraduate elective course)

Fall 2020 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2020 Associate Professor, CCOM 4029, "High-Level Programming Lang." (undergraduate required course) Spring 2020 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Fall 2019 Associate Professor, CCOM 3031, "Introduction to Data Science" (undergraduate elective course)

Fall 2019 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2019 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2019 Associate Professor, CCOM 4995, "Introduction to Data Science" (undergraduate elective)

Fall 2018 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2018 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2018 Associate Professor, CCOM 4995, "Biomedical Big Data I" (undergraduate elective)

Spring 2017 Associate Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Fall 2016 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Fall 2016 Assistant Professor, CCOM 4995, "Biomedical Big Data I" (undergraduate elective)

Spring 2016 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2016 Assistant Professor, "Integrating Computational Thinking into the High Schools of Puerto Rico" CEA Fall 2015 Assistant Professor, CCOM 4995, "Biomedical Big Data I" (undergraduate elective)

Fall 2015 Assistant Professor, CCOM 4030, "Software Engineering" (undergraduate required course)

Spring 2015 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2015 Assistant Professor, CCOM 3034, "Data Structures" (undergraduate required course)

Spring 2015 Assistant Professor, "Integrating Computational Thinking into the High Schools of Puerto Rico" CEA Fall 2014 Assistant Professor, CCOM 3034, "Data Structures" (undergraduate required course)

Fall 2014 Assistant Professor, CCOM 3981, "Seminar in Computer Science" (undergraduate required course) Spring 2014 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2014 Assistant Professor, CCOM 3034, "Data Structures" (undergraduate required course)

Fall 2013 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) Spring 2013 Assistant Professor, CCOM 4027, "Introduction to Data Management" (undergraduate required course) Fall 2012 Assistant Professor, CCOM 3030, "Introduction to Computer Science" (undergraduate required course) *University of Maryland, Baltimore County*

Fall 2011 Teaching Assistant, CMSC 202, "Computer Science II for Majors" (undergraduate required course) Fall 2010 Instructor, CMSC 201, "Computer Science I for Majors" (undergraduate required course)

Fall 2009 Instructor, CMSC 104, "Problem Solving and Computer Programming" (undergraduate elective) Fall 2007 Instructor, CMSC 341, "Data Structures" (undergraduate required class)

Spring 2006 Teaching Assistant, CMSC 202, "Computer Science II for Majors" (undergraduate required course) Fall 2005 Instructor, CMSC 104, "Problem Solving and Computer Programming" (undergraduate elective) 1991-1996 High school math and Spanish teacher and Varsity field hockey coach, *Glenelg Country School*

1989-1991 High school math and Spanish teacher, field hockey and lacrosse coach, and dorm teacher, *George School*

CURRENT LEADERSHIP & MENTORING ACTIVITIES

Member, University of Maryland Graduate School, Baltimore (UMGSB) Council, April 2024 – present. Founding Faculty Advisor, STARS Computing Corp, UMBC Chapter, October 2022 – present.

Advisory Board Member, LatinX Digital Leaders Now, July 2021 – present.

Member, Expanding Computing Education Pathways Maryland Cohort, September 2022 – present. UMBC Representative, AccessComputing, Partner Institution, September 2022 – present.

Member, CS4All, September 2016 – present.

Member, Board of Directors, Code Explorers (http://codeexplorers.org), March 2015 – present.

PAST LEADERSHIP & MENTORING ACTIVITIES

International Advisory Council, World Computer Exchange – Puerto Rico, Spring 2015 – Fall 2023. Co-Chair AAAI Undergraduate Consortium, August 2022- February 2024

College of Natural Sciences Representative, Association of Puerto Rican University Professors, March 2022-July 2022. Women in Data Science Ambassador, Puerto Rico (https://www.widspuertorico.org), April 2020 – July 2022.

Co-Lead, Expanding Computing Education Pathways Puerto Rico Cohort, spring 2015 – July 2022. UPRRP Representative, NCWIT, Partner Institution, fall 2016 – July 2022.

Co-Founder, CS4All Puerto Rico (http://cs4allpr.org), summer 2016 – July 2022.

Co-Lead, Puerto Rico Partnering Institutions, Center for Brains, Minds, Machinery, MIT, winter 2013 – July 2022. Advisor, Computer Science Teachers' Association, spring 2016 – July 2022.

Co-Chair, Diversity, Equity, and Inclusion Council of the ACM, July 2021 – January 2022.

Program Chair, CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing 2021, October 2020 – January 2022. Co-Program Chair, Inaugural NSF HSI Strategic Innovation Summit for Advanced Research and Instruction in Artificial Intelligence and Quantum Sciences Part I (HSI-SIS), UC Davis, virtual, June 21, 2021.

Inaugural Member, ACM-W North America Executive Committee, July 2019 – June 2021.

Deputy Program Chair, ACM Richard Tapia Celebration of Diversity in Computing 2020, May 2020 – September 2020. Coordinator, Connecting Pathways Outreach Trip, Jayuya, PR, January 19, 2019.

Coordinator, Connecting Pathways Outreach Trip, Jayuya, PR, November 18, 2018. Coordinator, Thinking like a Designer Workshop, San Juan, PR, August 13-16, 2018.

Co-Founder and Co-leader, CS4All Puerto Rico Symposium, San Juan, PR, January 23, 2018. Mentor Chair, Meshing with Data Hackathon, Bayamón, PR, June 29, 2018- July 1, 2018.

Founding Co-Advisor, TechniCoop, first UPRRP and UHS student cooperative for technical services, 2016 – 2017.

Organizing Chair, Healthcare Innovation Replicathon, 36-hour hackathon to replicate experiments in Data Science academic papers, San Juan, PR, March 24-25, 2017. https://idi-bd2k.hpcf.upr.edu/2017/03/29/healthcare-innovation-replicathon-2017- and-data-carpentry-instructor-training/

Co-Founder and Co-leader, CS4All Puerto Rico Symposium, San Juan, PR, September 22, 2016.

Co-leader, Health Mini-Hackathon, 2016 HIT (Health Informatics Tools) Workshop, Medellín, Colombia, July 27-28, 2016. Leader, Educational Nano-Hackathon, Inaugural Project Kaleidoscope Meeting in Puerto Rico, Humacao, January 28-29, 2016.

Founder and Chair, Organizing Committee of the Symposium of Health Informatics for Latin America and the Caribbean (SHILAC 2015), San Juan, PR, November 20-22, 2015. http://shilac.org

Founder, Biomedical Data Science Workshop (BDSW cra.org/cra-w/biomedical-data-science-workshop-shilac-2015), San Juan, PR, November 20-22, 2015.

Founder and Chair, Hacking Health in the Caribbean hackathon as part of SHILAC 2015, November 20-22, 2015.

Founder and Chair, Organizing Committee, Symposium of Health Informatics for Latin America and the Caribbean (SHILAC 2013), Cancun, MX, August 14, 2013.

Moderator, "TED-styled talks by PROMISE alumni: Research on Healthcare," Summer Success Institute, Baltimore, MD, August 17, 2013.

Peer Mentor, PROMISE, Maryland's AGEP (Alliance for Graduate Education and the Professoriate), fall 2007 – spring 2012. Invited Speaker in a 3-day seminar at Pontificia Javeriana University in Bogotá, Colombia, and its affiliated hospital to analyze how information technology could improve daily health and clinical practices within the scope of the current state of biomedical informatics in Colombia, March 2-4, 2011. (See Invited Presentations)

Program Committee Member, IEEE Vis Week Workshop on Visual Analytics in Health Care, Salt Lake City, Utah, October 24, 2010.

Graduate Student Representative, UMBC President's Commission on Women, fall 2008 - spring 2010. President, WISE Grads, the Women in Science and Engineering Graduate Association, 2008 - 2010.

Vice President, WISE Grads, the Women in Science and Engineering Graduate Association, 2007 - 2008. Treasurer, WISE Grads, the Women in Science and Engineering Graduate Association, 2006 - 2007.

Creator of peer mentoring program for new graduate students in CSEE department, fall 2006 & 2007.

Creator and Coordinator of Graduate Student Panel and Lab Tours for new graduate students to CSEE department during orientation, August 2006 & 2007.

THESIS & DISSERTATION COMMITTEES & SCIENCE PROJECTS

Member of doctoral dissertation committee, Kelvin Echenim, UMBC. Member of doctoral dissertation committee, Tolulope Ale, UMBC.

Member of the doctoral dissertation committee, Sadia Norwin, Michigan Technical University.

Doctoral Dissertation Juror, Maritza Fernanda Mera, "Selection of Relevant Features to Support Automatic Detection of Epileptiform Events", Universidad del Cauca, October 19, 2021.

Mentor of master's thesis, Sofía Meléndez Cartagena, "Inter-individual Variation in Circadian Rhythm Across Species of Halictid Bees: Characterizing Varying Clocks and Motif Classification," Universidad de Puerto Rico Río Piedras, May 26, 2021.

Mentor of bachelor's thesis, Juanita Rosario, "El Proceso Creativo como método de innovación en los hospitales pediátricos," Universidad del Turabo, San Juan, PR, March 2017.

President of dissertation committee, Luis Alberto García Nevares, "Localización e internacionalización de software: puntos de encuentro entre el localizador y el programador," Universidad de Salamanca, Salamanca, Spain, November 4, 2016.

Advisor of bachelor's thesis, Orlando Rivera, "Analysis of Time Series of Different Lengths," University of Puerto Rico Río Piedras, San Juan, PR, September 2015.

Mentor of High School Science Project, Natalia Pacheco, and Andrea Claudio, "Development of an Open-Source Speech- driven Programming Platform," The Intel International Science and Engineering Fair, University of Puerto Rico High School, San Juan, PR, October 2016. Tied for first place in Puerto Rico.

PEER-REVIEWED PUBLICATIONS

Patricia Ordóñez, María López Delgado, "Mothers Can Be Computing Leaders, Too: Why Mothers Should Lead the Culturally Responsive Computing Education Movement", LACCEI 2024, to appear July 2024.

Jason J. Williams, Rochelle E. Tractenberg, Bérénice Batut, Erin A. Becker, Anne M. Brown, Melissa L. Burke, Ben Busby, Nisha K. Cooch, Allissa A. Dillman, Samuel S. Donovan, Maria A. Doyle, Celia W. G. van Gelder, Christina R. Hall7,17, Kate

L. Hertweck, Kari L. Jordan, John R. Jungck, Ainsley R. Latour, Jessica M. Lindvall, Marta Lloret-Llinares, Gary S. McDowell, Rana Morris, Teresa Mourad, Amy Nisselle, Patricia Ordóñez, Lisanna Paladin, Patricia M. Palagi, Mahadeo A. Sukhai, Tracy

K. Teal, Louise Woodley. "An international consensus on effective, inclusive, and career-spanning short format training in the life sciences and beyond." PLoS ONE 18(11): e0293879, 2023. https://doi.org/10.1371/journal.pone.0293879

Jimmy Phuong, Patricia Ordóñez, Jerry Cao, Mira Moukheiber, Lama Moukheiber, Anat Caspi, Bonnielin K. Swenor, David Kojo N. Naawu, Jennifer Mankoff. "Telehealth and digital health innovations: A mixed landscape of access," PLOS Digit Health 2(12): e0000401, 2023. https:/doi.org/10.1371/journal.pdig.0000401

Joseph Carroll-Miranda, Michelle Borrero, Milagros Bravo, Patricia Ordoñez, Edusmildo Orozco, Luis Lopez and Agustin Corchado, “We made this road by walking: Experiences from a LatinX Research Practice Partnership,” In Proceedings of 2023

Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT), Atlanta, GA, June 29, 2023.

Jelissa Reynoso-García, Ariel Leonardo Fernández, Patricia Ordoñez, and Cleva Villanueva, “Enseñanzas de la pandemia. Utilidad de datathones y bases de datos abiertas en el análisis de COVID-19,”In Proceedings of 21st LACCEI International Multi-Conference for Engineering, Education, and Technology: “Leadership in Education and Innovation in Engineering in the Framework of Global Transformations: Integration and Alliances for Integral Development”, Hybrid Event, Buenos Aires

- ARGENTINA, July 17 - 21, 2023. https://laccei.org/LACCEI2023-BuenosAires/meta/FP438.html

Riley A. Hess, Olivia A. Erickson, Rebecca B. Cole, Jared M. Isaacs, Silvia Alvarez-Clare, Jonathan Arnold, Allison Augustus- Wallace, Joseph C. Ayoob, Alan Berkowitz, Janet Branchaw, Kevin R. Burgio, Charles H. Cannon, Ruben Michael Ceballos,

C. Sarah Cohen, Hilary Coller, Jane Disney, Van A. Doze, Margaret J. Eggers, Edwin L. Ferguson, Jeffrey J. Gray, Jean T. Greenberg, Alexander Hoffmann, Danielle Jensen-Ryan, Robert M. Kao, Alex C. Keene, Johanna E. Kowalko, Steven A. Lopez, Camille Mathis, Mona Minkara, Courtney J. Murren, Mary Jo Ondrechen, Patricia Ordoñez, Anne Osano, Elizabeth Padilla-Crespo, Soubantika Palchoudhury, Hong Qin, Juan Ramírez-Lugo, Jennifer Reithel, Colin A. Shaw, Amber Smith, Rosemary J. Smith, Fern Tsien, and Erin L. Dolan, “Virtually the Same? Evaluating the Effectiveness of Remote Undergraduate Research Experiences.” LSE CBE Life Sciences Education, American Society of Cell Biology, 22(2), published on line 14 Apr 2023. https://doi.org/10.1187/cbe.22-01-0001

Olivia A. Erickson, Rebecca B. Cole, Jared M. Isaacs, Silvia Alvarez-Clare, Jonathan Arnold, Allison Augustus-Wallace, Joseph C. Ayoob, Alan Berkowitz, Janet Branchaw, Kevin R. Burgio, Charles H. Cannon, Ruben Michael Ceballos, C. Sarah Cohen, Hilary Coller Jane Disney, Van A. Doze, Margaret J. Eggers, Stacy Farina, Edwin L. Ferguson, Jeffrey J. Gray, Jean

T. Greenberg, Alexander Hoffmann, Danielle Jensen-Ryan, Robert M. Kao, Alex C. Keene, Johanna E. Kowalko, Steven A. Lopez, Camille Mathis, Mona Minkara, Courtney J. Murren, Mary Jo Ondrechen, Patricia Ordoñez, Anne Osano, Elizabeth Padilla-Crespo, Soubantika Palchoudhury, Hong Qin, Juan Ramírez-Lugo, Jennifer Reithel, Colin A. Shaw, Amber Smith, Rosemary Smith, Adam P. Summers, Fern Tsien, and Erin L. Dolan, “ ‘How Do We Do This at a Distance?!’ A Descriptive Study of Remote Undergraduate Research Programs during COVID-19.” LSE CBE Life Sciences Education, American Society of Cell Biology , 21:ar1, 1–16, published online 3 Jan 2022. https://doi.org/10.1187/cbe.21-05-0125

Michelle Borrero, Patricia Ordóñez-Franco, Joseph Carroll-Miranda, Agustín Corchado-Vargas, Luis López-Rivera, Milagros Bravo-Vick and Edusmildo Orozco, “Implantación del currículo de ECS en español: Experiencias de una alianza de investigación participativa en educación (AIPE).” In Proceedings of 19th LACCEI International Multi-Conference for Engineering, Education, and Technology: “Prospective and trends in technology and skills for sustainable social development" "Leveraging emerging technologies to construct the future," Virtual Edition, July 21-23, 2021.

Jimmy Phuong, Christina J. Bandaragoda, Shefadi Haldar, Kari A. Stephens, Patricia Ordonez, Sean D. Mooney, Andrea L. Hartzler. “Information needs and priority use cases of population health researchers to improve preparedness for future hurricanes and floods.” Journal of American Medical Informatics Association, 28(2), pp. 249-260, February 15, 2021.

Patricia Ordóñez Franco, María Eglée Pérez Hernández, Humberto Ortiz Zuazaga, José García Arrarás, "Building a Data Science Program through Hackathons and Informal Training in Puerto Rico," *Leveraging Data Science for Global Health,* Switzerland: Springer Nature, https://library.oapen.org/handle/20.500.12657/41290, pp. 453-466, 2020.

Patricia Ordóñez Franco, Juan S. Ramírez, Humberto Ortiz Zuazaga, María Eglée Pérez Hernández, Luis Pericchi, José E. García Arrarás, "Enhancing Undergraduate Education and Curriculum through an Interdisciplinary and Quantitative Initiative to Broaden Participation in Big Data," In Proceedings of the 18th LACCEI International Multi-Conference for Engineering, Education, and Technology: "Engineering, Integration, And Alliances for A Sustainable Development" "Hemispheric Cooperation for Competitiveness and Prosperity on A Knowledge-Based Economy," Virtual Edition, July 29-31, 2020.

Patricia Ordóñez Franco, María Eglée Pérez Hernández, Humberto Ortiz Zuazaga, "Estimulando la innovación en Ciencia de Datos Interdisciplinaria a través de 'Hackathons'," In Proceedings of the 16th LACCEI International Multi-Conference for Engineering, Education, and Technology: "Innovation in Education and Inclusion," Lima, Peru, July 19-21, 2018.

Patricia Ordóñez, Joseph Carroll-Miranda, María López Delgado, Eliud Gerena, Grace Rodríguez. "Incorporating Computational Thinking in the Classrooms of Puerto Rico: How a MOOC served as an outreach and recruitment tool for Computer Science Education," Proceedings of the Special Interest Group in Computer Science Education Annual Conference, Baltimore, MD, February 22, 2018.

Renetta Tull, Autumn Reed, Pamela Felder, Shawnisha Hester, Denise Williams, Yarazeth Medina, Amanda Lo, Erika Aparaka, Patricia Ordonez, "Hashtag #ThinkBigDiversity: Social Media Hacking Activities as Hybridized Mentoring

Mechanisms for Underrepresented Minorities in STEM," Proceedings of the American Society for Engineering Education Annual Conference, Columbus, Ohio, June 27, 2017.

Patricia Ordóñez, Nelson Schwartz, Adnel Figueroa-Jiménez, Leonardo A. García Lebron, Abiel Roche, "Learning Stochastic Finite-State Transducer to Predict Individual Patient Outcomes," Health and Technology, Springer, 2016.

Kavita Krishnaswamy, Patricia Ordóñez, Phillip Beckerle, Stephan Rinderknecht, Torsten Felzer. "OnScreenDualScribe with Point-and-Click Interface: A viable computer interaction alternative based on a virtual modified numerical keypad." Proceedings of ASSETS 2016, Reno, NV, October 2016.

Renetta G. Tull, Patricia Ordóñez, Frances Carter-Johnson, Beatrice Zayas, Angela Byars-Winston, M. Cortes-Rodriguez, "The Jessica Effect: Valuing Cultural and Familial Connections to Broaden Success in Academe," AAC&U Peer Review, Spring 2014.

Patricia Ordóñez, Kavita Krishnaswamy, Renetta G. Tull, Dan Ding, Mary Goldberg, "Assistive technology research as a mechanism to broaden the participation of women, underrepresented minorities, and persons with disabilities," in Proceedings of the Twelfth LACCEI Latin American and Caribbean Conference for Engineering and Technology, 2014.

Patricia Ordóñez, Michael Brennan, Carol Hullin, Juan Carlos Puyana, "Promoting and Showcasing Health Informatics in Latin America and the Caribbean through Interdisciplinary Collaboration," in Proceedings of the Twelfth LACCEI Latin American and Caribbean Conference for Engineering and Technology, 2014.

Frances D. Carter-Johnson, Patricia Ordóñez, Renetta G. Tull, and Miguel Nino. "Examining the Intersection of Graduate Student Funding, Mentoring, and Training as a Mechanism of Success for Peer Mentors and their Mentees." 120th Annual Conference of the American Association of Engineering Education, ASEE 2013, Atlanta, GA, June 2013.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, Christoph U. Lehmann, "Multivariate Methods for Classifying Physiological Data," Workshop on Data Mining Medicine and HealthCare (DMMH 2013) at 2013 SIAM International Conference on Data Mining, Austin, TX, 37-45, December 2013.

Patricia Ordóñez, Tim Oates, Michael Lombardi, Genaro Hernández, Kathryn W. Holmes, Jim Fackler, and Christoph U. Lehmann, "Visualization of Multivariate Time Series Data in a Neonatal ICU," IBM Journal of Research and Development, Special Issue on Technologies for Healthcare Transformation 2012, 56(5), 7:1-12, August 2012.

Frances D. Carter-Johnson, Patricia Ordóñez, and Renetta G. Tull. Peer Mentoring and Graduate Student Funding: An Emerging Professional Development Intervention for Peer Mentors and their Mentees. (Abstract). 5th Annual Conference on Understanding Interventions that Broaden Participation in Research Careers (UI5), Baltimore, May 10-12, 2012.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, "Classification of patients using novel multivariate time series representations of physiological data," in Proceedings of International Conference on Machine Learning and Applications (ICMLA 2011 Special Session in Medicine), Honolulu, HI, 2:172-179, December 2011.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, "Using modified multivariate bag-of-words models to classify physiological data," in Proceedings of the Workshop on Mining Multiple Information Sources (MMIS 2011) in the International Conference on Data Mining Workshops (ICDMW), Vancouver, CA, 534-539, 2011.

Patricia Ordóñez, Marie desJardins, Michael Lombardi, Christoph U. Lehmann, Jim Fackler, "An Animated Multivariate Visualization for Physiological and Clinical Data in the ICU," in Proceedings of First ACM International Health Informatics Symposium (IHI '10), ACM, New York, NY, 771-779, November 2010.

Christoph U. Lehmann, Patricia Ordóñez, Jim Fackler, Kathryn Holmes, "Practical Visualization of Multivariate Time Series Data in a Neonatal ICU," accepted in Visual Analytics in Health Care Workshop (VAHC 2010), Salt Lake City, UT, http://research.ihost.com/vahc2010/program.html, October 2010.

Patricia Ordóñez, Marie desJardins, "Multivariate Time Series Analysis of Clinical and Physiological Data," in Proceedings of Grace Hopper Celebration of Women in Computing 2010, Atlanta, GA, p.31-36, 2010.

Patricia Ordóñez, Marie desJardins, Carolyn Feltes, Christoph U. Lehmann, Jim Fackler, "Visualizing Multivariate Time Series Data to Detect Specific Medical Conditions," in Proceedings of American Medical Informatics Association (AMIA) 2008 Annual Symposium, Washington, DC, 6: 530-534, 2008.

James Rhodes, Stephen Boyer, Jeffrey Kreulen, Ying Chen, Patricia Ordonez, "Mining Patents Using Molecular Similarity Search," in Proceedings of Pacific Symposium on Biocomputing, Honolulu, HI, 12:304-315, 2007.

INVITED JOURNALS, CONFERENCE PUBLICATIONS & WORKSHOP REPORTS

Patricia Ordóñez Franco, María Eglée Pérez Hernández, Humberto Ortiz- Zuazaga , José García Arrarás, "Construyendo un Programa de Ciencia de Datos a través de Hackatones y Capacitación Informal en Puerto Rico," Translation of chapter for book *Leveraging Data Science for Global Health*, Springer, 2024, to appear.

Sofía Meléndez Cartagena, Carlos A. Ortiz-Alvarado, Patricia Ordoñez, Claudia S. Cordero-Martínez, Alexandria F. Ambrose, Luis A Roman Lizasoain, Milexis A Santos Vega, Andrea V Velez Velez, Jenny P. Acevedo-Gonzalez, Jason Gibbs, Theodora Petanidou, Thomas Tscheulin, John T. Barthell, Victor H. González, Tugrul Giray, José L. Agosto-Rivera. "Relationship Between Inter-individual Variation in Circadian Rhythm and Sociality: A case Study Using Halictid Bees." bioRxiv,2021. DOI: https://doi.org/10.1101/2021.09.03.458748

Patricia Ordóñez, "Women in Computing: Breaking the Cycle of Poverty through a Tech Social Enterprise for Women," Day One Project, under review, November 2021.

Renata Rawlings-Goss, Lillian Cassel, Melissa Cragin, Catherine Cramer, Angela Dingle, Shawnta Friday-Stroud, Al Herron, Nicholas Horton, Tasha R. Inniss, Kari Jordan, Patti Ordóñez, Mary Rudis, Robert, Rwebangira, Karl Schmitt, Dale Smith, Sonya Stephens, "Keeping Data Science Broad: Negotiating the Digital and Data Divide Among Higher Education Institutions," Report released by South Big Data Hub Education and Workforce Working Group Workshop to be reported to the National Academies Meeting on Envisioning the Undergraduate Data Science Discipline, Washington, DC, December 6, 2017.

Patricia Ordóñez, Health Informatics, "Finding Solutions Together," CIO Latino Online Journal, February 2016.

Patricia Ordóñez, Palanivel Kodeswaran, Vlad Korolev, Wenjia Li, Onkar Walavalkar, Ben Elgamil, Anupam Joshi, Tim Finin, Yelena Yesha, "A Ubiquitous Context-Aware Environment for Surgical Training," in Proceedings of the First International Conference on Mobile and Ubiquitous Context-Aware Systems and Applications, MUBICA, p. 1-6, 2007.

PEER-REVIEWED SCIENTIFIC ABSTRACTS, POSTERS, PANELS & PRESENTATIONS

Patricia Ordóñez, "Moms can be computing leaders, too!", Proceedings of ACM SIGCSE 2024, Portland, OR, USA, p. 1936, lightening talk, 23 Mar 2024. https://doi.org/10.1145/3626253.3635353

Patricia Ordóñez, "We made this road by walking," In Proceedings of Conference on Research in Equitable and Sustained Participation in Engineering, Computing and Technology, Atlanta, Georgia, presentation, 20 June 2023. https://youtu.be/myJj6Gnf_BY

Patricia Ordóñez, Wanda Díaz Merced, Lucy Jiménez, Carol Hullin, “Community-centered computing education for women from marginalized communities to reduce health and education disparities,” MedInfo 2023, Sydney, Australia, panel, July 9, 2023.

Sofía MelendezCartagena, Carlos A. Ortiz-Alvarado, Patricia Ordonez, Jason Gibbs, Theodora Petanidou, Thomas Tscheulin, John T. Barthell, Victor H. Gonzalez, Tugrul Giray, and José L. Agosto-Rivera. "Relationship Between Inter-individual Variation in Circadian Rhythm and Sociality: A case Study Using Halictid Bees." In Integrative and Comparative Biology, Oxford University press, 62:S210-S211, abstract, 2023.

Sadia Norwin, Patricia Ordóñez, Keith Vertanen, “Exploring Motor-impaired Programmer’s Use of Speech Recognition,” In Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2023), virtual, poster, Oct 23-26, 2022.

Sharin Rawhiya Jacob, Sara Vogel, Rose K Pozos, Patricia Ordóñez Franco, Jean Ryoo, “Leveraging Multilingual Students' Resources for Equitable Computer Science Instruction.” 2021 IEEE Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT), http://respect2021.stcbp.org/2021/05/24/respect-2021-papers/, virtual panel, published online, 24 May 2021.

Dayanlee De León-Cordero, Christopher Ayala-Griffin, Patricia Ordóñez-Franco, “Kavita Project: Voice Programming for People with Motor Disabilities,” Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility, poster, https://assets21.sigaccess.org/accepted_posters.html, virtual poster, October 19-21, 2021.

Christopher Ayala-Griffin, Dayanlee De León-Cordero, Patricia Ordóñez-Franco, “Proyecto Kavita: Programación por voz para personas con discapacidades motoras,” Proceedings of the 19th LACCEI International Multi-Conference for Engineering, Education and Technology “Prospective and trends in technology and skills for sustainable social development,” virtual poster, July 19-23, 2021.

Patricia Ordóñez Franco, “Mutually Beneficial Collaborations to Broaden Participation of Hispanics in Data Science,” Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining, presentation and abstract, pp. 3594–3595, https://doi.org/10.1145/3394486.3411075, virtual, August 2020.

Patricia Ordóñez Franco, Humberto Ortiz Zuazaga, and Juan S. Ramírez, “Broadening Participation in Computing through a Biology Summer Research Experience for Undergraduates” in Proceedings of 2020 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT) conference, online poster and abstract, March 4, 2020.

Patricia Ordóñez, “The Need for Mutually Beneficial Collaborations to Broaden the Participation of Hispanics in Data Science,” in Proceedings of 2020 RESPECT Conference, Lightning Talk, online, March 4, 2020.

Joseph Carroll-Miranda, Patricia Ordóñez, Edusmildo Orozco, Mila Bravo, Michelle Borrero, Luis López, Gerriann Houser, Eliud Gerena, Dale Reed, Brenda Santiago, Agustín Corchado, and Andreska Santana. “This is What Diversity Looks Like: Making ECS Culturally Relevant for Spanish-speaking Puerto Ricans.” In Proceedings of ACM SIGCSE Symposium (SIGCSE 2019), Minneapolis, Minnesota, workshop, March 1, 2019.

Leigh Ann DeLyser, Barbara Ericson, Patricia Ordóñez, Loretta Cheeks, “It's Never Too Late, Brianna Morrison,” 2018 Grace Hopper Celebration of Women in Computing, Houston, TX, panel, September 28, 2018.

Helen Hu, Joanna Goode, Patricia Ordóñez, “Five Days that Changed my Teaching,” 2018 TAPIA Celebration of Diversity in Computing, Orlando, FL, workshop, September 21, 2018.

Patricia Ordóñez, Omar Florez, Juan Gilbert, Vicente Ordóñez, Brianna Posadas, Kori Inkpen, “Dealing with Bias and Unfairness in Machine Learning Algorithms,” 2018 TAPIA Celebration of Diversity in Computing, Orlando, FL, panel, September 21, 2018.

Edusmildo Orozco, Michelle Borrero, Joseph Carroll-Miranda, Patricia Ordóñez, Luis López, Agustín Corchado, Gerrian Houser, Eliud Gerena, Andreshka Santana, “Explorando la Ciencia de Cómputos para Puerto Rico,” in Proceedings of Seminario Interuniversitario de Investigción en Ciencias Matemáticas (SIDIM 2018), San Juan, PR, March 23-24, 2018.

Patricia Ordóñez, Joseph Carroll-Miranda, María López Delgado, Eliud Gerena, Grace Rodríguez. “Incorporating Computational Thinking in the Classrooms of Puerto Rico: How a MOOC served as an outreach and recruitment tool for Computer Science Education,” Special Interest Group in Computer Science Education Annual Conference, Baltimore, MD, presentation, February 22, 2018.

Renetta Tull, Autumn Reed, Pamela Felder, Shawnisha Hester, Denise Williams, Yarazeth Medina, Amanda Lo, Erika Aparaka, Patricia Ordonez, “Social Media Hacking Activities as Hybridized Mentoring Mechanisms for Underrepresented Minorities in STEM,” American Society for Engineering Education Global Colloquium, Azores, Portugal, presentation, September 2017.

Grace M Rodriguez, Marvis Cruz, Andrew Solis, Patricia Ordóñez, Brian C McCann, “An immersive approach to visualizing perceptual disturbances,” in Proceedings of IEEE Virtual Reality (VR) Conference, Los Angeles, CA, March 20, 2017.

Patricia Ordóñez, Pathways to Graduate School in STEM, Salisbury University, panel, February 10, 2017.

Abiel Roche, Patricia Ordóñez, “Classification of Physiological Data for Intelligent Decision-aid Tools in Intensive Care Units,” Machine Learning for Health Workshop co-located with Neural Information Processing Systems (NIPS 2016), Barcelona, Spain, December 9, 2016, poster.

Patricia Ordóñez, Abiel Roche, “Classification of Physiological Data for Intelligent Decision-aid Tools in Intensive Care Units,” Women in Machine Learning Workshop co-located with Neural Information Processing Systems (NIPS 2016), Barcelona, Spain, December 9, 2016, poster.

Patricia Ordóñez, “Increasing Diversity in Interdisciplinary Biomedical Big Data”, NIH All Hands BD2K Meeting, Washington, DC, November 29, 2016, oral.

Abiel Roche, Patricia Ordóñez, "Supervised Learning Methods based on Finite-State Transducers to Classify Physiological Data," extended abstract, NIPS 2015 Workshop on Machine Learning in Healthcare, Montreal, Canada, December 11, 2015, poster.

Jean Karlo Rodriguez-Cartagena, Andrea Claudio-Palacios, Natalia Pacheco-Tallaj, Valerie Santiago-González, Patricia Ordóñez-Franco, "Implementation of a Vocabulary and Grammar for an Open-Source Speech-Recognition Programming Platform," 17th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS) 2015, extended abstract for Demo, Lisbon, Portugal, October 26, 2015, poster and demo. Placed second in the competition.

Efrain Ramos, Patricia Ordóñez, "Multivariate Time Series Analysis," CAHSI Summit, San Juan, PR, September 10, 2015, poster.

Xiomara Figueroa, Patricia Ordóñez, "Improving Programming Interfaces for People with Limited Mobility Using Voice Recognition," 16th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2014, Seattle, Washington, October 20, 2014, poster.

Patricia Ordóñez, "Assistive technology research as a mechanism to broaden the participation of women, underrepresented minorities, and persons with disabilities," Latin American and the Caribbean Consortium of Engineering Institutions Conference, Guayaquil, Ecuador, July 23, 2014, oral.

Patricia Ordóñez, "Promoting and Showcasing Health Informatics in Latin America and the Caribbean through Interdisciplinary Collaboration," Latin American and the Caribbean Consortium of Engineering Institutions Conference, Guayaquil, Ecuador, July 24, 2014, oral.

Patricia Ordóñez, "Machine Learning the World Cup, Medicine, and Neuroscience," Center for Brain, Minds, and Machines, MIT, Cambridge, Massachusetts, July 9, 2014, oral.

Orlando R. Rivera Pérez, Patricia Ordóñez, "Analysis of Time Series Data of Varying Lengths," in Proceedings of the Inter-University Mathematical Sciences Research Seminar (SIDIM 2014), Ponce, PR, March 1, 2014, poster.

Patricia Ordóñez, "The Do Good Scientist," Caribbean Celebration of Women in Computing 2014, Aguadilla, PR, February 27, 2014, oral.

Patricia Ordóñez, "A Health Informatics Research Project: using visual analytics to improve care for premature infants in hospitals," Caribbean Celebration of Women in Computing 2014, Aguadilla, PR, February 27, 2014, oral.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, Christoph U. Lehman, "Multivariate Methods for Classifying Physiological Data," Symposium of Complex Medical Data 2013, Los Angeles, CA, August 16, 2013, oral.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, Christoph U. Lehman, "Multivariate Methods for Classifying Physiological Data," Workshop on Data Mining Medicine and HealthCare (DMMH 2013), Austin, TX, May 4, 2013, oral.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, "Classification of patients using novel multivariate time series representations of physiological data," International Conference on Machine Learning and Applications 2011, Honolulu, Hawaii, December 19, 2011, oral.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, "Using modified multivariate bag-of-words models to

classify physiological data," Mining Multiple Information Sources Workshop at the International Conference on Data Mining 2011, Vancouver, Canada, December 11, 2011, oral.

Patricia Ordóñez, Tom Armstrong, Tim Oates, Jim Fackler, "Classification of Multivariate Vital Signs Data Using Stacked Bags-of-Patterns," Meaning Use of Complex Medical Data Symposium 2011, Los Angeles, CA, August 27, 2011, poster & oral.

Patricia Ordóñez, Tim Oates, Michael Lombardi, Jim Fackler, Kathryn W. Holmes, Christoph U. Lehmann, "A Practical Visualization of Physiological and Clinical Data for All Intensive Care Units," Meaning Use of Complex Medical Data Symposium 2011, Los Angeles, CA, August 27, 2011, poster & oral.

Patricia Ordóñez, Marie desJardins, Michael Lombardi, Christoph U. Lehmann, Jim Fackler, "An Animated Multivariate Visualization for Physiological and Clinical Data in the ICU," First ACM International Health Informatics Symposium (IHI '10), Arlington, VA, November 12, 2010, poster.

Christoph U. Lehmann, Patricia Ordóñez, Jim Fackler, Kathryn Holmes, "Practical Visualization of Multivariate Time Series Data in a Neonatal ICU," Visual Analytics in Health Care Workshop (VAHC 2010), Salt Lake City, UT, October 24, 2010, oral.

Patricia Ordóñez, Marie desJardins, "Multivariate Time Series Analysis of Clinical and Physiological Data," Ph.D. Forum of Grace Hopper Celebration of Women in Computing 2010, Atlanta, GA, September 29, 2010, oral.

Patricia Ordóñez, Marie desJardins, Tim Oates, Kathryn Holmes, Christoph U. Lehmann, Jim Fackler, "Multivariate Time Series Analysis of Physiological and Clinical Data," Computer Science and Electrical Engineering Research Review, UMBC, May 7, 2010, poster.

Patricia Ordóñez, "Visualizing Clinical and Medical Data using a Multivariate Temporal Perspective," Graduate Research Conference, UMBC, April 30, 2010, oral.

Patricia Ordóñez, "Multivariate Time-Series Analysis of Physiological and Clinical Data," Future Faculty Career Exploration Program (FFCEP 2009), Rochester Institute of Technology, Rochester, NY, September 24, 2009, oral.

Patricia Ordóñez, Marie desJardins, Carolyn Feltes, Christoph U. Lehmann, Jim Fackler, "Multivariate Time Series Analysis of Physiological and Clinical Data," International Conference on Machine Learning (ICML 2009), Montreal, Canada, July 22, 2009, oral.

Patricia Ordóñez, “A Multivariate Time-Series Visualization of a Clinical and Physiological Data,” Graduate Research Conference, UMBC, April 24, 2009, oral.

Patricia Ordóñez, Marie desJardins, Carolyn Feltes, Christoph U. Lehmann, Jim Fackler, “Visualizing and Clustering Multivariate Time Series Data to Detect Medical Conditions,” North-Eastern Student Colloquium on Artificial Intelligence (NESCAI 2008), Ithaca, NY, May 4, 2008, poster.

Patricia Ordóñez, Palanivel Kodeswaran, Anupam Joshi, “Traumapod,” CSEE Review Day, UMBC, May 4, 2007, poster. Also, at the UMBC Graduate Research Conference (GRC), UMBC, April 27, 2007, poster.

Patricia Ordóñez, Sheetal Agarwal, Anupam Joshi, “Context-Aware Surgical Training (CAST),” CSEE Review, UMBC, May 5, 2006, poster. Also, at the UMBC GRC, UMBC, April 28, 2006, poster.

Patricia Ordóñez, Anupam Joshi, “Context-Aware Surgical Training Center,” PROMISE Research Symposium, University of Maryland, College Park (UMCP), College Park, MD, January 23, 2006, poster.

INVITED/HIGH PROFILE/INTERNATIONAL PRESENTATIONS & PANELS

Patricia Ordóñez, “Equity-Enabling Research to Tackle the Digital Divide and Homelessness,” Social Responsibility in Technology Symposium, UMBC, Baltimore, MD, virtual presentation, March 31, 2023.

Patricia Ordóñez, “Equity-Enabling Research to Tackle the Digital Divide and Homelessness,” 2023 WOMEN DESIGNING THE FUTURE CONFERENCE, “Artificial Intelligence / Real Human Lives: making technology work for all of us,” The Murray Center for Women in Technology, New Jersey Institute of Technology, March 31, 2023.

Ayana Howard (moderator), Patricia Ordóñez, Nicki Washington, Kinnis Gosha, “Navigating Microaggressions & Finding Your Voice Plenary,” CRA-IDEALS Plenary Panel, Honolulu, Hawaii, March 23, 2023.

Patricia Ordóñez, “¿Cómo desarrollarte en la computación cuando no crees que es para tí?,” Make Health Colombia Conference, Medellín, Colombia, August 3, 2023.

Patricia Ordóñez, “¡Cí eS para mí!” 2022 AAAI-Undergraduate Consortium. virtual, February 22, 2022.

Patricia Ordóñez, “Data Science for Social Justice: Using hackathons and datathons to turn despair into empowerment,” South Big Data Hub, Georgia Tech, virtual, February 4, 2022.

Patricia Ordóñez, “Mining and Visualizing Physiological Data,” 2021 Forward Summit, San Juan, PR, virtual, December 10, 2021.

Patricia Ordóñez, Jason Williams, Martin Pavlovski, Sanjana Reddy Pasnuri, National Student Data Corps: April 2021 Data Science Career Panel, virtual, April 16, 2021.

Patricia Ordóñez Franco, “La importancia de Design Thinking y Data Science después de Huracán María en Puerto Rico,” El Congreso Regional de Investigación Interinstitucional (CRII) 2021, Colima, Mexico, virtual, October 7, 2021.

Patricia Ordóñez, “Design Thinking and Data Science for Social Justice and Diversifying the Field of Computing”, Third Annual Conference of Computational Thinking in Schools, School of Scholars, Nagpur, India, virtual, September 29, 2021.

Patricia Ordóñez, “The Importance of Design Thinking and Data Science Post Hurricane María,” 2021 Machine Learning for Healthcare Conference, virtual, August 6, 2021.

Patricia Ordóñez, Sanjana Reddy Pasnuri, Jason Williams, Martin Pavlovski, Forough Ghahramani, Haleigh Stewart, Northeast Student Data Corps: April 2021 Data Career Panel, April 16, 2021.

Patricia Ordóñez, “Spurring Innovation and Diversity in Interdisciplinary Biomedical Data Science through Hackathons in Puerto Rico,” Amherst College, Amherst, MA, January 16, 2018.

Shirley Malcolm, Tina Brower-Thomas, Maribel Vazquez, Judy Brown-Clarke, Patricia Ordóñez, Lizanne DiStefano, "A Seat at the Table: Integrating MSIs into the STCs," NSF Science Technology Centers Directors Meeting, panel, Arlington, VA, August 29, 2017.

Patricia Ordóñez, Lynn Johnson Langer, Kenneth Sembach, Marguerite Hoyt, Camille Daniel, Beverly Wendland, Ashley J. Llorens, “Hidden Figures: More than Just Numbers,” Johns Hopkins Alumni Network, Senator Theater, Baltimore, MD, January 29, 2017.

Patricia Ordóñez, “Spurring Innovation in Healthcare and Equity,” Universidad de Salamanca, Salamanca, Spain, November 3, 2016.

Patricia Ordóñez, “Spurring Innovation in Healthcare in Latin America and the Caribbean.” 2016 Health Informatics Tools Workshop, Medellín, Colombia, July 27, 2016.

Greetchen Díaz, Lucy Crespo, Michelle Martínez, Patricia Ordóñez, Giovanna Guerrero, “Entre Borinqueñas: Historias de Mujeres en STEM,” Puerto Rico Science, Research and Technology Trust, San Juan, PR, March 31, 2016, panel.

Patricia Ordóñez, “The Importance of Creating Programs in Technology for the Older Generations of Puerto Rico” *Cenas Empresariales*, Foundation for Puerto Rico, San Juan, PR, April 23, 2016.

Panelist, Semillas del Triunfo: Programa de Embajadoras del STEM, Panel, Ciencia PR, Universidad de Puerto Rico, Humacao, September 5, 2015.

Patricia Ordóñez, "A Collaborative and Interdisciplinary Project to Promote Health Informatics in Latin America and the Caribbean." Simposio: Las Tecnologías de Información y la Salud Móvil: Lecciones Aprendidas y Desafíos para América Latina y el Mundo, Lima, Perú, March 20, 2015.

Panelist, "Career Choices" panel at Ciancia Puerto Rico 2013 Symposium, San Juan, PR, October 2013.

Patricia Ordóñez, "A Collaborative and Interdisciplinary Project to Promote Global Health," Informatics Training for Global Health Network Meeting at NIH, Bethesda, MD, September 13, 2013.

Patricia Ordóñez, "An Animated Multivariate Visualization of Clinical and Physiological Data in a Neonatal ICU," Center for Advanced Information Management Technology Forum at Columbia University titled "Imaging, Visualization, and Simulation: New Tools for Technology and Healthcare," New York Academy of Sciences, New York, NY, June 17, 2011.

Patricia Ordóñez, "Informática Biomédica," Pontificia Universidad Javeriana, Bogotá, Colombia, March 2, 2011.

Patricia Ordóñez, "Análisis Temporales sobre Múltiples Variables de Información Fisiológica y Clínica," Pontificia Universidad Javeriana, Bogotá, Colombia, March 2, 2011.

OTHER ACCEPTED PEER-REVIEWED PROPOSALS for Presentations and Panels at Conferences Patricia Ordóñéz (moderator), Kori Inkpen, Brianna Posadas, Juan Gilbert, "Dealing with Unfairness and Bias in AI," 2019 Tapia Celebration of Diversity in Computing, San Diego, CA, September 20, 2019, panel.

Lilliam Casillas, Patricia Ordóñez, "Teaching to Increase Equity in STEM (TIDES): Empowering Underrepresented using culturally-responsive strategies and tackling bias," 2019 Tapia Celebration of Diversity in Computing, San Diego, CA, panel, September 20, 2019, workshop.

Patricia Ordóñez, Nery Chaptón-Lamas, Juan F. Sequeda, Brianna Posadas, "Hispanics in Computing Community" 2019 Tapia Celebration of Diversity in Computing, San Diego, CA, September 19, 2019, Birds of a Feather.

Yajaira González, Patricia Ordóñez, Zaira Vallenilla "Got a CS or CSE bachelors, now what?" Caribbean Celebration of Women in Computing, Mayaguez, PR, April 9, 2016, panel.

Patricia Ordóñez, "Increasing Diversity in Computer Science through Interdisciplinary Collaborations," Caribbean Celebration of Women in Computing 2015, Mayaguez, PR, April 9, 2016, oral.

Patricia Ordóñez, Dale Reed, Helen H. Hu, Joanna Goode, “Five Days that Transformed My Teaching,” Special Interest Group of Computer Science Education Conference (SIGCSE 2015), special session, not accepted.

Patricia Ordóñez, “A Competitive Sports Model for the CS Curriculum,” Special Interest Group of Computer Science Education Conference (SIGCSE 2015), lightning talk, not accepted.

Patricia Ordóñez, Heidi Ellis, Darci Burdge, Becka Morgan, Karen Alkoby, “Using Humanitarian Free and Open-Source Software (HFOSS) to Attract the Underrepresented to Computer Science,” Tapia Celebration of Diversity in Computing Conference 2015, panel.

Patricia Ordóñez, Mini-grant Proposal for travel of Keynote Speaker, Karen Alkoby, to the Caribbean Celebration of Women in Computing 2014, Access Computing, $786, partially funded.

Patricia Ordóñez, “Diversity among Hispanics – Who are we and how can we get out of the shallow end?” Tapia Celebration of Diversity in Computing 2014, panel.

Patricia Ordóñez, “The 10 Million Dollar Plan: Increasing Graduate Funding and Diversity in Computing” Tapia Celebration of Diversity in Computing 2014, workshop.

Patricia Ordóñez, Mini-grant Proposal for travel for panelist Karen Alkoby to Grace Hopper Celebration of Women in Computing 2013 Panel “Getting Out of the Shallow End: Techniques for empowering and encouraging underrepresented women in computing,” Access Computing, $1225, accepted.

Patricia Ordóñez, “Getting Out of the Shallow End: Techniques for empowering and encouraging underrepresented women in computing,” Grace Hopper Celebration of Women in Computing 2013, panel.

Panelist, “Career Choices,” Broadening Participation in Data Mining Workshop 2013, Chicago, IL, August 2013, panel. Panelist, “Career Choices,” Tapia Celebration of Computing 2013, Washington, DC, February 2013, panel.

Patricia Ordóñez, “How to Fund Your Graduate Education,” Tapia Celebration of Diversity in Computing 2012, not accepted.

Patricia Ordóñez, Kavita Krishnaswamy, “Understanding the experience of underrepresented women in graduate school,” Tapia Celebration of Diversity in Computing 2012, not accepted.

Patricia Ordóñez, Kavita Krishnaswamy, “Understanding the experience of underrepresented women in graduate school,” Grace Hopper Celebration of Women in Computing 2012, not accepted.

OTHER PRESENTATIONS

Patricia Ordóñez, “How to Write a Personal Statement,” National Neuroscience Students Association of the University of Puerto Rico Río Piedras, virtual, February 16, 2022.

Patricia Ordóñez, Jorge Colón, Diana Silva, Nora Álvarez, “How to Fund Your Graduate Education,” University of Puerto Rico Río Piedras, virtual, August 28, 2021.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC PROMISE Program, Baltimore, MD, September 12, 2021.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC Math Department, Baltimore, MD, August 27, 2021.

Patricia Ordóñez, Lola Brown “How to Fund Your Graduate Education,” MIT Summer Research Program, Cambridge, MA, June 29, 2021.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC PROMISE Program, Baltimore, MD, September 11, 2020.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC Math Department, Baltimore, MD, August 21, 2020.

Patricia Ordóñez, “How to Fund Your Graduate Education,” Explore Computing Research Conference, Mayaguez, PR, March 16, 2019.

Patricia Ordóñez, Frances D. Carter-Johnson, Lola Brown, “How to Fund Your Graduate Education,” Summer Success Institute, Baltimore, MD, August 18, 2017.

Patricia Ordóñez, “How to Write a Successful Personal Statement,” IDI-BD2K Seminar, URPRP, San Juan, PR, October 31, 2016.

Patricia Ordóñez, “Why is Computational Thinking Important?” CS4All Summit 2016, San Juan, PR, September 22, 2016.
Patricia Ordóñez, Frances D. Carter-Johnson, “How to Write a Successful Personal Statement,” UMBC Student Success

Seminar, Baltimore, MD, September 10, 2016.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC Student Success Seminar, Baltimore, MD, September 10, 2016.

Patricia Ordóñez, Alexis Williams, “Sisters in the Dissertation House,” PROMISE Summer Success Institute, Baltimore, MD, August 19, 2016.

Patricia Ordóñez, "SHILAC and the Varmed Super Utilizer Challenge" Invited Speaker for Inaugural Healthcare Innovation Summit, San Juan, PR, May 6, 2016.

Patricia Ordóñez, “Include Girls and SHILAC: Initiatives to recruit more Latinas into the Computational Sciences”, Invited Speaker for the Inaugural Project Kaleidoscope Meeting in Puerto Rico, Humacao, January 28, 2016.

Patricia Ordóñez, “Equity and Computer Science Education,” Invited Speaker for Inaugural Project Kaleidoscope Meeting in Puerto Rico, Humacao, January 28, 2016.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Write a Successful Personal Statement,” UMBC Student Success Seminar, Baltimore, MD, September 6, 2015.

Patricia Ordóñez, Frances D. Carter-Johnson, “How to Fund Your Graduate Education,” UMBC Student Success Seminar, Baltimore, MD, September 6, 2015.

Patricia Ordóñez and Joseph Carroll-Miranda, “What is computational thinking and why is it important?” First Learning Technologies Institute: Tensions and Tendencies. University of Puerto Rico Río Piedras, San Juan, PR, November 7, 2014.

Darcy Burge, Becka Morgan, Patricia Ordóñez, Karen Alkoby, "Humanitarian Free and Open-Source Software: Motivating the Underrepresented," GHC 2015, Houston, Texas, October 14, 2015, panel.

Patricia Ordóñez, "How to Write a Successful Personal Statement," University of Puerto Rico Río Piedras, San Juan, PR, September 19, 2014.

Patricia Ordóñez, Frances D. Carter-Johnson, "How to Write a Successful Personal Statement," UMBC Student Success Seminar, Baltimore, MD, September 6, 2014.

Patricia Ordóñez, Frances D. Carter-Johnson, "How to Fund Your Graduate Education," UMBC Student Success Seminar, Baltimore, MD, September 6, 2014.

Patricia Ordóñez, Frances D. Carter-Johnson, "How to Fund Your Graduate Education," MIT Summer Research Program, Cambridge, MA, July 10, 2014.

Patricia Ordóñez, Jorge Ortiz-Carpena, Edwin Rosado, "How to Fund Your Graduate Education," University of Puerto Rico Río Piedras, San Juan, PR, May 14, 2014.

Patricia Ordóñez and Frances Carter-Johnson, "The 10 Million Dollar Plan: Increasing Graduate Funding and Diversity in Computing" Tapia Celebration of Diversity in Computing 2014, Seattle, WA, February 7, 2014.

Patricia Ordóñez, Manuel Perez-Quiñones, Carlos Evia, Jane Margolis, Nayda Santiago, "Diversity among Hispanics – Who are we and how can we get out of the shallow end?" Tapia Celebration of Diversity in Computing 2014, Seattle, WA, February 6, 2014.

Patricia Ordóñez, "Cómo financiar sus estudios graduados – componentes claves de buenas propuestas de becas," Ciencia PR, University of Puerto Rico Medical Sciences Campus, San Juan, PR, October 19, 2013.

Patricia Ordóñez, "How to Write a Personal Statement," University of Puerto Rico Río Piedras, San Juan, PR, October 10, 2013.

Patricia Ordóñez, "How to Apply for the National Science Foundation Graduate Research Program," University of Puerto Rico Río Piedras, San Juan, PR, October 10, 2013.

Patricia Ordóñez, Tom Armstrong, Karen Alkoby, Kavita Krishnaswamy, Joanna Goode, "Getting Out of the Shallow End: Techniques for empowering and encouraging underrepresented women in computing," Grace Hopper Celebration of Women in Computing 2013 Panel, October 4, 2013.

Patricia Ordóñez and Andrea Grimes Parker, "Graduate School Survival Skills," CRA-W Graduate Panel Series at 2013 Grace Hopper Celebration of Women in Computing Conference, Minneapolis, MN, October 2, 2013.

Patricia Ordóñez, Frances D. Carter, "How to Fund Your Graduate Education," Spelman College, Atlanta, GA, September 22, 2013.

Patricia Ordóñez, Frances D. Carter, "How to Fund Your Graduate Education," Clemson University, Clemson, SC, September 21, 2013.

Patricia Ordóñez, Frances D. Carter-Johnson, "Funding Your Graduate Education Workshop," UMBC Student Success Seminar, Baltimore, MD, September 7, 2013.

Patricia Ordóñez, Frances D. Carter, "How to Fund Your Graduate Education," MIT Summer Research Program, Cambridge, MA, July 28, 2013.

Patricia Ordóñez, Nora Álvarez, Nicole Aponte, Sean Kelly, María Ocasio, "How to Write a Personal Statement," University of Puerto Rico Río Piedras, San Juan, PR, May 2, 2013.

Patricia Ordóñez, Frances D. Carter-Johnson, "Funding Your Graduate Education Workshop," UMBC Student Success Seminar, Baltimore, MD, September 15, 2012.

Patricia Ordóñez, “How to Fund Your Graduate Education,” University of Puerto Rico Río Piedras, San Juan, PR, September 5, 2012.

Patricia Ordóñez, Frances D. Carter, “How to Fund Your Graduate Education,” MIT Summer Research Program, Cambridge, MA, June 21, 2012.

Patricia Ordóñez, Frances D. Carter, “How to Fund Your Graduate Education,” Harvard School of Engineering and Applied Sciences Research Experience for Undergraduates Program, Cambridge, MA, June 21, 2012.

Patricia Ordóñez, Frances D. Carter, “How to Fund Your Graduate Education,” UMBC Student Success Seminar, Baltimore, MD, September 17, 2011.

Patricia Ordóñez, Frances D. Carter, “How to Fund Your Graduate Education,” MIT Summer Research Program, Cambridge, MA, July 28, 2011.

Patricia Ordóñez, “Multivariate Time Series Analysis of Clinical and Physiological Data,” Tufts University, Computer Science Department, Medford, MA February 24, 2011.

Patricia Ordóñez, Frances D. Carter, “How to Fund Your Graduate Education,” MIT Summer Research Program, Cambridge, MA, June 15, 2010.

Patricia Ordóñez, Frances D. Carter, “How to Prepare Application for the National Science Foundation’s Graduate Research Fellowship,” UMBC, September 23, 2009.

Panelist on Fellowship Panel for the MIT Summer Research Program, Cambridge, MA, July 21, 2009.

Panelist at UMBC President’s Commission on Women Women’s Leadership Summit, “Sharing our Stories; Lessons on the Path to Leadership,” UMBC, April 15, 2009.

Patricia Ordóñez, Frances D. Carter, “How to Prepare Application for the National Science Foundation’s Graduate Research Fellowship,” UMBC, September 17, 2008.

Panelist in PROMISE Summer Success Institute, “Developing Your Support Systems as a Graduate Student,” UMCP, College Park, MD, August 16, 2008.

Patricia Ordóñez, Frances D. Carter, “How to Prepare Application for the National Science Foundation’s Graduate Research Fellowship,” UMBC, September 27, 2007.

Presenter, Computer Mania Day, “Launching Yourself into Cyber Space,” UMBC, May 2006 & 2007.

Guest Lecturer on several occasions at UMBC for CMSC 601 (Basic Research Methods), CMSC 471 (Principles of Artificial Intelligence), CMSC 331 (Principles of Programming Languages), CMSC 203 (Discrete Math), CMSC 201 (Computer Science I), and FYS 102A & 102D (Investigating Everyday Problems & Their Current IT Solutions), fall 2006 - present.

FUNDED RESEARCH PROPOSALS

Collaborative Research: Arecibo C3 - Center for Culturally Relevant and Inclusive Science Education, Computational Skills, and Community Engagement, NSF, $5,503,232 ($311,172 for UMBC). Duration: January 1, 2019 – December 31, 2021.Collaborative Agreement with NSF; Cold Spring Harbor (Lead Institution), PI Jason Williams; Sagrado Corazón, PI Wanda Díaz Merced; UPR Río Piedras, PI José Agosto; and UMBC, PI Patricia Ordóñez.

Train the Trainers for B2G Learning Centers, ECEP, $334,302. Duration: January 1, 2019 – December 31, 2021. PI: Megean Co-PI: Patricia Ordóñez.

Interdisciplinary and Quantitative Biology Research Experience for Undergraduates (IQ-Bio-REU), NSF-REU, $334,302. Duration: January 1, 2019 – December 31, 2021. PI: Juan Ramirez-Lugo Co-PI: Patricia Ordóñez.

Exploring Computer Science in Puerto Rico, CS4All: RPP, $300,000. Duration: November 1, 2017-October 31, 2019, PI: Edusmildo Orozco, Co-PIs: Luis Lopez, Joseph Carroll-Miranda, Michelle Borrero, Agustin Corchado, Senior Personnel: Patricia Ordóñez.

Exploring Computer Science PD in Puerto Rico, Google CS Educator PD grant, $35,000. Duration: Summer 2018 – Summer 2019. PI: Timothy Anderson (World Computer Exchange), Co-PIs: Joseph Carroll-Miranda, Patricia Ordóñez.

Training the Trainer in ECS-PR PD, Exploring Computing Education Pathways Mini-grant, $21,700. Duration: Summer 2017. PI: Joseph Carroll-Miranda Co-PIs: Patricia Ordóñez, Edusmildo Orozco, Luis López, Agustín Corchado.

Increasing Diversity in Interdisciplinary Big Data to Knowledge (IDI-BD2K), NIH- BD2K, $1,067,600. Duration: 9/1/2015-08/31/2020. PI: José García Arrarás. Co-PIs: María E. Pérez, Patricia Ordóñez.

Translating and implementing a culturally relevant Exploring Computer Science curriculum for Puerto Rico (ECS-PR), Exploring Computing Education Pathways Mini-grant, $20,000. Duration: 12/1/2015-12/31/16. PI: Joseph Carroll-Miranda Co-PIs: Patricia Ordóñez, Edusmildo Orozco, Agustín Corchado, Luis López.

Biomedical Data Science Workshop, CRA-W/CDC, $30,000 (direct award to supported students), Duration: 11/20/2015-11/22/2015. PI: Patricia Ordóñez Co- PIs: Tyrone Grandison, Aury Curbelo.

Training the Trainer in Exploring Computer Science, Exploring Computing Education Pathways Mini-grant, $25,000. Duration: 06/1/2015-08/31/15. PI: Edusmildo Orozco Co-PIs: Joseph Carroll-Miranda, Patricia Ordóñez, Agustín Corchado, Luis López.

Academics and Training for the Advancement of Cybersecurity Knowledge in Puerto Rico (ATACK PR), NSF-SFS, $299,982, Duration: 09/01/2014-08/31/2017. PI: José Ortiz-Ubarri Co-PIs: Rafael Arce Nazario, Humberto Ortiz Zuazaga, Patricia Ordóñez.

Integrating Computational Thinking into the High School Curriculum in Puerto Rico, Google CS4HS, $18,000. Duration: 5/2014-6/2016. PI: Joseph Carroll-Miranda Co-PI: Patricia Ordóñez.

Multivariate Time Series Analysis of Physiological and Clinical Data to Predict Patent Ductus Arteriosus (PDA) in Neo-Natal Patients (CRA-W Collaborative Research Experiences for Undergraduates (CREU)), $20,000 (direct award to supported students). Duration: 8/10–8/11. Co-PIs: Patricia Ordóñez, Marie desJardins, and Kathryn Holmes.

SUBMITTED RESEARCH PROPOSALS

Building Computer Science for All in Puerto Rico.

Establishing More Equitable Pathways to Graduate Education in STEM. Alfred P. Sloan Foundation. $499,920. Duration:12/01/2021-11/30/2023. PI: Patricia Ordóñez; co-PI: José García Arrarás, not funded.

PreK-8 Strand, Small RPP: Computational Thinking and Computer Science in elementary level for Puerto Rico (CTSEPR), NSF Computer Science for All: RPP, $ 299,998. Project Duration: 9/1/2020-8/30/2022. PI: Luis López, co-PI: Joseph Carroll- Miranda; Ph.D.; co-PI: Patricia Ordoñez, not funded.

Researching the use of online teacher training and community outreach to build a collective impact model for computer science education in Puerto Rico. NSF Eager Grant, $ 299,997, Project Duration: 08/01/2020-01/31/2021. PI: Timothy Anderson; Co- PI: Joseph Carroll-Miranda, Co-PI: Patricia Ordóñez, not funded.

Interdisciplinary and Quantitative Biology Research Experience for Undergraduates (IQ-Bio-REU), NSF-REU, $352,693. Duration: January 1, 2018 – December 31, 2020. PI: Juan Ramirez-Lugo Co-PI: Patricia Ordonez, not funded.

Latin@s in ACTION (Advancing Computational Thinking to Improve Opportunities Nationwide), NSF STEM+C, $244,037. Duration: 9/1/2017-8/30/2020. PI: Joseph Carroll-Miranda and Co-PI: Patricia Ordóñez, not funded**.**

Classification and Visualization of Physiological Data for Intelligent Mobile Decision-aid Tools for Intensive Care Units, Puerto Rico Science, Technology and Research Trust, Small Research Grant Program, $70,000. Duration: 1/1/2017-6/1/2018. PI: Abiel Roche Lima, co-PI: Patricia Ordóñez, not funded.

Can a MOOC for high school teachers increase diversity in a university CS program? (CRA-W Collaborative Research Experiences for Undergraduates (CREU)), $15,500 (direct award to undergraduate students). Co-PIs: Patricia Ordóñez, Joseph Carroll-Miranda, not funded.

Increasing Diversity in Computer Science through the Adoption of a CS Curriculum and of a Peer Mentoring Model for High School Teachers in Puerto Rico, Fondos Institucionales Para la Investigación (FIPI), Decanto de Estudios Graduados e Investigación, $17,770. Co-PIs: Patricia Ordóñez Franco, Joseph Carroll Miranda, not funded.

Usability Evaluation (CRA-W CREU), 2013, $7,000 (direct award to support one undergraduate student). Co-PIs: Patricia Ordóñez and Melissa López Serrano, not funded.

INVITED WORKSHOPS/FORUMS/MEETINGS

2023 CS4All Script Workshop, Suitland High School, panelist, May 17, 2023, Forrestville, MD. 2019 AccessComputing DO-IT Workshop, February 20-22, 2019, Seattle, WA.

2018 SouthBD Hub's and DataUp's Carpentries Train the Trainer Workshop, November 7-8, 2018, Atlanta, GA.

2018 Exploring Computer Science Professional Development Workshop (ECS-PR PD 2018), June 25-29, 2018, San Juan, PR. 2018 Center for Causal Discovery Short Course, Carnegie Mellon University, June 11-15, 2018, Pittsburgh, PA.

2018 Pre-SIGCSE POSSE (Professors' Open-Source Summer Experience) Roundup, February 20, 2018, Baltimore, MD. 2017 "Keeping Data Science Broad: Workshop on Negotiating the Digital and Data Divide," SouthBDHub, October 31-

November 1, Atlanta, GA.

2017 STEM Women of Color Conclave and Leadership Academy, September 30-October 2, Ellicott City, MD.

2017 Academic Career Workshop for Underrepresented Junior Faculty and Senior Graduate Students, April 6-9, Houston, TX. 2017 Computer Science for All Workshop, January 11-13, Los Angeles, CA.

2016 ECEP Face-to-Face Annual Meeting, October 28-29, Washington, DC.

2016 White House Symposium on State Implementation of Computer Science for All, October 28, Washington, DC. 2016 Microsoft Research Faculty Summit 2014, June 13 (12-14), Redmond, WA.

2015 CBMM Annual Meeting and Poster Session, August 22, Boston, MA. 2015 ECEP Face-to-Face Annual Meeting, August 15, Charlotte, NC.

2015 CRA-W/CDC Career Mentoring Workshop, June 13-14, Portland, OR.

2014 Exploring Computer Science Professional Development Workshop (ECS PD 2014), June 16-20, Los Angeles, CA. 2014 STEM Women of Color Conclave, June 8-9, 2017, Herndon, VA.

2014 Professors' Open-Source Summer Experience (POSSE 2014), May 26-28, Philadelphia, PA. 2014 Quantitative Biology Workshop of MIT Department of Biology, January 3-10, Cambridge, MA. 2014 Center for Brains, Minds, and Machinery Outreach Workshop, January 9-11, Cambridge, MA. 2013 Summer Success Institute, August 17, Baltimore, MD.

2013 Broadening Participation in Data Mining, August 9 -10, Chicago, IL.

2013 Hispanic-Serving Health Professional Schools (HSHPS) Networking Event (July 24-25) in Bethesda, MD.

2013 Academic Career Workshop for Underrepresented Junior Faculty and Senior Graduate Students, June, Chicago, IL. 2013 Affinity Research Groups Workshop, June, Miami, FL.

2013 Professors' Open-Source Summer Experience (POSSE 2013), June, Philadelphia, PA.

2012 MIT Media Lab's Innovation and Wellness Event, January, MIT, Cambridge, MA. The team earned second place in the event.

2011 Inaugural Hacking Medicine Event, January, MIT, Cambridge, MA.

2011 Women's Ph.D. Networking Event, GE Global Research in Niskayuna, NY. 2010 Innovations of the Surgical Environment in Annapolis, MD

2010 Academic Careers Workshop in Houston, TX. 2010 Google Grad CS Forum in San Francisco, CA.

2009 RIT Future Faculty Exploration Program in Rochester, NY. 2009 CRA-W Career Mentoring Workshop in Pasadena, CA.

2007 Women's Institute for Summer Enrichment (WISE) at the University of California, Berkeley.

2007 BIRS (Banff International Research Station) Mentoring Workshop for Engineering Academia II, Banff, Canada.

REQUIRED WORKSHOPS

Gestión y Obtención de Fondos Externos (3 hours), October 19, 2013. Ética en los procesos de enseñanza (2 hours), October 11, 2013.

Tendencias Tecnológicas en los Procesos de Enseñanza-Aprendizaje (2 hours), October 11, 2013. Orientación Institucional a Profesores Nuevos 2013 (6 hours), August 5, 2013.

Time & Effort (3 hours), December 5, 2012.

SKILLS

Programming Languages: Perl, Java, C, C++, JavaScript, Python, MATLAB, R.

Web Technologies: HTML, CSS, JavaScript, Bootstrap. *Databases:* Oracle SQL & PL/SQL, MySQL, FileMaker. *Operating Systems:* Linux, Windows, Mac OS.

IDEs: Eclipse, NetBeans, WSAD.

Linguistic: Bilingual in English/Spanish; proficient in French; knowledge of Portuguese, German, and Italian.

SERVICE ACTIVITIES

Reviewer, National Science Foundation, 2013-2015, 2017-present

Reviewer, Tapia Celebration of Diversity in Computing Conference, 2014, 2020-2022. Reviewer, National Institutes of Health, 2017, 2019.

Reviewer, Respect Conference, 2018.

Reviewer, NCWIT Academic Alliance Seed Fund, 2018.

Reviewer, AAAI (Association for the Advancement of Artificial Intelligence) Conference, 2018, 2019. Advisory Board Member, Annie Cannons (http://anniecannons.com), December 2014 – 2018.

Reviewer, Journal of Applied Clinical Informatics, 2014, 2015, 2017.

Judge and Mentor, Hackea por una Causa, San Juan, PR, March 31 – April 2, 2017

UMBC Alumni Representative, Advisory Committee, PROMISE, Maryland's Alliance for Graduate Education and the Professoriate (http://promiseagep.wordpress.com), fall 2012 – 2016.

Founding Advisor, #include < girls> (http://includegirls.com), October 2013 – 2016.

Member, Steering Committee (Comité Timón) of the Faculty of Natural Sciences for Creating Certifications, UPRRP, fall 2015

- fall 2016.

Mentor, Include <a-thon>, assistive technology hackathon from #include <girls>, October 22-23, 2016. Reviewer, International Medical Informatics Association Yearbook of Medical Informatics, 2016.

Reviewer, CAHSI Summit Scholarship, August 2015. Reviewer, Journal of Intelligent and Robotic Systems, 2014.

Search Committee Member for the Director of UMBC Women's Center from 2009-2010.

Search Committee Member for two tenure track Assistant Professor positions in the Computer Science and Electrical Engineering department from 2009-2010.

Mentor, Include-a-thon, fashion show and hackathon for #include <girls>, October 3-4, 2015.

Participant, Little Fe Buildout at SIGCSE 2013, Denver, CO, and brought 12 node cluster to home campus, April 2013. Judge, Doctoral Symposium, Tapia Celebration of Diversity Conference 2013, Washington, DC, February 2013.

CURRENT PROJECTS

Multivariate Time Series Analysis

This project is a continuation of my dissertation research. In collaboration with physicians at Johns Hopkins University and my advisors at UMBC, I developed techniques for the Neonatal and Pediatric Intensive Care Units to provide clinical decision support. We created a visualization tool to assist providers in analyzing the patient's data from a multivariate perspective over time. We are currently working on developing a similarity metric that will assist physicians in predicting sepsis using Machine Learning techniques. We are also expanding the visualization. A presentation on an older version of the visualization as well as a technique for data mining multivariate time series data can be seen at https://www.youtube.com/watch?v=HFQt1aO0drg. Former Students: Heriberto Acosta Maestro, Nitza Agosto, Melissa López Serrano, Orlando Rivera, Jean Karlo Rodríguez Cartagena, Leonardo García Lebrón, Nelson Schwartz

B2G Learning Centers

This project focuses on tackling health and education inequities in marginalized communities through interdisciplinary and intersectoral computing ecosystems that are centered around the creation of Computing Learning Centers led by single women heads of households in public and assisted housing. See https://btglearningcenters.org.

The Kavita Project

The Kavita Project is focused on developing a generic, spoken, C-based programming language (Kavita) in an open-source speech recognition software, SIMON so that more people will be able to code. The framework that is being integrated into the open-source software is being referred to as SIMON CODES. The framework is being designed so that it can be crowdsourced, and people can use it with different IDEs, editors, and C-based programming languages. The project is named after Kavita Krishnaswamy, a Ph.D. student at UMBC who inspired the project. It is designed for anyone who may have limited mobility in their hands but wants to program. Another group of students started to create an interface that could interpret sign language for the programming language. The premise is that creating different modes for the program might attract even more people to code. More information about the project can be found at https://kavitaproject.blogspot.com/. The demo was presented in ASSETS 2015 in Lisbon, Portugal, and won second place out of 20 teams.

In February of 2020, the project was revived in collaboration with Dr. Keith Vertanen and his Ph.D. student Sadia Norwin of the Michigan Technical University to survey how students read code in Java, C, C++, and Python as a preliminary step in developing a voice interface for the Framework. Former Students: Jasiel Rivera, Juan Hernández, Dayanlee De Leon, Christopher Ayala, Xiomara Figueroa, Karlo Martínez, Gustavo Gratacós, Natalia Pacheco, Andrea Claudio, Rafael Esparra, Jessica Pagan, Valerie Santiago, Roxana González, José Montero.

FORMER PROJECTS

Exploring Computer Science for Puerto Rico

This project began as a collaboration with the Into the Loop Broadening Participation Alliance (BPA) when two professors attended the Exploring Computer Science Professional Development (ECS PD) workshop in the summer of 2014 to consider whether the ECS curriculum would serve as a good curriculum for Puerto Rico. The project was then established as a collaboration with the Exploring Computing Education Pathways (ECEP) BPA, which sponsored a Train the Trainer grant where we send 3 professors, 3 pre-service teachers, and 4 in-service teachers to the different ECS PD across the country in the summer of 2015. Of the teachers, four attempted to teach the course in the following academic year using the curriculum in English. It was evident that the curriculum needed to be translated so we received a second grant from ECEP to translate the grant and named the new Spanish curriculum ECS-PR and ran the first ECS-PR PD in Spanish in Puerto Rico in the summer of 2017. We received an NSF CS4All RPP grant in November of 2017 with an interdisciplinary team that works with the Graduate School of Education, the Computer Science Department in the College of Natural Sciences, and the NSF-funded Center for Mathematics and Science Education

Research at the University of Puerto Rico Río Piedras. It involved creating a collaboration with the Department of Education of Puerto Rico to create a course that would be incorporated into all the public schools in Puerto Rico. A research practitioner partnership was created to foster the integration of the Exploring Computer Science (ECS) curriculum in Spanish in the public school system of Puerto Rico, to study a rapid-response support system for cultural-linguistic equivalence of ECS curriculum in Spanish, and to pilot the implementation of ECS curricula in at least two high schools in PR with a high population of Hispanic, female, and poor students and/or students with disabilities. We have trained over 35 teachers to teach ECS-PR and 4 ECS-PR PD Spanish-speaking trainers to begin to scale the program.

Co-Researchers: Joseph Carroll Miranda, Agustín Corchado, Luis López, Edusmildo Orozco, Michelle Borrero, Milagros Bravo, Brenda Santiago, Eliud Torres

Former students: María López Delgado, Yaradzet Delgado Rivera, Gerriann J Houser De Jesús

Computer Science for All in Puerto Rico

CS4All PR is a project that aims to create and carry out a strategic plan to incorporate a high-quality and equitable computer science curriculum for all students in K-12 through collaborative impact. The project has held two CS4All Puerto Rico Summits sponsored by the Puerto Rico Information and Technology Cluster. We are joining efforts with the World Computer Exchange and the Computer Science Teachers Association Puerto Rico Chapter to establish a backbone organization for Computer Science Education (CSE) and have a collaborative impact to incorporate CSE in all the schools of PR (http://cs4allpr.org).

Collaborators: Joseph Carroll Miranda, Timothy Anderson, Mayné González, Roberto Nieves, Andrea Barrientos

World Computer Exchange Puerto Rico Chapter and Computers for Girls

I am currently on the Steering Committee of 10 and the co-coordinator for the World Computer Exchange Puerto Rico Chapter. The WCE-PR's field research revealed that upwards of 40% of the computers and networks in Puerto Rico schools do not work. Moreover, budgets and capacity are limited to repairing these computers. The WCE-PR aims to organize volunteers who can train teachers and students to install, troubleshoot, and repair technology, not only providing technology career readine ss and know-how in the community but also creating a socially and environmentally responsible movement to recycle e-waste and repair and refurbish computers that can be saved. The WCE-PR's Sustainable E-Waste Initiative will 1) repair computers in schools, 2) use them as a resource for training, and 3) take dead computers to a facility where students learn how to disassemble computers and salvage working parts. The objective is to make computers more accessible and to build self- efficacy in students and teachers regarding technology (https://worldcomputerexchange.org/puerto_rico/). Computers for Girls (C4G) is an initiative within the WCE where they are looking for and developing content for these computers that are directed at encouraging Latinxs students and teachers in computer science in Spanish (https://worldcomputerexchange.org/computers- for-girls/). I have represented the WCE in meetups around the island and helped build the relationship between WCE-PR and UPR Río Piedras, UPR Ponce, the Kinesis Foundation, and the Flamboyán Foundations.

Collaborators: Timothy Anderson (President of WCE), Agustin Corchado, Joseph Carroll Miranda

Increasing Diversity in Interdisciplinary Big Data to Knowledge (IDI-BD2K)

The Increasing Diversity in Interdisciplinary BD2K (IDI-BD2K) Project is an NIH-funded initiative that aims to increase the diversity of the BD2K scientific community by increasing the number of underrepresented researchers, both students and faculty, in Big Data Science and its applications to biomedical research. Our IDI-BD2K project presents a series of activities that attract students to the field of Biomedical Data Science, provides them with the courses and training necessary to perform Big Data research, and directs them to participate in "hands-on" Interdisciplinary Biomedical Big Data research experiences, and creates a

community of BD2K researchers at UPR Río Piedras. The IDI-BD2K program objective is to enhance student preparation and support so they continue onto graduate studies in Big Data Research and eventually enter the academic and professional community of investigators doing Biomedical Big Data research. To achieve our goals, UPR-RP has partnered with BD2K centers at Harvard University, the University of Pittsburgh, and the University of California Santa Cruz to offer summer research experiences to at least 6 of our undergraduate students per year. The program also offers opportunities for faculty to develop their research and expertise in Big Data Research through sabbaticals and workshops with the BD2K Center faculty. In addition, the development and integration of new courses, workshops, seminars, and online course modules in Big Data Science into the undergraduate curricula of the Natural Sciences College serves to expand the research infrastructure and capabilities of the UPR-RP researchers and increases the UPR-RP's contribution in the field of Big Data Science, which permeates all modern science and technology. This initiative is leading to the development of a Data Science Program at

UPRRP. I have been in charge of leading the hackathon and workshop initiatives which included **2015 Hacking Health in Puerto Rico** (http://shilac.org/), **2016 HealthCare Innovation Replicathon** (https://idi- bd2k.hpcf.upr.edu/2017/03/29/healthcare-innovation-replicathon-2017-and-data-carpentry-instructor-training/), **2018**

Meshing with Data (https://engine-4.com/event/meshing-with-data-hackathon/), **2019 IQ Hackathon**

(https://sites.google.com/a/upr.edu/iq-hackathon/), the **2020 Women in Data Science Conference** (http://widspuertorico.org/

) to increase the number of women in Data Science in Puerto Rico, and small online virtual hackathon in July 2020 due to COVID. Our final hackathon, **Latam COVID Datathon: an IDI-BD2K/ACM Celebration of Women in Computing**, https://www.latamdatathon.hpcf.upr.edu/, was held in June 2021**.**

Interdisciplinary and Quantitative Biology Research Experience for Undergraduates (IQ BIO REU)

The Interdisciplinary and Quantitative Biology Research Experience for Undergraduates (IQ BIO REU) is summer research and student development program funded by the National Science Foundation (NSF) that offers opportunities for undergraduate students from universities and colleges that lack a strong research component and those from groups that have been historically underrepresented in STEM fields. For 9 weeks, starting on the first Monday of June, ten (10) students will be immersed in a wide array of high-impact practices including participation in a mentored research project in partnership with faculty members from the College of Natural Sciences at the University of Puerto Rico-Rio Piedras Campus (UPR-RP). The program offers training and practice for fluency in quantitative skills, data analysis, and bioinformatics and myriad opportunities for career development. I oversaw creating workshops and a hackathon for the students and the public as well as helping others to develop their computational research. While I continue to collaborate with the project to do research with students, I have retired as a Principle Investigator. (http://iqbioreu.uprrp.edu/)

Sonification of Vital Sign Data

The newest project is looking at whether there is a way to represent univariate times series data through music. The work is in the beginning stages and achieved in collaboration with Dr. Carsten Skarke of the Institute of Translational Medicine and Therapeutics at the University of Pennsylvania. Former students: Lilliana Marrero, Otto Kailing, José Sanchez Curet, and Gian Rodriguez.

Healthcare Innovation Replicathon

A replicathon is a type of hackathon developed to promote the field of biomedical data science. The objective of the Replicathon is to meet the challenge. The participants are given two papers that interpret the results of one dataset in completely two different ways. The organizers provide the dataset, and the data science mentors to help the participants develop their analysis in Jupiter notebooks while mentors from industry help the participants to communicate their findings in a presentation. The winners are

judged by a team of data scientists and people from industry. This event was funded by Varmed Management Corporation, the R-25 Increasing Diversity in Interdisciplinary Big Data to Knowledge of the UPRRP, and Abartys Health.

Symposium of Health Informatics in Latin America and the Caribbean (SHILAC) and Hacking Health in the Caribbean As founder and chair of the Symposium of Health Informatics in Latin America and the Caribbean with the primary objective of identifying common health issues in LAC that may be addressed with informatics such as public health issues and highlight the importance of collaborative solutions that include a wide array of disciplines and that include decision-makers. Other objectives include showcasing the health informatics research and industry in LAC and describing the challenges and lessons learned from them and brainstorming how to bridge the gaps among disciplines to develop more collaborative and diverse research and industry teams for more efficient solutions to health informatics issues in developing countries. In SHILAC 2015 **Hacking Health in the Caribbean** was a hackathon that was incorporated into the program with the additional objective of solving healthcare problems and implementing computational and informatics solutions for developing and developed countries. The Computing Research Association funded the **Biomedical Data Science Workshop** that was held in conjunction with SHILAC to bring students from across the US to the event. Funding for the event came from over 10 companies as seen on the website. SHILAC 2013 took place in Cancun, MX, and SHILAC 2015 in San Juan, PR (http://shilac.org).

Computer Science for High Schools in Puerto Rico

This Google-sponsored project under its CS4HS program consists of offering a MOOC once a year for high school teachers of Puerto Rico, however, anyone can join. The course is designed as an outreach tool to recruit future computer science teachers of Puerto Rico and to build the self-efficacy of all teachers in computing and in how to incorporate computational thinking into their curriculum. Videos and more information about the project can be found at http://cs4hspuertorico.org/. Currently looking for funding to continue the project. From this initiative, the Computer Science Teachers' Association of Puerto Rico was born, now renamed as the CS Teachers Puerto Rico Chapter. (http://csteachers.org/puertorico).

Co-Principal Investigator: Joseph Carroll Miranda

Former Students: María López Delgado, Grace Rodríguez, Eliud Torres, Wendy Figueroa, Roxana González, Xiomara Figueroa

Anima

This project started as an interdisciplinary project to attract women into programming and resulted in becoming a one semester-long, interdisciplinary project to entice people into cleaning up the neighboring college town of Río Piedras through a video game. Students belonged to the Department of Computer Science, the School of Architecture, or the School of Communications. More information can be found at https://animariopiedras.wordpress.com/.

Former Students: Carlo Rodríguez and Roberto Feliu

Multivariate Time Series Analysis of Physiological and Clinical Data to Predict Patent Ductus Arteriosus (PDA) in Neonatal Patients and Traumatic Brain Injuries

This project was funded by the CRA-W and the CDC (Coalition for Diversity in Computing) while I was a graduate student with Marie desJardins, my advisor, and Kathryn Holmes, a physician at Johns Hopkins, as a Collaborative Research Experience for Undergraduates (CREU). I mentored and led four underrepresented students in STEM: one in computer science, another in computer engineering, and another in biology. All three helped me to design a survey with residents at Johns Hopkins Hospital to evaluate how well residents can diagnose patients with PDA using our visualization and clinical decision support tool versus the traditional visualizations. A fourth computer science student helped improve the visualization using information gained from the previous pilot. More information about the project can be found at http://creu2010-umbc.wikis.org.

Former Students: Michael Lombardi, Erica George, Chris Mai, Ima Udofa, and Ofek Lev.

I also mentored a second group in vital signs data mining for my advisor, Tim Oates in collaboration with Tom Armstrong of Wheaton College and his students, Sedra Davis and Amanda D'Adamo. The website of the collaboration can be found at https://vitalsignsdatamining.wordpress.com.

Former Students: Laura Anzaldi and Amanda Hartman

Context-Aware Surgical Training (CAST)

CAST was developed to create an environment where pervasive technologies, agent technologies, Semantic Web ontologies, logic reasoning, security and privacy policies, and RFID (radio frequency identifier) technology were being developed to extend the capabilities of the MASTRI Center, a surgical training facility located at the University of Maryland Medical School under the guidance of Dr. Anupam Joshi and Dr. Tim Finin. The project was in its development stage when I was a part of it, thus my contribution to the project consisted of creating a web application for a surgical training curriculum through which residents could train in the MASTRI center on their own time and the application would keep a log of where they were in their training. Former collaborator: Palani Kodeswaran

Traumapod

In this project, I worked as part of the eBiquity lab in collaboration with DARPA, SRI, the University of Maryland Medical School, and several other universities to develop a prototype for an unmanned medical treatment vessel that will provide life-saving surgical and medical care to soldiers on the battlefield immediately after trauma and during transport. Other partners are developing robotics that will allow a surgeon to operate on a soldier in the trauma pod remotely. eBiquity's major role in the project was to create and maintain the Resource Management Subsystem which monitors all the messages that are passed between the subsystems to track the inventory of supplies and tools. We were also responsible for Emergency Medical Record in the project which is an electronic medical record that maintains a time-stamped log of the events in the Trauma Pod for a procedure. My role in the project was to improve the GUI interface, improve the system's capacity to handle the number of messages it receives efficiently, and serve as the liaison between SRI and UMBC to coordinate and perform the testing. eBiquity's role in the project ended on March 29, 2007.

Former collaborators: Palani Kodeswaran and Sheetal Agarwal

IBM's Chemical Search Engine

When I worked in an internship at IBM Almaden Research Center in San Jose, CA in the summer of 2006, I worked with a team of professionals on the IBM Chemical Search Engine. The search engine performs a molecular similarity search for patents and Medline articles and queries for associated metadata by cross-referencing the resultant data. My research consisted of creating two interactive visualizations of the resultant data after a query. Previously, the visualization consisted of a single, complex table from which it was difficult to extract information. I constructed two views rather than clutter all the information into a single graph using the interactive visualization toolkit, Prefuse. The Graph View, on the left, emphasizes the relationships between patents and compounds, such as which patents name more than one compound. The Tree View, on the right, allows the user to focus on the data for a single compound. A paper on this work was published in the proceedings of the Pacific Symposium on Biocomputing 2002. My contribution to the paper was the generation and analysis of the experimental results. The visualizations were supposed to become a part of the web interface, but because of Prefuse and IBM licensing conflicts, it was not possible. Both visualizations were interactive.

CURRICULUM VITAE

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EDUCATION

- **Doctor of Philosophy** in Industrial Engineering **01/1998-05/2001**
  School of Industrial Engineering, Purdue University, West Lafayette, IN
- **Master of Science** in Industrial Engineering **08/1996-12/1997**
- School of Industrial **Engineering**, Purdue University, West Lafayette, IN
- **Bachelor of Science** in Industrial Engineering **10/1992-06/1996**
  School of Industrial Engineering Technical University of Istanbul, Istanbul, Turkey

EXPERIENCE IN HIGHER EDUCATION

- **05/2012-present:** Adjunct Associate Professor, Department of Anesthesiology, School of Medicine, The Johns Hopkins University
- **05/2012-present:** Visiting Associate Professor, The Armstrong Institute of Patient Safety and Quality, School of Medicine, The Johns Hopkins University
- **07/2008-present:** Department of Information Systems, UMBC, Associate Professor with Permanent Tenure
- **08/2002-07/2008:** Department of Information Systems, UMBC, Assistant Professor
- **08/2001-05/2002:** School of Industrial Engineering, Purdue University, Visiting Assistant Professor

TEACHING EXPERIENCE

Department of Information Systems, UMBC

- **MGMT 210:** *The Practice of Management,* Spring 2024, Spring 2025.
- **MGMT 489***: Seminar in Management in Business,* Fall 2020-Spring 2024.
- **IS 804:** *Advanced Experimental Design Methodologies*, Spring 2012, Spring 2013, Spring 2014.
- **IS 101/IS 101Y:** *Introduction to Computer-Based Systems,* Spring 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017.
- **IS 101 for SUCCESS Students:** Spring 2014, Spring 2015, Fall 2015.
- **IS 671:** *Electronic Commerce (Online)*, ***Newly Developed Course***, Spring 2003, Spring 2004, Spring 2005, Spring 2006, Spring 2007, Spring 2008, Spring 2009, Spring 2010, Fall 2011-Fall 2023.
- **HCC 810:** HCC Graduate Seminar, Fall 2013, Spring 2013, Fall 2014, Spring 2015.

- **IS 731:** *Electronic Commerce*, Fall 2002, Fall 2003, Fall 2004, Fall 2006, Fall 2008, Fall 2009, Spring 2015-Spring 2024
- .
- **IS 101H:** *Introduction to Computer-Based Systems Honors Course*, Fall 2005, Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009
- **IS 201:** *Introduction to Computer-Based Systems*, Spring 2004, Fall 2004
- **IS 474:** *Legal Aspects of Information Systems*, Spring 2003, Fall 2003
- **IS 700:** IS Graduate Independent Study, Fall 2004-Fall 2011
- **IS 799:** Graduate Master's Research Study, Spring 2011
- **IS 801:** *Doctoral Independent Study*, Fall 2002-Fall 2011
- **IS 898:** Graduate Doctoral Study, Spring 2004-Fall 2011
- **IS 899:** *Graduate Doctoral Study*, Spring 2004-Fall 2011
- **IS 400:** *Undergraduate Independent Study*, Spring 2004

Department of Industrial Engineering, Purdue University

- **IE 230:** *Probability and Statistics in Engineering I*, Fall 2001
- **IE 330:** *Probability and Statistics in Engineering II*, Fall 2001, Spring 2002
- **IE 343:** *Engineering Economics*, Spring 2002

HONORS AND AWARDS RECEIVED

- **2003:** UMBC Department of Information Systems Summer Faculty Fellowship.
- **2000:** The Purdue Research Foundation Summer Scholarship (05/00-08/00).
- **08/1996-12/1997:** NATO Scholarship through the Scientific and Technical Research Council of Turkey ($36,260 total).
- **03/1990:** Ranked Number 1 in German Reading Competition among German High Schools in Turkey

RESEARCH SUPPORT

- Institute of Health, $99,999, 2 years, submitted February 16, 2024, under review.
- **2013-2015:** EMERGE Project: Improving Patient Involvement and Caregiver Workflows through Mobile Technologies in Intensive Care Units, $16,032 direct cost, $22,332 total cost for 1 year, funded, UMBC PI.
- **2012-2013:** Medication Co-Package Comprehension and Usability Study. Sanofi Aventis Corporation, $320,000 total cost for 1 year, $22,332 UMBC cost, Funded, UMBC PI.
- **2004-2008:** RES: Investigating Gender-Based Differences in Perception and Use of I.T. as Factors in I.T. Career Choice, $439,049 direct cost, $539,385 total cost for 3 years, *National Science Foundation,* Award # 0429084, Funded, Co-PI.
- **2004-2008:** Graduate Assistance in Areas of National Need Fellowship Program, $622,665 direct and total costs for 3 years, *United States Department of Education,* Award # P200A040089, Funded, Co-PI.
- **2006-2010:** Exploring User Acceptance Issues Concerning a Proposed Automated Medication Management System in Assisted Living Homes, $12,500 direct cost, $12,500 total cost for 1 year, *Erickson Retirement Communities,* Funded, PI.
- **2006-2009:** MRI: Acquisition of Equipment to Establish a Research Infrastructure to Support HCI and UA Research, $245,600 direct cost, $275,000 total cost for 3 years, *National Science Foundation,* Award # 0619379, Funded, Co-PI.

- **2006:** Human-Centered Computing: Defining A Research Agenda September 2006- NSF Arlington, VA, $47,200 total cost, *National Science Foundation,* Award # 0642332, Funded, Co-PI.
- **2004:** MyUMBC Security: Cognitive Technology Development and Deployment Project, $13,636 direct cost, $15,000 total cost, *TEDCO-Maryland Technology Corporation,* Funded, Co-PI.

CONSULTING WORK (within UMBC)

- Senior Personnel, The State of Maryland Judiciary Web Site Overhaul Project (2010). Duties included designing the experiment to evaluate both new and old site designs, managing the evaluation and iterative design processes.
- Senior Personnel, National Science Foundation Research Experience for Undergraduates Project (2003, 2004). Duties included mentoring three undergraduate students for human-computer interaction and usability research.

PRODUCTION OF GUIDELINES AND PROTOCOLS

- **National Institutes of Standards and Technology (NIST) (2013):** Expert consultancy on development of standards and a human factors engineering framework for integrating health information technology and clinical workflow.
- The Personal Health Records Survey inserted to the PsycTest International Tool Database of the **American Psychology Association (APA).**

PUBLICATIONS

Articles in Refereed Journals/Conferences:

- Ozok, A. A. (2024): Artificial Intelligence for Older Adults: A Literature Survey on AI as an Aid for Independent Living. Proceedings of the Human Factors and Ergonomics Society International Symposium on Human Factors and Ergonomics in Health Care, Toronto, ON, Canada, March 30-April 2, 2025, accepted for publication.
- Ozok, A. A., Menghani, S. (2024): Using Wearable Technologies in Resilient Independent Care of Older Adults. Proceedings of the Human Factors and Ergonomics Society International Symposium on Human Factors and Ergonomics in Health Care, Chicago, IL, March 24-27, 2004.
- Parker, A. M., Nelliot, A., Chessare, C. M., Malik, A. M., Koneru, M., Hosey, M. M., Ozok, A. A., Lyons, K. D., Needham, D. M. (2020): Usability and Acceptability of a Mobile Application Prototype for a Combined Behavioral Activation and Physical Rehabilitation Intervention in Acute Respiratory Failure Survivors. *Australian Critical Care*, 33(6), pp. 511-517.
- Ozok, A. A., Wu, H., Gurses, A. P. (2017): Exploring Patients' Use Intention of Personal Health Record Systems: Implications for Design. *International Journal of Human Computer Interaction,* Vol. 33(4), pp. 265-279.
- Easley, W., Kuber, R., Ozok, A. A. (2015): An Empirical Study Examining Medication Management among Individuals with Visual Impairments. Universal Access in the Information Society Journal. Online.
- Ozok, A. A., Wu, H., Garrido, M., Pronovost, P., Gurses, A. P. (2014): Usability and Perceived Usefulness of Personal Health Records for Preventive Health Care: Patients' and

Primary Care Providers' Perspectives. *Applied Ergonomics 45, 613-628*. **Finalist of Top 12 Papers for 2014.**

- Holden, R. Carayon, P., Gurses, A. P., Hoonakker, P., Hundt, A. S., Ozok, A. A. and Rivera-Rodriguez, J. (2013). SEIPS 2.0: a human factors framework for studying and improving the work of healthcare professionals and patients. *Ergonomics,* 56(11), 1669-1686.
- Gurses, A. P., Ozok, A. A., Pronovost, P. (2012): Time to Accelerate Integration of Human Factors and Ergonomics in Patient Safety. *BMJ Quality and Safety,* Vol. 21, pp.347-351. **Editor's Choice.**
- Ozok, A. A. and Wei, J. (2010): An Empirical Comparison of Consumer Usability Preferences in Online Shopping Using Stationary and Mobile Devices. *Electronic Commerce Research,* Vol. 10(2), pp. 112-137.
- Feng, J., Lazar, J., Kumin, L. and Ozok, A. A. (2010): Computer Usage by Children with Down Syndrome: Challenges and Solutions. *Transactions on Accessible Computing,* Vol. 2(3), pp. 13:1-13:40.
- Ozok, A. A. Fan, Q. and Norcio, A. (2010): Design Guidelines for Effective Recommender System Interfaces Based on a Usability Criteria Conceptual Model. *Behaviour and Information Technology,* Vol. 29(1), pp. 57-83.
- Gurses, A. P., Marsteller, J. A., Ozok, A. A., Xiao, Y. and Pronovost, P. J. (2010). Using an Interdisciplinary Approach to Identify Factors that Affect Clinicians' Compliance with Evidence-Based Guidelines. *Critical Care Medicine,* Vol. 38(8), pp. S282-S291.
- Ozok, A. A. and Komlodi, A. (2009): Better in 3-D? An Empirical Investigation of User Preferences Concerning 2-Dimensional and 3-Dimensional Product Representations in Business-to-Consumer E-Commerce. *International Journal of Human Computer Interaction,* Vol. 25(4), pp. 243-281.
- Wu, H., Ozok, A. A. and Gurses, A. P. (2009): User Aspects of Electronic and Mobile Government: Results from a Review of Current Research. *Electronic Government: An International Journal,* Vol. 6(3), pp.233-251.
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- Lightner, N., Yenisey, M. M., Ozok, A. A. and Salvendy, G. (2002): Shopping Behavior and Preferences in E-commerce of Turkish and American University Students: Implications from Cross-Cultural Design, *Behaviour and Information Technology,* Vol. 21(6), pp. 373-385.
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- Ozok, A. A. and Salvendy, G. (2000): Measuring Consistency of Web Page Design and Its Effects on Performance and Satisfaction. *Ergonomics*, Vol. 43(4), pp. 443-460.

Articles in Refereed Conference Proceedings:

- Richards, T. and Ozok, A. A. (2017). Trust Building Privacy Preferences for Young Adults Visiting Political Campaign Websites. *Proceedings of AHFE 8th International Conference on Applied Human Factors and Ergonomics,* July 17-21, 2017, Los Angeles, CA.
- Grice, R., Miller, M. and Ozok, A. A. (2015). The Role of Technology in Home-Based Medication Adherence for Preventive Cardiac Self-Care: A Human Factors and Usability Perspective. *Proceedings of the Human Factors and Ergonomics Society Human Factors and Ergonomics in Health Care: Improving the Outcomes Conference, Baltimore, MD, April 26-29*, 2015.
- Ozok, A. A., Patel, A., Wu, H. and Gurses, A. P. (2011). Medication Adherence among Community-Dwelling Older Adults: Current Practices and Potential Technology Solutions. *Proceedings of the 55th Annual Meeting of the Human Factors and Ergonomics Society*, September 19-23, 2011, Las Vegas, NV, pp. 316-320.
- Douglas, D. and Ozok, A. A. (2011). Evaluating the Experience of Health Professionals during the Transition from Paper to Electronic Charting. *Proceedings of the 55th Annual Meeting of the Human Factors and Ergonomics Society*, September 19-23, 2011, Las Vegas, NV, pp. 655-659.
- Patel, A., Ozok, A. A. (2011): Exploring Training Issues in Healthcare: Towards Identifying Barriers to Increase Electronic Medical Records Adoption by Healthcare Professionals. *Proceedings of USAB 2011 Conference on Information Quality in eHealth,* November 25-26 2011, *Graz, Austria,* pp. 657-671.
- Ozok, A. A., Gurses, A. P., Wu, H., Nelson, M., Moen, D. and Wei, J. (2009): Usability and User Acceptance for Personal Health Records: A Perspective from Healthcare Citizens. *Proceedings of the Third International Conference on Online Communities and Social Computing, OCSC 2009 Held as Part of HCI International 2009 San Diego, CA, USA, July 2009,* pp. 690-699.

- Wu, H. and Ozok, A. A. (2009): Medication Adherence among the Elderly and Technology Aids: Results from an Online Survey Study. *Proceedings of the Third International Conference on Online Communities and Social Computing, OCSC 2009 Held as Part of HCI International 2009 San Diego, CA, USA, July 2009,* pp. 719-728.
- Feng, J., Lazar, J., Kumin, L. and Ozok, A. A. (2008): Computer Usage by Young Individuals with Down Syndrome. Proceedings of ASSETS 2008, the Tenth International ACM SIGACCESS Conference on Computers and Accessibility, Halifax, Canada, October 13-15, 2008, pp. 35-41. **Recipient of Best Paper Award.**
- Ozok, A. A. and Wei, J. (2008): SMS Use among American Students: A Human Factors Perspective. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Wu, H. and Ozok, A. A. (2008): Cross-Cultural User Interface Design for Mobile Phones: A Literature Survey. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Gurses, A. P. and Ozok, A. A. (2008): Medication Management for the Elderly: A Human Factors Perspective. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Breitenstein, M. K., Gurses, A. P., Billman, G. F. and Ozok, A. A. (2008): Smart IV Pump Technology from the User's Perspective: Pediatric Nurses' Perceptions and Experiences. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Loho-Noya, M., Wei, J. and Ozok, A. A. (2008): Humans as a Source of Threat to Information Security in Airline E-Ticketing. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Quyin, F., Ozok, A. A., and Norcio, A. F. (2008): User Preferences of E-Commerce Recommender System User Interfaces Based on a Usability Criteria Model. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Getek, R. C. and Ozok, A. A. (2008): Designing for Accessibility for Web Content and Software Applications. *Proceedings of AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics,* on CD-ROM.
- Ozok, A. A. and Komlodi, A. (2007): Do Looks *Really* Matter? The Effect of 3-Dimensional Product Representations on the Customers' Buying Decision in Electronic Commerce. *The Human Factors and Ergonomics Society 51st Annual Meeting, Baltimore, MD, October 1-5 2007,* pp. 1050-1052.
- Gurzick, D., Ozok, A. A. and Morris, B. (2007): Social Technology and Baby Boomers: Current Use and Future Expectations. *AMCIS 2007 America's Conference on Information Systems, Keystone, CO, August 9-12,* in press.
- Weathers, J., Wei, J. and Ozok, A. A. (2006): A Teaching Case Study on Customer-E-Chain. *Proceedings of ISECON the 23rd Information Systems Education Conference, Dallas, TX, November 2-5,* on CD-ROM.
- Tari, F., Ozok, A., and Holden, S. (2006): A Comparison of Perceived and Real Shoulder-Surfing Risks between Alphanumeric and Graphical Passwords. *Proceedings of SOUPS 2006 Symposium on Usable Privacy and Security,* on CD-ROM.

- Ozok, A. A., Oldenburger, K., and Salvendy G. (2005): Relationships between Consistency of CRM and User Preferences in E-Commerce. Managing Modern Organizations with Information Technology, as Part of Proceedings of the 2005 Information Resources Management Conference, May 15-18, San Diego, CA, pp. 363-365.
- Abras, C., Ozok, A. A., and Preece, J. (2005): Discovering the Sociability Needs of Two Types of Discussion Board Communities. Managing Modern Organizations with Information Technology, as Part of Proceedings of the 2005 Information Resources Management Conference, May 15-18, San Diego, CA, pp. 595-598.
- Ozok, A. A. and Wei, J. (2005): An Empirical Study on User-Perceived Differences between Mobile and Electronic Commerce. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Ozok, A. A. and Wei, J. (2005): Perceived Differences between Mobile and Electronic Commerce: The Community and User Perspectives. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Carlin, M. and Ozok, A. A. (2005): Community Aspects in Electronic and Mobile Commerce: A Preliminary Study of American and Chinese Cultures. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Buyukozkan, G. and Ozok, A. A. (2005): An Analytic Approach to Analyze the User Requirements for Mobile Commerce. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Buyukozkan, G. and Ozok, A. A. (2005): The Impact of Short Messaging Systems on Building Online Communities: Comparative Study of Turkish and American Cultures. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Vyas, A., Ozok, A. A. (2005): On Usability of Multi-Agent Systems in the M-Commerce Environment. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Zenebe, A., Ozok, A. A., and Norcio, A. (2005): Personalized Recommender Systems in E-Commerce and M-Commerce: A Comparative Study. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
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- Wei, J. and Ozok, A. A. (2005): A Comparison Study on E-Commerce and M-Commerce Security Attributes. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Vyas, A. and Ozok, A. A. (2005): Intelligent Human-Agent Interaction: Attributes that Need to be Honored. *Proceedings of HCII 2005, The 11th International Conference on Human-Computer Interaction,* on CD-ROM.
- Goodall, J. R., Ozok, A. A., Lutters, W. G., Rheingans, P., and Komlodi, A. (2005): A User-Centered Approach to Visualizing Network Traffic for Intrusion Detection. Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI), ACM Press, pp. 1403-1406.
- Ozok, A. A. and Wei, J. (2004): User Perspectives of Mobile and Electronic Commerce with a Usability Emphasis. Proceedings of the ISOneWorld 2004 Conference, Las Vegas, NE, Article 71.

- Wei, J., and Ozok, A. A. (2004): Development of a Methodology for Mobile Commerce Security Analysis. Proceedings of the ISOneWorld 2004 Conference, Las Vegas, NE, Article 72.
- Ozok, A.A., Salvendy, G. and Oldenburger, K. (2003): How to Treat Your Customers: Guidelines for Consistency in E-Commerce. Proceedings of HCII 2003, The 10th *International Conference on Human-Computer Interaction, Lawrence Erlbaum Associates, Mahwah, NJ,* Vol. 2, pp. 1288-1292.
- Ozok, A. A. (2003): Cell Phone vs. Computer: A Comparison of Electronic Commerce and Mobile Commerce from the User's Perspective. *Proceedings of HCII 2003, The 10th International Conference on Human-Computer Interaction, Lawrence Erlbaum Associates, Mahwah, NJ,* Vol. 2, pp. 1283-1287.

Special Reports:

- Lowry, S. Z., Ramaiah, M., Patterson, E. M., Brick, D., Gurses, A. P., Ozok, A., Simmons, D. and Gibbons, M. C. (2014): Integrating Electronic Health Records into Clinical Workflow: An Application of Human Factors Modeling Methods to Ambulatory Care. *The National Institute of Standards and Technology Interagency/Internal Report (NISTIR 7988).* http://nvlpubs.nist.gov/nistpubs/ir/2014/NIST.IR.7988.pdf
- Lowry, S. Z., Ramaiah, M., Ozok, A. A., Gurses, A. P., Gibbons, M. C., Brick, D., Patterson, E. S., Lewis, V. R. and Simmons, D. (2013): NISTIR 7952: Toward a Shared Approach for Ensuring Patient Safety with Enhanced Workflow Design for Electronic Health Records. *The National Institute of Standards and Technology Interagency/Internal Report (NISTIR 7952).* http://www.nist.gov/manuscript-publication-search.cfm?pub_id=914226
- Sears, A., Lazar, J. Ozok, A., & Meiselwitz, G. (2008): Human-centered computing: Defining a Research Agenda. *International Journal of Human-Computer Interaction* Vol. 24 (1), pp. 2–16.
- Sears, A., Lazar, J. Ozok, A., & Meiselwitz, G. (2008). Defining a Research Agenda for Human-Centered Computing. *Human Factors and Ergonomics Society Bulletin,* Vol. 51 (2), pp. 5-7.
- Sears, A., Lazar, J. Ozok, A., & Meiselwitz, G. (2008). Defining a Research Agenda for Human-Centered Computing. *ASIS&T Bulletin,* April/May 2008, available online at: http://www.asis.org/Bulletin/Apr-08/AprMay08_Sears_Lazar_Ozok_Meiselwitz.html.

Conference Extended Abstract:

- Hou, W., Kaur, M., Komlodi, A., Lutters, W., G., Boot, L., Cotten, S. R., Morrell, C., Ozok, A. A. and Tufekci, Z., (2006). "Girls Don't Waste Time": Pre-Adolescent Attitudes toward ICT. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI), ACM Press,* 2006, Montréal, Canada, pp. 875-880.

Book Chapters:

- Zaphiris, P. and Ozok, A. A. (2012): Human Factors in Online Communities and Social Computing. Handbook of Human Factors and Ergonomics 3rd Edition, Salvendy, G. (Ed.), John Wiley & Sons, Hoboken, NJ, pp. 1237-1249.
- Marsteller J. A., Gurses, A. P., Hsu, Y., Ozok, A. A. and Pronovost, P. J (2012): Effecting Behavior Change among Clinicians. In: *Changing Health Behaviors in Populations.* Kahan, S., Gielen, A. and Fagan, P. (Eds): Johns Hopkins University. Press, Baltimore, MD, 2012.

- Joshi, K. P., Yesha, Y., Ozok, A. A., Yesha, Y., Lahane, A., Kalva, H., Agarwal, A. and Furht, B. (2010): User Centric Smart Services on the Cloud. *IBM Lecture Notes in Computer Science: Smart Internet*, Accepted.
- Ozok, A. A. (2009) (reprint): Survey Design and Implementation in Human Computer Interaction. *Human-Computer Interaction: Development Process* by Jacko, J. and Sears, A. (Eds.), Lawrence Erlbaum Associates, Mahwah, NJ, pp. 253-271.
- Ozok, A. A. (2007): Survey Design and Implementation in Human Computer Interaction. *The Human-Computer Interaction Handbook Second Edition* by Jacko, J. and Sears, A. (Eds.), Lawrence Erlbaum Associates, Mahwah, NJ, pp. 1151-1169.

Other Publications:

- Ozok, A. A. and Zaphiris, P. (2013): Proceedings of the Fourth International Conference on Online Communities and Social Computing, Las Vegas, NV, July 2013. Berlin, Germany: Springer (LNCS 8029).
- Ozok, A. A. and Zaphiris, P. (2011): Proceedings of the Fourth International Conference on Online Communities and Social Computing, Orlando, FL, USA, July 2011. Berlin, Germany: Springer (LNCS 6778).
- Ozok, A. A. and Zaphiris, P. (2009): Proceedings of the Third International Conference on Online Communities and Social Computing, San Diego, CA, USA, July 2009. Berlin, Germany: Springer (LNCS 5621).
- Ozok, A. A. (2008): Book Review: Jonathan Lazar (2006): Web Usability: A User-Centered Design Approach. Boston: Addison-Wesley. *International Journal of Human-Computer Interaction,* Vol. 24(6), pp. 616-618.
- Ozok, A. A. (2004): Book Review: John M. Carroll (2003): HCI Models, Theories, and Frameworks: Towards a Multidisciplinary Science. San Francisco: Morgan Kaufmann. *International Journal of Human-Computer Interaction,* Vol. 17(2), pp. 289-290.

ARTICLES UNDER REVIEW AND IN PREPARATION

- Ozok, A. A. Using Wearable Technologies as Resilient Health Tools in Independent Care of Older Adults. In writing state, to be submitted in 2024.
- Ozok, A. A. and Gurses, A. P. Medication Adherence among the Elderly Population Living Independently and Prospects for Technology Interventions to Improve Adherence. In writing stage.
- Ozok, A. A. Interface Consistency over Four Decades: A Literature-Based Study of Its Evolving Definition, Role, and Importance. In writing stage.
- Ozok, A. A. and Gurses, A. P. A Human Factors Conceptual Framework and Research Agenda to Improve Medication Adherence among the Elderly. In writing stage.

PROFESSIONAL ACTIVITIES

Conference Co-Chair:

- Co-Chair of the Board, the 5th International Conference on Online Communities and Social Computing in the Context of HCI 2013, the 15th International Conference on Human-Computer Interaction, 21-26 July 2013, Las Vegas, NV.
- Co-Chair of the Board, the 4th International Conference on Online Communities and Social Computing in the Context of HCI 2011, the 14th International Conference on Human-Computer Interaction, 9-14 July 2011, Orlando, FL.

- Co-Chair of the Board, the 3rd International Conference on Online Communities and Social Computing in the Context of HCI 2009, the 13th International Conference on Human-Computer Interaction, 19-24 July 2009, San Diego, CA.

Panels Organized and Chaired:

- Organizer and Chair, Chair, HCII 2009, the 13th International Conference on Human-Computer Interaction, San Diego, CA, July 2009.
  Panel Name: Empirical Usability Testing Methods in Various Domains.
- Panel Chair, HFES 2008, the Human Factors and Ergonomics Society 52nd Annual Meeting, New York, New York, September 2008.
  Panel Name: HCI-Health Information Technologies and Human Factors
- Organizer and Chair, AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2008.
  Panel Name: From Mobile Phones to Medical Devices: Cognitive Ergonomics at Work in Our Daily Lives
- Co-Chair, AHFEI 2008, the 2nd International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2008.
  Panel Name: User Research and Usability Evaluation
- Organizer and Chair, HCII 2005, the 11th International Conference on Human-Computer Interaction, Las Vegas, NE, June 2005.
  Panel Name: Explicit Comparisons of Mobile and E-Commerce from the User's Perspective
- Organizer and Chair, HCII 2005, the 11th International Conference on Human-Computer Interaction, Las Vegas, NV, June 2005.
  Panel Name: Mobile Communities and Their Place in the Online World: The User's Perspective
- Chair, ISOneWorld 2004 International Conference, Las Vegas, NE, April 2004.
  Panel Name: Mobile Agents
- Organizer and Chair, HCII 2003, the 10th International Conference on Human-Computer Interaction, Crete, Greece, June 2003.
  Panel Name: The Future of Mobile and E-Commerce: Applications, Cooperation, and Cultural Issues
- Chair, HCII 2003, the 10th International Conference on Human-Computer Interaction, Crete, Greece, June 2003.
  Panel Name: Electronic Commerce
- Member, Program Committee, IRMA 2005, Information Resources Management Association 16th International Conference, San Diego, CA, May 2005.
- Member, Program Committee, Association for Information Systems Special Interest Group on Human – Computer Interaction.

Invited Talks:

- The ECRI Institute, Risk Management Spring Series Workshop, Philadelphia, PA, April 8-9th, 2014.
- EMERGE Project: Improving Patient Involvement and Caregiver Workflows through Mobile Technologies in Intensive Care Units; Technology Interventions to Improve Medication Adherence among Older Adults. *Distinguished Speaker Series, University College London Interactive Centre*, *Department of Psychology and Department of Computer Science,* London, England, January 14th, 2014.

- Human Factors and Human Computer Interaction in Health Care. *Department of Biomedical Engineering, Johns Hopkins University*, Baltimore, MD, October 29th, 2013.
- Identifying and Addressing Challenges Surrounding the Management of Technology in the Home. *The AAMI FDA Joint Summit on Healthcare Technology Used in Non-Clinical Settings*, Marriott Dulles, Washington, DC, October 9-10th, 2013.
- Improving Patient Safety through Human Factors and Ergonomics Biannual Workshop, Johns Hopkins University Armstrong Institute of Patient Safety and Quality, Baltimore, MD, September 25-26th, 2013.
- Human Factors, Human-Computer Interaction and Patient Safety: *JHPIEGO Corporation/Johns Hopkins University Department of Biomedical Engineering*, July 17th, 2013.
- Technology Interventions to Improve Medication Adherence among Older Adults. *MedStar,* Washington, DC, February 8th, 2013.
- Improving Patient Safety through Human Factors and Ergonomics Biannual Workshop, Johns Hopkins University Armstrong Institute of Patient Safety and Quality, May 14-15th, 2012.
- Improving Patient Safety through Human Factors and Ergonomics Biannual Workshop, Johns Hopkins University Armstrong Institute of Patient Safety and Quality, November 12-13th, 2012.
- Technology Interventions to Improve Medication Adherence among Older Adults. *The Johns Hopkins University Medical Informatics Grand Rounds Speaker Series*, April 20th, 2012.
- Technology for the Elderly: A Life Improver or a Nuisance? Results from Two Case Studies Concerning Medication Management and Social Media Use. *The 2012 Symposium on Human Factors and Ergonomics in Health Care: Bridging the Gap.* Baltimore, MD, USA, March 12-14, 2012.
- Cognitive Ergonomics: An Illustrative Case Study. *The 4th National Ergonomics Conference*, Istanbul, Turkey, December 25-27, 2005.
- Perceived Security Issues in Online Shopping Behavior, *American Psychology Association 111th Annual Convention,* Toronto, Canada, August 2003.

Other Professional Presentations:

- On-Line Shopping Preferences of University Students: An Empirical Analysis of Two Cultures, *Istanbul 2003 EURO/INFORMS Joint International Meeting,* Istanbul, Turkey, June 2003.
- A Cross-Cultural Comparison of On-Line Shopping Behavior of Turkish and American Young Populations. *The CHI 2003 Conference on Human Factors in Computing Systems.* Workshop Name: Supporting Intercultural Computer-Mediated Discourse: Methods, Models, and Architectures Workshop, Ft. Lauderdale, FL, April 2003.
- Guidelines for Design and Measurement of Interface Consistency on the Web, *Human Factors and Ergonomics Society 46th Annual Meeting,* Baltimore, MD, October 2002.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

- Reviewer and Editorial Board Member, International Journal of Human Computer Interaction, 2010-2024.

- Reviewer and Editorial Board Member, Applied Ergonomics, 2020-present
- Reviewer and Editorial Board Member, International Journal of Mobile Communications, 2011-present.
- Reviewer, International Journal of Human Computer Studies.
- Reviewer, International Journal of Electronic Finance
- Reviewer, Computers in Human Behavior
- Reviewer, Behavior and Information Technology

OTHER PROFESSIONAL AFFILIATIONS

- **05/2002-06/2002:** Post-Doctoral Research Assistant, School of Industrial Engineering, Purdue University (Duties included design and set-up of the Web page for the Afghan Ministry of Higher Education for the purposes of promoting and improving the Afghan Higher Education System, and setting up and testing the Hewlett-Packard printer troubleshooting Web page for a specific Hewlett-Packard high-end printer product).
- **01/2001-08/2001:** Technical Assistant to the Head of the School, School of Industrial Engineering, Purdue University (Head of the project team for a complete re-modeling and re-design of the department web site).

SHIMEI PAN

CURRICULUM VITAE

Education

Ph.D.	2002	Columbia University, Computer Science
M. Phil.	1998	Columbia University, Computer Science
B. Sc.	1991	Tsinghua University, Computer Science

Experience in Higher Education

2020-now	UMBC, *Associate Professor*, Information Systems
2022-2023	Heidelberg University (Germany), *Co-instructor*, Computational Linguistics
2020-2021	UMBC, *graduate program director (GPD)*, Information Systems.
2019-2020	UMBC, *Interim graduate program director (GPD),* Health Information Technology.
2014-2020	UMBC, *Assistant Professor*, Information Systems

Experience in Other than Higher Education

2022-2023	Heidelberg Institute for Theoretical Studies (Germany), *visiting scientist*
2002-2014	IBM Watson Research Center, *Research Scientist*
1998	AT&T Research, *Research Intern*
1997	AT&T Research, *Research Intern*

Honors Received

2024	Best Work-In-Progress Paper, ACM International Conference on Information Technology for Social Good
2024	Best Paper Nomination, ACM International Conference on Multimodal Interaction (ICMI)
2022	Fulbright Scholar Award
2017	IBM Faculty Award
2017	Best Student Paper Award, IEEE ICTAI.
2016	C.V. Ramamoorthy Best Paper Award, IEEE ICTAI.
2015	Best Paper Runner-up, ACM International Conference on Intelligent User Interfaces (IUI)
2015	TCL Faculty Research Award
2013	IBM Invention Achievement Award

2012 IBM Invention Achievement Award

2009 Best Paper Honorable Mention, ACM International Conference on Information and Knowledge Management (CIKM)

2008 IBM Research Division Award,

2006 IBM Invention Achievement Award

2005 IBM Outstanding Innovation Award

2004 IBM Invention Achievement Award

1999 Most Influential EMNLP Papers in 1999 (based on number of citations)

Research Support

External Funding:

2024-2026 "Caselet: Deliberate Practice with Scalable Case-based Learning to Enhance Data Science Problem Solving Competency", **NSF**, $365,905, Co-PI

2024-2025 "Caselet: an online self-paced practice tool for data science problem solving", **DARPA**, $50,000, Co-PI.

2022-2023 "*An AI-based Method to Assess and Monitor the Cognitive Functions in Persons with Dementia,"* **UMB ICTR,** $35,000, PI.

2022-2023 "*Cross-cultural Analysis of Social Biases with Large Transformer Language Models*", **Fulbright Scholarship, €**23,050 (Euros), PI.

2021-2022 "*Caselet+: Inclusive Data Science Problem Solving Skills Building at Scale*," **Academic Data Science Alliance and Hopewell Fund**, $19,169, Co-PI.

2020-2022 *HBCU-UP Broadening Participation Research Center*, **NSF,** $ 2,400,000, Consultant.

2020-2021 "*RAPID: Influences of the Coronavirus (COVID-19) Outbreak on Racial Discrimination, Identity Development and Socialization"*, **NSF**, $125,438, Co-PI.

2019-2022 "*MRI: Acquisition of a Heterogeneous GPU Cluster to Facilitate Deep Learning Research at UMBC*", **NSF**, $604,398, Senior Personnel.

2019-2021 "*Fairness for the Allocation of Healthcare Resources*", **NSF**, $297,928, Co-PI**.**

2019-2020 *"Workshop on Including Ethics in Data Science Pedagogy",* **NSF**, $50,000, PI**.**

2019-2020 "*Graduate Student Consortium at the ACM International Conference on Intelligent User Interfaces*", **NSF**, $19,083, PI.

2018-2020 "*Differential Fairness for Artificial Intelligence and Machine Learning Systems: Unbiased Decisions with Biased Data*", **NIST**, $101,402, Co-PI.

2017-2018 "*Using Neural Semantic Embedding to Retrieve Similar Text",* Faculty Award, **IBM**, $5,000, PI.

2016-2020 *"Data, Tools and Systems for Automated Information Extraction and Knowledge Management for Cybersecurity"*, Accelerated Cognitive Cybersecurity Lab, **IBM**, **$**1,000,000, Co-PI.

2015-2016 "*Social Media-based User Modeling and its Application in Mobile Recommendation"*, Faculty Award, **TCL**, **$**18, 000, PI**.**

UMBC Internal Funding

2020-2022 "Understanding Racism and Resilience in the Context of Acute Disease Outbreaks with Social Media Analysis", **START** Award, $10,000, PI**.**

2019-2020 "Understanding, Assessing and Improving Student Teamwork", **Hrabowski** Fund for Innovation Award, $25,000, co-PI**.**

2019-2020 "Ethical considerations in data science curricula", **Hrabowski** Fund for Innovation Award, $23,500, co-PI**.**

2016-2017 "Analyzing Message Framing in Social Media Campaigns"**, SURE** Award**,** $1,500, PI

2015-2016 "A Universal Recommender System for Social Media"**, SRAIS** Award, $20,000, PI

Ph.D. Students

John Huffner	2029(Est.)	PhD Thesis Advisor	UMBC
Md Mahmudur Rahman	2026(Est.)	Dissertation committee member	UMBC
Munshi Mahbubur Rahman	2026(Est.)	Dissertation committee member	UMBC
Dae-young Kim	2024	Dissertation committee member	UMBC
Maryam Alomair	2026(Est.)	PhD Thesis Co-advisor	UMBC
George Cancro	2026 (Est.)	PhD Thesis Advisor	UMBC
Benjamin Harvey	2026 (Est.)	PhD Thesis Advisor	UMBC
Fatema Hasan	2025 (Est.)	Dissertation Committee Chair	UMBC
Gloria Opoku-Boateng		Dissertation committee member	UMBC
Abu Zaher Md Faridee	2022	Dissertation Committee Member	UMBC
Rashidul Islam	2022	Dissertation Committee Member	UMBC
Isil Yakut Kilic	2025 (Est.)	Dissertation Committee Chair	UMBC
Tao Ding	2025 (Est.)	Dissertation Committee Chair	UMBC
Pei Guo	2021	Dissertation Committee Member	UMBC
Arpita Roy	2021	Dissertation Committee Chair	UMBC
Philip Feldman	2020	Dissertation Committee Member	UMBC
H M Sajjad Hossain	2019	Dissertation committee member	UMBC

Mohammad Arif UI Alam	2017	Dissertation committee member	UMBC
Shaikha Alduaij	2017	Dissertation committee member	UMBC
Bryan Wilkinson	2017	Dissertation committee member	UMBC (CS)
Yin Kang	2017	Dissertation committee member	UMBC
Yi Yang	2015	Dissertation committee member	Northwestern
Avijoy Chakma	2020	Comprehensive Exam Committee	UMBC
Ronak Razavisousan	2019	Comprehensive Exam Committee	UMBC
David Welsh	2019	Comprehensive Exam Committee	UMBC
Kamrun Naher Keya	2019	Comprehensive Exam Committee	UMBC
Rashidul Islam	2019	Comprehensive Exam Committee	UMBC
Timothy Casey	2018	Comprehensive Exam Committee	UMBC
Neha Singh	2018	Comprehensive Exam Committee	UMBC
Amir Mojtahedi	2018	Comprehensive Exam Committee	UMBC
Abu Zaher Md Faridee	2018	Comprehensive Exam Committee	UMBC
Anamika Paul Rupa	2017	Comprehensive Exam Committee	UMBC
Md Abdullah Al Hafiz Khan	2015	Comprehensive Exam Committee	UMBC

Master ‘s Students

Ethan Zhu	2021	Thesis committee chair	UMBC
Ketki Deshpande	2020	Thesis committee member	UMBC
Priyanka Ranade	2019	Thesis committee member	UMBC
Ajinkya Gaurkar	2018	Thesis committee chair	UMBC
Michael Majursk	2016	Thesis committee member	UMBC
Saul Ricardo Medrano Castillo	2016	Thesis committee member	UMBC
Vivek Desai	2015	Thesis committee member	UMBC

Undergraduate Students

Gabriela Schweers	2024	LLM Hallucination (Mentor)	UMBC
Kiet Tran	2023	ATIP project (Mentor)	UMBC
Elizabeth Thach	2022	ATIP project (Mentor)	UMBC
Rohan Ahuja	2019	Teamwork Analytics (Mentor)	UMBC

Daniyal Khan	2019	Teamwork Analytics (Mentor)	UMBC
Danilo Symonette	2019	Teamwork Analytics (Mentor)	UMBC
Emily Wang	2018	CWIT Scholar (Mentor)	UMBC
Zhihuang Qi	2017	Framing in Social Media Campaigns (Mentor)	UMBC
Michael Tomitz	2017	Framing in Social Media Campaigns (Mentor)	UMBC

Publications

Notes:

- In my field, full papers published in the proceedings of the top-ranked conferences are highly selective and viewed as equally (if not more) prestige/important than journal articles. These are rigorously peer reviewed and are considered archival publications. Researchers in my area focus more on conference papers than journal publications due to the fast-moving nature of the field.
- * indicates a student author

Editors of Conference Proceedings and Journal Special Issues

1. *International Journal on Artificial Intelligence Tools*, 31(7), ***Shimei Pan*** and Miltos Alamaniotis *(Ed.*), 2022.
2. *Responsible AI and Human-AI Interaction,* ***Special Issue of the IEEE Data Engineering Bulletin, Shimei Pan*** *and James Foulds (Ed.), Vol 44, No. 4, 2021.*
3. *Interdisciplinary Perspectives on Fairness and Artificial Intelligence Systems,* ***Special Issue of the IEEE Data Engineering Bulletin,*** *James Foulds and* ***Shimei Pan*** *(Ed.), Vol 43, No. 4, 2020.*
4. *Data-Driven Personality Modeling for Intelligent Human-Computer Interaction,* ***Special Issue of the ACM Transactions on Interactive Intelligent Systems (TIIS), Shimei*** **Pan,** Oliver Brdiczka, Andrea Kleinsmith and Yangqiu Song (Ed.), ACM, *Vol 10, No. 3*, 2020.
5. *Proceedings of the 24th International Conference on Intelligent User Interfaces,* Wai-Tat Fu, **Shimei Pan**, Oliver Brdiczka, Polo Chau, Gaelle Calvary (Ed.), 2019, ACM.
6. *Highlights of ACM IUI 2015,* ***Special Issue of the ACM Transactions on Interactive Intelligent Systems (TiiS), Shimei*** **Pan** *and* Giuseppe Carenini (Ed.), 2016, ACM.
7. *Proceedings of the 20th International Conference on Intelligent User Interfaces,* Oliver Brdiczka, Polo Chau, Giuseppe Carenini, **Shimei Pan**, Per Ola Kristensson (Ed.), 2015, ACM
8. *Proceedings of the 20th International Conference on Intelligent User Interfaces (Companion),* Oliver Brdiczka, Polo Chau, Giuseppe Carenini, **Shimei Pan**, Per Ola Kristensson (Ed.), 2015, ACM.

Peer-Reviewed Journal Articles

1. *When Biased Humans Meet Debiased AI: A Case Study in College Major Recommendation,* Clarice Wang*, Kathryn Wang*, Andrew Bian*, Rashidul Islam*, Kamrun Keya*, James Foulds, and **Shimei Pan**, ***ACM Transactions on Interactive Intelligent Systems (TIIS),*** *13(3), 2023.*

2. *Differential Fairness: An Intersectional Framework for Fair AI*, Rashidul Islam*, Kamrun Naher Keya*, **Shimei Pan**, Anand D. Sarwate and James Foulds, ***Entropy****, 25(4), 2023.*

3. *Are parity-based notions of AI fairness desirable?* James Foulds and **Shimei Pan,** ***IEEE Data Engineering Bulletin,*** *44(4), 2020.*

4. *Building High Performance Explainable Machine Learning Models for social media-based Substance Use Prediction*, Tao ding*, Fatema Hasan*, Warren Bickel and **Shimei Pan,** ***International Journal on Artificial Intelligence Tools (IJAIT)****,* 2020.

5. *Improving Reproducibility in Earth Science Research*, Zhong Liu, Jianwu Wang, **Shimei Pan,** and David Meyer**,** ***EOS (100),*** 2019**.**

6. *Predicting Delay Discounting from Heterogeneous Social Media Data*, Tao Ding*, Warren Bickel and **Shimei Pan,** ***Social Network Analysis and Mining (SNAM),*** *9(27), Springer***,** 2019**.**

7. *Automated Domain Bias Correction and its Application in Text-based Personality Analysis*. Isil Yakut Kilic* and **Shimei Pan**, ***International Journal on Artificial Intelligence Tools (IJAIT)****, 26(5),* 2017.

8. *Machine Learning on Big Data: Opportunities and Challenges***,** Lina Zhou, **Shimei Pan**, Jianwu Wang and Athanasios Vasilakos, ***Neurocomputing,*** *237(c)****,*** *350-361***,** 2017.

9. *The Stability and Usability of Statistical Topic Models, Yi* Yang*, **Shimei Pan**, Jie Lu., Mercan Topkara, and Yangqiu Song**.** ***ACM Transactions on Interactive Intelligent Systems (TIIS),*** *6(2)****,*** *1-23****,*** *ACM, 2016.*

10. *An Uncertainty-Aware Approach for Exploratory Microblog Retrieval,* Mengchen Liu*, Shixia Liu, Xizhou Zhu, Qinying Liao, Furu Wei and **Shimei Pan, IEEE** ***Transactions on Visualization and Computer Graphics (TVCG),*** 22(1)*, 250-259, IEEE, New York, NY USA, 2016.*

11. *Uncovering Insider Threats from the Digital Footprints of Individuals***,** A. Coden, W. Lin, K. Houck, M. Tanenblatt, J. Boston, J. MacNaught, D. Soroker, J. Weisz, **S. Pan**, J. Lai, J. Lu, S. Wood, Y. Xia and C. Lin. ***IBM Journal of Research and Development****. 60(4), 8:1-8:11*, IBM Corp. Riverton, NJ, USA, 2016.

12. *Making Enterprise Recorded Meetings Easy to Discover and Share,* **Shimei Pan**, Mercan Topkara, Steve Wood, Jeff Boston and Jennifer Lai, ***International Journal of Multimedia Data Engineering and Management,*** 6(2)*, 19-36, 2015.*

13. *Constrained Text Co-Clustering with Supervised and Unsupervised Constraints*, Yangqiu Song, **Shimei Pan**, Shixia Liu, Furu Wei, Michelle Zhou, Weihong Qian, ***IEEE Transactions on Knowledge and Data Engineering (TKDE),*** 25(6), 2013, 1227-1239, IEEE.

14. *TIARA: Interactive, Topic-Based Visual Text Summarization and Analysis*, Shixia Liu, Michelle Zhou, **Shimei Pan**, Yangqiu Song, Weihong Qian, Weijia Cai and Xiaoxiao Lian, ***ACM Transactions on Intelligent Systems and Technology (TIST)***, 3(2), 25:1-25:28, February **2012**, ACM, New York, NY USA.

15. *Exploring Features from Natural Language Generation for Prosody Modeling*, **Shimei Pan**, Kathleen McKeown and Julia Hirschberg, ***Computer Speech & Language***, 16(3-4): 457-490, **2002,** Elsevier.

16. *Designing and Evaluating an Adaptive Spoken Dialogue System*, Diane Litman and **Shimei Pan**, ***User Modeling and User-Adapted Interaction***, 12(2-3) pp. 111-137, **2002**, Springer.

17. *Prosody Modelling in Concept-to-Speech Generation: Methodological Issues*, Kathleen McKeown and **Shimei Pan**, ***Philosophical Transactions of the Royal Society***, A, 358, 1419-1431, 2000, Royal Society, UK.

Peer Reviewed Papers in Conference Proceedings

1. **(Best Paper Nomination)** *DoubleDistillation: Enhancing LLMs for Informal Text Analysis using Multistage Knowledge Distillation from Speech and Text,* Fatema Hasan*, Yulong Li, James R. Foulds, **Shimei Pan**, Bishwaranjan Bhattacharjee, ***Proceedings of the 26th International Conference on Multimodal Interaction (ICMI),*** ACM, 2024.

2. **(Best Work-In-Progress Paper)** *Towards A Unifying Human-Centered AI Fairness Framework,* Munshi Mahbubur Rahman*, **Shimei Pan**, and James R. Foulds, ***Proceedings of the 4th International Conference on Information Technology for Social Good,*** ACM, 2024.

3. *Fair Inference for Discrete Latent Variable Models: An Intersectional Approach,* Rashidul Islam, **Shimei Pan**, James R. Foulds, ***Proceedings of the 4th International Conference on Information Technology for Social Good,*** ACM, 2024.

4. *The Role of Cognition and Metacognition in Data Science Problem Solving: Insights from a Field Study,* Maryam Alomair*, Shimei Pan and Lujie Karen Chen, ***Proceedings of the Thirteenth International Conference on Learning Analytics & Knowledge,*** 2023.

5. *Modeling metacognitive and cognitive processes in data science problem solving (student abstract)*, Maryam Alomair*, **Shimei Pan**, Lujie Chen, ***Proceedings of the AAAI Conference on Artificial Intelligence,*** *AAAI*, 2023.

6. *Incorporating LIWC in Neural Networks to Improve Human Trait and Behavior Analysis in Low Resource Scenarios*, Doa Isil Yakut Kilic* and **Shimei Pan**, ***Proceedings of the International Conference on Language Resources and Evaluation (LREC),*** 2022.

7. *Do Humans Prefer Debiased AI Algorithms? A Case Study in Career Recommendation*, Clarice Wang*, Kathryn Wang*, Andrew Bian*, Rashidul Islam*, Kamrun Naher Keya*, James Foulds and **Shimei Pan**, ***ACM International Conference on Intelligent User Interfaces (IUI),*** ACM, 2022.

8. *Fair Representation Learning for Heterogeneous Information Networks*, Zhiqian Zeng*, Rashidul Islam*, Kamrun Keya*, James Foulds and **Shimei Pan**, ***In Proceedings of the International Conference on Web and social media (ICWSM)***, AAAI, 2021.

9. *Incorporating medical knowledge in BERT for clinical relation extraction*, Arpita Roy*, and **Shimei Pan,** ***The 2021 International Conference on Empirical Methods in Natural Language Processing (EMNLP),*** ACL, 2021.

10. *Debiasing Career Recommendations with Neural Fair Collaborative Filtering*, Rashidul Islam*, Kamrun Keya*, Zhiqian Zeng*, **Shimei Pan** and James Foulds. ***In Proceedings of WWW***, ACM, 2021.

11. *Equitable Allocation of Healthcare Resources with Fair Survival Models*, Kamrun Keya*, Rashidul Islam*, Shimei Pan, Ian Stockwell and James Foulds. ***In Proceedings of SIAM International Conference on Data Mining (SDM)***, SIAM, 2021.

12. *Can We Obtain Fairness for Free?* Rashidul Islam*, **Shimei Pan** and James Foulds. ***In Proceedings of the 2021 International Conference on Artificial Intelligence, Ethics and Society (AIES)***, AAAI/ACM, 2021.

13. *Integrating Text Embedding with Traditional NLP Features for Clinical Relation Extraction*. Fatema Hasan*, Arpita Roy*, **Shimei Pan**, ***IEEE International Conference on Tools with Artificial Intelligence (ICTAI)***, IEEE, 2020.

14. *Intersectional AI: A Study of How Information Science Students Think about Ethics and Their Impact,* Nora McDonald and **Shimei Pan**, ***In Proceedings of the ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW),*** 2020.

15. *Equitable Allocation of Healthcare Resources with Fair Cox Models*, Kamrun Naher Keya*, Rashidul Islam*, **Shimei Pan**, Ian Stockwell and James Foulds, ***AAAI Fall Symposium***, 2020.

16. *Incorporating Extra Knowledge to Enhance Word Embedding*, Arpita Roy* and **Shimei Pan, *In Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)***, 2020.

17. *Can Machine Learning Help Instructors Understand How Student Teams Are Performing,* Simon Stacey, Don Engel, Danilo Symonette*, Rohan Ahuja*, **Shimei Pan**, Daniyal Khan*, Sara Tahir* and Magdalene Wang*, In ***Proceedings of the International Conference on Artificial Intelligence in Education (AIED),*** 2020.

18. *An Intersectional Definition of Fairness,* James Foulds, Rashidul Islam*, Kamrun Naher Keya* and **Shimei Pan, *In Proceedings of the International Conference on Data Engineering (ICDE)***, 2020, IEEE.

19. *Bayesian Modeling of Intersectional Fairness: The Variance of Bias*, James Foulds, Rashidul Islam*, Kamrun Naher Keya* and **Shimei Pan, *In Proceedings of the SIAM International Conference on Data Mining (SDM),*** 2020, SIAM.

20. *Towards the Automatic Assessment of Student Teamwork*, Rohan Ahuja*, Daniyal Khan*, Danilo Symonette*, **Shimei Pan,** Simon Stacey, and Don Engel, ACM GROUP, 2020, ACM.

21. *Supervising Unsupervised Open Information Extraction Models*, Arpita Roy*, Youngja Park, Taesung Lee and **Shimei Pan, *Proceedings of the Conference on Empirical Methods on Natural Language Processing (EMNLP)***, 2019, ACL (23.8% acceptance rate).

22. *Predicting Malware Attributes from Cybersecurity Texts*, Arpita Roy*, Youngja Park and **Shimei Pan**. ***Annual Conference of the North American Chapter of the Association for Computational Linguistics* (NAACL)**, 2019 (21.3% acceptance rate).

23. *Social Media-based User Embedding: A Literature Review*, **Shimei Pan** and Tao Ding*. ***International Joint Conference on Artificial Intelligence* (IJCAI)**, 2019 (17.9% acceptance rate).

24. *Incorporating Domain Knowledge in Learning Word Embedding*, Arpita Roy*, Youngja Park and **Shimei Pan**. ***IEEE International Conference on Tools with Artificial Intelligence (ICTAI),*** 2019 (27% acceptance rate).

25. *Mitigating Demographic Biases in Social Media-Based Recommender Systems*, Rashidul Islam*, Kamrun Naher Keya*, **Shimei Pan**, James Foulds, Extended Abstract, **ACM SIGKDD Social Impact Track**, 2019, ACM.

26. *Interpreting Social Media-based Substance Use Prediction Models with Knowledge Distillation*. Tao Ding*, Fatema Hasan*, Warren K. Bickel and **Shimei Pan**. ***IEEE International Conference on Tools with Artificial Intelligence (ICTAI)***, 2018 (29% acceptance rate).

27. *Predicting Delay Discounting from Social Media Likes with Unsupervised Feature Learning*. Tao Ding*, Warren K. Bickel and **Shimei Pan**, ***IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM)***, 2018. (15% acceptance rate)

28. *Multi-View Unsupervised User Feature Embedding for Social Media-based Substance Use Prediction* Tao Ding*, Warren K. Bickel, **Shimei Pan**. ***Proceedings of the Conference on Empirical Methods on Natural Language Processing (EMNLP)***, 2017, ACL (26% acceptance rate).

29. **(Best Student Paper Award)** *Automated Detection of Substance Use-Related Social Media Posts Based on Image and Text Analysis,* Arpita Roy*, Anamika Rupa*, Hamed Pirsiavash and **Shimei Pan**. ***IEEE International Conference on Tools with Artificial Intelligence (ICTAI)***, 2017.

30. *Designing Speech, Acoustic and Multimodal Interactions*. Cosmin Munteanu, Pourang Irani, Sharon Oviatt, Matthew P. Aylett, Gerald Penn, **Shimei Pan**, Nikhil Sharma, Frank Rudzicz, Randy Gomez, Ben Cowan, Keisuke Nakamura: ***CHI Extended Abstract,*** 2017.

31. **(Best Paper Award)** *Analyzing and Preventing Bias in Text-based Personal Trait Prediction Algorithms,* Isil Yakut Kilic* and **Shimei Pan**, ***IEEE International Conference on Tools with Artificial Intelligence (ICTAI)***, 2016.

32. *Predicting Gene Functional Interaction Using Semantic Word Embedding*, Arpita Roy* and **Shimei Pan**, IEEE ***International Conference on Tools with Artificial Intelligence (ICTAI),*** 2016.

33. *Personalized Emphasis Framing for Persuasive Message Generation,* Tao Ding* and **Shimei Pan**. ***Proceedings of the Conference on Empirical Methods on Natural Language Processing (EMNLP)***, 2016, ACL (26% acceptance rate)

34. *Improving Topic Model Stability for Effective Document Exploration,* Yi Yang*, **Shimei Pan**, Jie Lu, Mercan Topkara, and Yangqiu Song. ***Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI)***, 2016, Morgan Kaufmann (24% acceptance rate).

35. *Designing Speech and Multimodal Interactions for Mobile, Wearable, and Pervasive Applications,* Cosmin Munteanu, Pourang Irani, Sharon L. Oviatt, Matthew P. Aylett, Gerald Penn, **Shimei Pan**, Nikhil Sharma, Frank Rudzicz, Randy Gomez, Keisuke Nakamura and Kazuhiro Nakadai. ***CHI Extended Abstracts****, 2016, ACM.*

36. *Cross-Domain Error Correction in Personality Prediction*, Isil Yakut Kilic* and **Shimei Pan,** ***Proceedings of the European Conference on Artificial Intelligence (ECAI)****, short paper, 2016, IOS (19% acceptance rate).*

37. **(Invited paper)** *What's Hot in Intelligent User Interfaces*, **Shimei Pan**, Oliver Brdiczka, Giuseppe Carenini, Polo Chau, and Per Ola Kristensson. ***Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence (AAAI),*** 2016, AAAI.

38. *An Empirical Study of the Effectiveness of using Sentiment Analysis Tools for Opinion Mining,* Tao Ding* and **Shimei Pan**. ***Proceedings of the 12th International Conference on Web Information Systems and Technologies (WEBIST),*** 53-62, 2016, Rome, Italy (Typical acceptance rate is 13%-19%).

39. *Using Personal Traits for Brand Preference Prediction,* Chao Yang*, **Shimei Pan**, Jalal Mahmud, Huahai Yang. ***Proceedings of the International Conference on Empirical Methods in Natural Language Processing (EMNLP),*** 2015**,** *ACL* (26% acceptance rate)**.**

40. **(Best Paper Runner Up)** *User-directed non-disruptive topic model update for effective exploration of dynamic content,* Yi Yang*, **Shimei Pan,** Yangqiu Song, Jie Lu and Mercan Topkara**.** *ACM International Conference on Intelligent User Interfaces (IUI)*, 2015, ACM (23% acceptance rate).

41. *Signals of Expertise in Public and Enterprise Social Q&A*, **Shimei Pan**, Elijah Mayfield*, Jie Lu, and Jennifer Lai. Proceedings of the 9th International Conference on Web and Social Media (ICWSM), 2015, AAAI. (Acceptance rate ~20%)

42. *Composite Search for Enterprise Distributed Multimedia Recorded Meetings*, **Shimei Pan**, Mercan Topkara, Steve Wood, Jeff Boston, Jennifer Lai, ***International Symposium on Multimedia (ISM)****, 2014,* ***IEEE.***

43. *Expediting Expertise: Supporting Informal Social Learning in the Enterprise,* Jennifer Lai, Jie Lu, **Shimei Pan,** Danny Soroker , Mercan Topkara, Jeff Boston and Jason Crawford. ***International Conference on Intelligent User Interfaces (IUI)***, **2014**, ACM. (24% Acceptance Rate)

44. *Optimizing Temporal Topic Segmentation for Intelligent Text Visualization,* **Shimei Pan**, Michelle Zhou, Yangqiu Song, Weihong Qian, Fei Wang and Shixia Liu. ***International Conference on Intelligent User Interfaces (IUI),*** **2013**, 339—350, ACM.

45. *You've Got Video: Increasing Clickthrough when Sharing Enterprise Video with Email*, Mercan Topkara, **Shimei Pan**, Jennifer Lai, Ahmet Dirik, Steve Wood and Jeff Boston, ***Proceedings of the ACM Annual Conference on Human Factors in Computing Systems (CHI)***, **2012**, 565-568, ACM.

46. *In Case You Missed it: Benefits of Attendee-Shared Annotations for Non-attendees of Remote Meetings*, Mukesh Nathan*, Mercan Topkara, Jennifer Lai, **Shimei Pan**, Steve Wood, Jeff Boston, Loren Terveen, ***Proceedings of the ACM conference on Computer Supported Cooperative Work (CSCW)***, **2012**, 339-348, ACM.

47. *EPIC: a Multi-Tiered Approach to Enterprise Email Prioritization*, Jie Lu, Zhen Wen, **Shimei Pan** and Jennifer Lai, ***Proceedings of the ACM international conference on Intelligent User Interfaces (IUI),*** **2012**, pp. 199—202, ACM.

48. *VISA, a Visual Sentiment Analysis System*, Dongxu Duan, Weihong Qian, **Shimei Pan**, Lei Shi and Chuang Lin. ***Proceedings of the 5th International Symposium on Visual Information Communication and Interaction***, **2012**, pp. 22-28, ACM.

49. *Enterprise Blogging in a Global Context: Comparing Chinese and American Practices*, Qinying Liao, **Shimei Pan**, Jennifer Lai and Chang Yang, ***Proceedings of the ACM Conference on Computer Supported Cooperative Work (CSCW)***, **2011**, 35--44, ACM.

50. *Information at your Fingertips: Contextual IR in Enterprise Email*, Jie Lu, **Shimei Pan**, Jennifer Lai and Zhen Wen, Proceedings ***of the 16th International Conference on Intelligent user interfaces (IUI) 2011***, 205--214, ACM.

51. *Analytic Trails: Supporting Provenance, Collaboration, and Reuse for Visual Data Analysis by Business Users*, Jie Lu, Zhen Wen, **Shimei Pan** and Jennifer Lai, ***Proceedings of the 13th IFIP Conference on Human-Computer Interaction (INTERACT)*** **2011**, 256--273, Springer.

52. *Constrained Co-Clustering for Textual Documents*, Yangqiu Song, **Shimei Pan**, Shixia Liu, Furu Wei, Michelle Zhou and Weihong Qian, ***Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI)***, **2010**, 581-586, AAAI.

53. *Natural Language Aided Visual Query Building for Complex Data Access*, **Shimei Pan**, Michelle Zhou, Keith Houck and Peter Kissa, ***Proceedings of the Twenty-Second IAAI Conference on Artificial Intelligence***, **2010**, 1281-1286. AAAI.

54. *TIARA: a Visual Exploratory Text Analytic System*, Furu Wei, Shixia Liu, Yangqiu Song, **Shimie Pan**, Michelle Zhou, Weihong Qian, Lei Shi, Li Tan and Qiang Zhang, ***Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)***, **2010**, 153--162, ACM.

55. *Topic and Keyword Re-Ranking for LDA-based Topic Modeling*, Yangqiu Song, **Shimei Pan**, Shixia Liu, Michelle Zhou and Weihong Qian, ***Proceeding of the 18th ACM Conference on Information and knowledge management (CIKM), 2009***, 1757--1760, ACM.

56. **(Best Paper honorable mention)** *Interactive, Topic-based Visual Text Summarization and Analysis*, Shixia Liu, Michelle Zhou, **Shimei Pan**, Weihong Qian, Weijia Cai, Xiaoxiao Lian, ***Proceeding of the 18th ACM conference on Information and knowledge management (CIKM) 2009***, 543--552, ACM.

57. *Natural Language Query Recommendation in Conversation Systems*, **Shimei Pan** and James Shaw, **Proceedings** ***of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI)***, **2007**, 1701-1706, Morgan Kaufmann.

58. *Building Ubiquitous and Robust Speech and Natural Language Interfaces*, G G Lee and **Shimei Pan**, ***Proceeding of the 12th International Conference on Intelligent User Interfaces (IUI)***, **2007**, ACM.

59. *Responsive Information Architect: Enabling Context-Sensitive Information Seeking*, Michelle Zhou, Keith Houck, **Shimei Pan**, James Shaw, Vikram Aggarwal and Zhen Wen, ***Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI) 2006***, 1691-1694, AAAI.

60. *Enabling Context-Sensitive Information Seeking*, Michelle Zhou, Keith Houck, **Shimei Pan**, James Shaw, Vikram Aggarwal, and Zhen Wen, ***Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI)*** **2006**, 116--123, ACM.

61. *Instance-Based Sentence Boundary Determination by Optimization for Natural Language Generation*, **Shimei Pan** and James Shaw, ***Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics (ACL)***, **2005**, 565-572, ACL.

62. *Two-Way Adaptation for Robust Input Interpretation in Practical Multimodal Conversation Systems*, **Shimei Pan**, Siwei Shen*, Michelle Zhou and Keith Houck, ***Proceedings of the 10th international conference on Intelligent user interfaces (IUI)*** **2005**, 35--42, ACM.

63. *Responsive Information Architect: A Context-Sensitive Multimedia Conversation Framework for Information Seeking*, Michelle Zhou, Keith Houck, Rosario Uceda-Sosa, **Shimei Pan**, Miin Chen, Vikram Aggarwal, James Shaw, Proceedings ***of the Nineteenth National Conference on Artificial Intelligence (AAAI)***, **2004,** AAAI.

64. *A Multi-Layer Conversation Management Approach for Information Seeking Applications*, Shimei **Pan**, ***Proceedings of the Eighth International Conference on Spoken Language Processing (INTERSPEECH)***, **2004**, 245-248, ISCA.

65. *SEGUE: A Hybrid Case-based Surface Natural Language Generator*, **Shimei Pan** and James Shaw, ***Proceedings of the Third International Conference on Natural Language Generation (INLG) 2004***, pp. 130-140, ACL.

66. *Context-Based Multimodal Input Understanding in Conversational Systems*, Joyce Chai, **Shimei Pan**, Michelle Zhou, Keith Houck, ***Proceedings of the 4th IEEE International Conference on Multimodal Interfaces (ICMI)***, pp. 87--92, **2003**, IEEE.

67. *Designing a Speech Corpus for Instance-based Spoken Language Generation*, **Shimei Pan** and Wubin Weng*, ***Proceedings of the Second International Conference on Natural Language Generation (INLG)***, **2002**, ACL.

68. *Semantic Abnormality and its Realization in Spoken Language*, **Shimei Pan**, Kathleen McKeown and Julia Hirschberg, ***Proceedings of the 7th European Conference on Speech Communication and Technology (EuroSpeech)*** **2001**, 333-336, ISCA.

69. *Automated Authoring of Coherent Multimedia Discourse in Conversation Systems*, Michelle Zhou and **Shimei Pan**, ***Proceedings of the ninth International Conference on Multimedia*** (***ACM MM***), **2001**, 555-558, ACM

70. *Modeling Local Context for Pitch Accent Prediction*, **Shimei Pan** and Julia Hirschberg, Proceedings ***of the 38th Annual Meeting of the Association for Computational Linguistics (ACL),*** **2000**, ACL

71. *Predicting and Adapting to Poor Speech Recognition in a Spoken Dialogue System*, Diane Litman and **Shimei Pan**, ***Proceedings of the Seventeenth National Conference on Artificial Intelligence (AAAI),*** **2000**, 722-728, AAAI.

72. (**Most Influential EMNLP Paper**) *Word Informativeness and Automatic Pitch Accent Modeling*, **Shimei Pan** and Kathleen McKeown, Proceedings ***of the Joint Conference on Empirical Methods in Natural Language Processing and Very Large Corpora (EMNLP)***, **1999**, 148—157, ACL.

73. *Empirically Evaluating an Adaptable Spoken Dialogue System*, DJ Litman and **Shimei Pan**, ***Proceedings of the 7th International Conference on User Modeling (UM)***, **1999**, Springer-Verlag.

74. *Modeling Prosody Automatically in Concept-to-Speech Generation*, **Shimei Pan**, ***Proceedings of the Sixteenth National Conference on Artificial Intelligence (AAAI)***, **1999**, AAAI.

75. *Learning Intonation Rules for Concept to Speech Generation*, **Shimei Pan** and Kathleen McKeown, ***Proceedings of the 17th International Conference on Computational Linguistics (ACL)***, **1998**, 1003—1009. ACL.

76. *Evaluating Response Strategies in a Web-based Spoken Dialogue Agent*, Diane Litman, **Shimei Pan** and MA Walker, ***Proceedings of the 17th international conference on Computational Linguistics (ACL),*** **1998**, 780-786. ACL.

77. *Language Generation for Multimedia Healthcare briefings,* Kathleen McKeown, **Shimei Pan**, James Shaw, Desmond Jordan and Barry Allen, ***Proceedings of the Fifth Conference on Applied Natural Language Processing (ANLP),*** **1997**.

78. *Spoken Language Generation in a Multimedia System*, **Shimei Pan** and Kathleen McKeown, ***Proceedings of the Fourth International Conference on Spoken Language Processing (ICSLP)***, **1996**, 374-377, IEEE.

79. *Negotiation for Automated Generation of Temporal Multimedia Presentations*, Mukesh Dalal, Steve Feiner, Kathleen McKeown, **Shimei Pan**, Michelle Zhou, etc., ***Proceedings of the Forth ACM International Conference on Multimedia (ACM Multimedia)***, **1996**, 55-64, ACM.

80. *Knowledge acquisition and Chinese parsing based on corpus,* Chunfa Yuang, Changning Huang and **Shimei Pan,** ***Proceedings of the 14th International Conference on Computational Linguistics (COLING),*** 1300-1304, ACL.

Book Chapter

1. *Impostor GAN: Toward Modeling Social Media User Impersonation with Generative Adversarial Networks. Nafees M*., **Pan S**., Chen Z., Foulds J.R., In: Sarkadi S., Wright B., Masters P., McBurney P. (eds), DeceptAI 2021. Communications in Computer and Information Science, vol 1296. Springer.*

2. *How Reliable is Sentiment Analysis? A Multi-domain Empirical Investigation*, Tao Ding* and **Shimei Pan.** *Lecture Notes in Business Information Processing, 37-57, 2017, Springer.*

3. *MIND: A Context-based Multimodal Interpretation Framework in Conversation Systems*, Joyce Chai, **Shimei Pan,** Michelle Zhou, ***Advances in Natural Multimodal Dialogue Systems***, J. Kuppervelt, L. Dybkjaer and N. Bernsen (eds). Vol. 30. 265-285, **2005**, Kluwer.

Peer Reviewed Colloquium and Workshop Papers

1. *International Workshop on Digital Twins for Smart Health*, Jun Deng, Ying Ding, Luke Achenie, Jinwei Liu, Shimei Pan, Sanjay Purushotham, Huanmei Wu, and Qi Wang, In Proceedings of ***the ACM Web Conference***, 988-988 (Companion). ACM, 2023.

2. *The Keyword Explorer Suite: A Toolkit for Understanding Online Populations.* Philip Feldman, **Shimei Pan**, James R. Foulds, ***ACM International Conference on Intelligent User Interfaces*** (Companion), 2023.

3. *Finding Causal Features with Dimension Reduction for Interpretable Text Classification.* Guohou Shan*, James R. Foulds, **Shimei Pan**, ***Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL),*** *2022.*

4. *Analyzing COVID-19 Tweets with Transformer-based Language Models.* Philip Feldman, Sim Tiwari*, Charissa S. L. Cheah, James R. Foulds, **Shimei Pan**, ***International Workshop on Social Sensing, International AAAI Conference on Web and Social Media (ICWSM)****, 2021.*

5. *Mitigating Socio-linguistic Bias in Job Recommendation,* Ketki Deshpande*, **Shimei Pan** and James Foulds, ***Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL),*** *2020.*

6. *A User Study on a De-biased Career Recommender System,* Clarice Wang*, Kathryn Wang*, Andrew Bian*, Rashidul Islam*, Kamrun Naher Keya*, James Foulds and **Shimei Pan,** ***Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL),*** *2020.*

7. ***UMBC at SemEval-2018 Task 8:*** *Understanding Text about Malware.* Ankur Padia*, Arpita Roy*, Taneeya Satyapanich*, Francis Ferraro, **Shimei Pan**, Youngja Park, Anupam Joshi, Tim Finin. ***NAACL-HLT SemEval Workshop,*** 878-884 2018.

8. *Analyzing and Retrieving Illicit Drug-Related Posts from Social Media*, Tao Ding*, Arpita Roy*, Zhiyuan Chen, Qian Zhu, **Shimei Pan,** ***Workshop on Data Mining in Translational Biomedical Informatics (TBI), IEEE International Conference on Bioinformatics and Biomedicine (BIBM),*** *2016.*

9. *LDAExplore: Visualizing Topic Models Generated Using Latent Dirichlet Allocation*, Ashwinkumar Ganesan*, Kiante Brantley*, **Shimei Pan** and Jian Chen. IUI Interactive Visual Text Analytics workshop, 2015,

ACM.

10. *Active Learning with Constrained Topic Model*. Yi Yang*, **Shimei Pan**, Doug Downey and Kunpeng Zhang. ***ACL 2014 Workshop on Interactive Language Learning, Visualization and Interfaces****, 2014, ACL.*

11. *PPLUM: A Framework for Large-Scale Personal Persuasion*. **Shimei Pan** and Michelle Zhou. ***CIKM 2014 Workshop on Data-driven User Behavioral Modeling and Mining from Social Media.*** *2014****, ACM.***

12. *Dare to Compare: Motivating Expertise Building in the Enterprise through Intelligent User Modeling Interfaces*. Mercan Topkara, Justin Weisz, **Shimei Pan**, Jie Lu, Jennifer Lai. ***CIKM 2014 Workshop on Data-driven User Behavioral Modeling and Mining from Social Media.*** *2014, ACM.*

13. *Incorporating User Input in Topic Modeling*. Yi Yang, **Shimei Pan**, Jie Lu, Mercan Topkara and Doug Downey. ***CIKM 2014 Workshop on Interactive Mining for Big Data.*** *2014, ACM.*

14. *MIND: A Semantics-based Multimodal Interpretation Framework for Conversational Systems,* Joyce Chai, **Shimei Pan**, Michelle Zhou, ***Proceedings of International CLASS Workshop on Natural, Intelligent and Effective Interaction in Multimodal Dialog Systems*****, 2002.**

15. *Integrating Language Generation with Speech Synthesis in a Concept to Speech System,* **Shimei Pan** and Kathleen McKeown, In ***Proceedings of ACL/EACL Concept to Speech Workshop****, 1997. ACL.*

Not peer reviewed

1. *GenderAlign: An Alignment Dataset for Mitigating Gender Bias in Large Language Models,* Tao Zhang*, Ziqian Zeng, Yuxiang Xiao, Huiping Zhuang, Cen Chen, James Foulds, **Shimei Pan**, ***arXiv preprint*** arXiv: 2406.13925, 2024.

2. *RAGged Edges: The Double-Edged Sword of Retrieval-Augmented Chatbots,* Philip Feldman, James R. Foulds, **Shimei Pan**, ***arXiv preprint*** arXiv:2403.01193, 2024.

3. *Teach me with a Whisper: Enhancing Large Language Models for Analyzing Spoken Transcripts using Speech Embeddings,* Fatema Hasan*, Yulong Li, James Foulds, **Shimei Pan**, and Bishwaranjan Bhattacharjee, ***arXiv preprint*** arXiv:2311.07014, 2023.

4. *The Role of Interactive Visualization in Explaining (Large) NLP Models: from Data to Inference*, Richard Brath, Daniel A. Keim, Johannes Knittel*, **Shimei Pan**, Pia Sommerauer, Hendrik Strobelt, CoRR abs/2301.04528, 2023.

5. *Trapping LLM hallucinations using tagged context prompts*, Philip Feldman, James Foulds and **Shimei Pan**, **arXiv preprint** arXiv:2306.06085, 2023.

6. *Polling Latent Opinions: A Method for Computational Sociolinguistics Using Transformer Language Models,* Philip Feldman, Aaron Dant, James R. Foulds, and **Shimei Pan,** *CoRR abs/2204.07483, 2022.*

7. *Tell Me Something That Will Help Me Trust You: A Survey of Trust Calibration in Human-Agent Interaction,* George J. Cancro*, **Shimei Pan**, James R. Foulds, CoRR abs/2205.02987, 2022.

8. *Fair Inference for Discrete Latent Variable Models,* Rashidul Islam*, **Shimei Pan**, James R. Foulds, CoRR abs/2209.07044, 2022.

9. *Learning User Embeddings from Temporal Social Media Data: A Survey*, Fatema Hasan*, Kevin S. Xu, James R. Foulds, **Shimei Pan**, CoRR, ***arXiv***:2105.07996 [cs.AI], 2021.

10. *Automatically Infer Human Traits and Behavior from Social Media Data*, **Shimei Pan** and Tao Ding*, CoRR, **arXiv**:1804.04191 [cs.SI].

11. *$1 Today or $2 Tomorrow? The Answer is in Your Facebook Likes,* Tao Ding*, Warren K. Bickel and **Shimei Pan**, Corr, **arXiv**:1703.07726 [cs.AI], 2017.

Patents

1. Automated *contextual information retrieval based on multi-tiered user modeling and dynamic retrieval strategy,* Jennifer Lai, Jie Lu, Shimei Pan, Zen Wen, US Patent 9,633,140, 2017.

2. *Multi-tiered approach to E-mail prioritization*, Jennifer Lai, Jie Lu, **Shimei Pan**, Zen Wen, US Patent 9,256,862, 2016.

3. *Composite propensity profile detector,* Anni Coden, Keith Houck, Ching-yun Lin, Wanyi Lin, Peter Malkin, **Shimei Pan**, Youngja Park, Justin Weisz, US Patent 9,311,467, 2016.

4. *Systems, methods, and computer program products for expediting expertise*, Jie Lu, Jeff Boston, Anni Coden, Jennifer Lai, Shimei Pan, Mercan Topkara, Zen Wen, Steve Wood, US Patent 9,292,791, 2016.

5. *Temporal topic segmentation and keyword selection for text visualization*, Shixia Liu, **Shimei Pan**, Weihong Qian, Yangqiu Song, Fei Wang, Michelle Zhou, US Patent 9,195,635, 2015.

6. *Automatically generating a personalized digest of meetings,* Jeff Boston, Jennifer Lai, **Shimei Pan**, Mercan Topkara and Steve Wood. 8914452, 2014.

7. *Method and apparatus for robust input interpretation by conversation systems,* Keith houck, Shimei Pan, Siwei Shen and Michelle Zhou. 8775459, 2014.

8. *Producing a visual summarization of text documents*. Wei Jia Cai, Xiao Xiao Lian, Shixia Liu, **Shimei Pan**, Wei Hong Qian, Yang Qiu Song, Qiang Zhang, Michelle Zhou, US 08245135, 2012.

9. *Automated Contextual Information Retrieval Based on Multi-Tiered User Modeling and Dynamic Retrieval Strategy,* Jennifer Lai, Jie Lu, **Shimei Pan**, Zhen Wen. *US 20120209871, 2012.*

10. *Instance-based sentence boundary determination by optimization,* **Shimei Pan** and James Shaw, US Patent 7,552,047

11. *Hybrid approach for query recommendation in conversation systems,* **Shimei Pan** and James Shaw, US Patent 7,533,089

12. *Method, program, and apparatus for natural language generation,* **Shimei Pan** and James K Shaw, US Patent 7,496,621

Invited Professional Presentations (Non-Juried/Refereed)

1. *How to Design a Fair Data Mining System: Navigating the Trade-Offs,* ***Society of Industrial and Applied Mathematics (SIAM) Data Mining Tutorial, SDM,*** *2023.*

2. **[Keynote]** *Human-Centered Approaches to AI Fairness,* ***SDM international workshop on Algorithmic Fairness in Artificial intelligence, Machine learning and Decision Making***, Minneapolis,2023.

3. Bias and Fairness in AI, **Heidelberg Institute for Theoretical Studies,** Heidelberg, Germany, 2023.

4. Bias in NLP: An Intersection of AI and Society, ***Computational Linguistics Department, Heidelberg University*****,** Germany, 2022.

5. **[Keynote]** *"Large Scale Social Media-based Analysis of Human Behavior and Decision-making", **14th International Conference on Emerging Technologies for a Smarter World,* **2018, Stony Brook University, NY.**

6. [**Keynote**] *Toward Human-centered Text Analytics.* ***ACM conference on Intelligent User Interfaces (IUI) Workshop on Visual Text Analytics,*** March 2015, Atlanta, Georgia, USA.

7. **[Keynote]** *Human-centered Text Analytics.* ***ACM conference on Information and Knowledge Management (CIKM) Workshop on Interactive Mining for Big Data,*** November 2014, Shanghai China.

8. Differential Fairness for Machine Learning and Artificial Intelligence Systems: Unbiased Decisions with Biased Data," **National Institute of Standards** (NIST), 2018

9. Social Media Analytics and its Application in User Modeling," **Army Research Lab (ARL),** 2018.

10. From Word Embedding to User Embedding, **Department of Mathematics and Statistics, UMBC,** 2018.

11. Social Media-based Large Scale Personal Persuasion, **Computer Science Department, Columbia University**, July 2016, New York, NY, USA.

12. Social Media-based Large Scale Personal Persuasion, **Bloomberg LP, Data Science Seminar**, July 2016, New York, NY, USA.

Conference/Workshop Presentations (Juried/Refereed)

13. DoubleDistillation: Enhancing LLMs for Informal Text Analysis using Multistage Knowledge Distillation from Speech and Text, **ACM International Conference on Multimodal Interaction (ICMI),** 2024

14. *Interpreting Social Media-based Substance Use Prediction Models with Knowledge Distillation*. **IEEE International Conference on Tools with Artificial Intelligence (ICTAI)**, 2018.

15. *Predicting Delay Discounting from Social Media Likes with Unsupervised Feature Learning*. **IEEE/ACM International Conference on Advances in Social Network Analysis and Mining,** 2018, Barcelona, Spain.

16. *Multi-View Unsupervised User Feature Embedding for Social Media-based Substance Use Prediction***, EMNLP,** 2017, Copenhagen, Denmark.

17. Domain Bias Reduction in Text-based Personality Analysis**, ECAI**, 2016.

18. Using Personal Traits for Brand Preference Prediction, **EMNLP** 2015.

19. PPLUM: A Framework for Large-Scale Personal Persuasion. **ACM CIKM 2014 Workshop on Data-driven User Behavioral Modeling and Mining from Social Media, 2014.**

20. Dare to Compare: Motivating Expertise Building in the Enterprise through Intelligent User Modeling Interfaces. **ACM CIKM 2014 Workshop on Data-driven User Behavioral Modeling and Mining from Social Media, 2014.**

21. Optimizing Temporal Topic Segmentation for Intelligent Text Visualization. **International Conference on Intelligent User Interfaces (IUI),** 2013.

22. Information at your Fingertips: Contextual IR in Enterprise Email. **International Conference on Intelligent user interfaces (IUI)** 2011.

23. Analytic Trails: Supporting Provenance, Collaboration, and Reuse for Visual Data Analysis by Business Users. **IFIP Conference on Human-Computer Interaction (INTERACT)** 2011.

24. Natural Language Aided Visual Query Building for Complex Data Access. **The Twenty-Second IAAI Conference on Artificial Intelligence**, 2010, AAAI.

25. Natural Language Query Recommendation in Conversation Systems. **International Joint Conference on Artificial Intelligence (IJCAI)**, 2007.

26. Building Ubiquitous and Robust Speech and Natural Language Interfaces, **International Conference on Intelligent User Interfaces (IUI)**, 2007.

27. Responsive Information Architect: Enabling Context-Sensitive Information Seeking, the **Twenty-First National Conference on Artificial Intelligence (AAAI), 2006**.

28. Instance-Based Sentence Boundary Determination by Optimization for Natural Language Generation, **the 43rd Annual Meeting of the Association for Computational Linguistics (ACL),** 2005.

29. Two-Way Adaptation for Robust Input Interpretation in Practical Multimodal Conversation Systems, **the 10th international conference on intelligent user interfaces (IUI),** 2005.

30. A Multi-Layer Conversation Management Approach for Information Seeking Applications, **the Eighth International Conference on Spoken Language Processing (INTERSPEECH),** 2004.

31. SEGUE: A Hybrid Case-based Surface Natural Language Generator, **the Third International Conference on Natural Language Generation (INLG),** 2004.

32. Designing a Speech Corpus for Instance-based Spoken Language Generation, **the Second International Conference on Natural Language Generation (INLG)**, 2002.

33. Semantic Abnormality and its Realization in Spoken Language, **Shimei Pan**, K McKeown and J Hirschberg, **the 7th European Conference on Speech Communication and Technology (EuroSpeech)** 2001.

34. Modeling Local Context for Pitch Accent Prediction, **Shimei Pan** and J Hirschberg, Proceedings **of the 38th Annual Meeting of the Association for Computational Linguistics (ACL),** 2000, ACL.

35. Word Informativeness and Automatic Pitch Accent Modeling, **the Joint Conference on Empirical Methods in Natural Language Processing and Very Large Corpora (EMNLP)**, 1999.

36. Modeling Prosody Automatically in Concept-to-Speech Generation, **the Sixteenth National Conference on Artificial Intelligence (AAAI)**, 1999.
37. Learning Intonation Rules for Concept to Speech Generation, **the 17th International Conference on Computational Linguistics (ACL)**, 1998.
38. Spoken Language Generation in a Multimedia System, **the Fourth International Conference on Spoken Language Processing (ICSLP)**, 1996

Service to the University and College

1. UMBC Award Committee (2024-current)
2. **UMBC** START Award Review Committee (2024)
3. COEIT Interdisciplinary Proposal Review Committee (2024)
4. **COEIT** Open House Faculty Panel (2024)
5. **UMBC** Research and Creative Achievement Council (2018-2022)
6. **COEIT** CWIT scholar mentor (2018-2019)
7. **COEIT** CWIT/Cyber New Scholar Selection (2019, 2024)
8. **CSEE** Faculty search committee (2021, 2022, 2024)

Service to the IS Department

1. **IS Department** IS graduate Committee (2024-current)
2. **IS Department** Faculty Search Committee (2024-current)
3. **IS** Master Program Admission Committee (2023-2024)
4. **IS** Post-Tenure Review Committee for Anita Komlodi (2024)
5. **IS Department** HCC graduate committee (2021, 2023, 2024)
6. **IS graduate program**, GPD (2020-2021)
7. **IS graduate program committee,** Chair (2020-2021)
8. **Health IT MPS Program**, Interim GPD (2019-2020)
9. **Health IT MPS Program,** GPD Search Committee Member **(**2019-2020)
10. **IS Department** IS graduate committee, member (2019-2020)
11. **IS Department** HCC graduate committee (2018-2019)
12. Panelist for **Information System Department, PhD day** (2020).
13. **IS Department** AI/KM Faculty Search Committee Member (2018-2019)

14. **IS Department** P&T Teaching Guidelines Revision Committee (2018)
15. Panelist for Information Systems Council of Majors (2018)
16. **IS Department** Faculty Search Committee (2017-2018)
17. **IS Department** Faculty Merit Review Committee (2018 and 2017)
18. **IS Department** Research Committee (2015, 2016)
19. **IS Department** Library Committee (2016)
20. Referee for **IS Department** Student Poster Competition (2016)
21. Panelist for **IS Department** Student Proposal Writing Workshop (2016)
22. Academic Advisor for **IS Department** master students (2015-current)

Service to the Profession

Chair

1. **Workshop co-chair,** International Workshop on Digital Twins for Smart Health. WWW 2023.
2. **Area chair,** EMNLP industry track, 2022.
3. **Conference program committee chair,** IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2020.
4. **Conference General Co-chair,** ACM International Conference on Intelligent User Interfaces (IUI), 2019.
5. **Workshop Co-chair,** NSF Workshop on Including Ethics in Data Science Pedagogy**,** 2019**.**
6. **Multidisciplinary Track Chair,** IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, 2019.
7. **Area chair,** Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT) 2019.
8. **Committee Chair,** Lasting Impact Paper Award Committee, IUI 2019.
9. **Committee Chair,** Best Paper Award Committee, ACM Transactions on Interactive Intelligent Systems (TIIS), 2017-2018.
10. **Workshop Co-chair,** *Artificial Intelligence and Computational Psychology*, the joint workshop program of IJCAI/ECAI/ICML/AAMAS, 2018.
11. **Workshop Co-chair,** *workshop on Speech and Language Interaction***,** MobileHCI, 2018.
12. **Meta Area Chair**, Annual Conference of the Association for Computational Linguistics (ACL) 2017.
13. **Workshop Co-chair,** *Workshop on Designing Speech, Acoustic and Multimodal Interfaces*, ACM Conference on Human Factors in Computing Systems (CHI), 2017.

14. **Workshop Co-chair,** Designing *Speech and Multimodal Interactions for Mobile, Wearable, and Pervasive Applications***,** ACM Conference on Human Factors in Computing Systems (CHI), 2016.
15. **Workshop Co-chair,** *Data Mining in Translational Biomedical Informatics*, IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2016.
16. **Technical Program Committee Co-chair**, ACM International Conference on Intelligent User Interfaces (IUI), 2015.

Journal Editorial

1. **Special Issue Editor,** International Journal on Artificial Intelligence Tools, Volume 31 (2022)
2. **Associate Editor**, ACM Transactions on Interactive Intelligent Systems (TIIS) (2016- current)
3. **Special Issue Editor, "**Responsible AI and Human-AI Interaction, " IEEE Data Engineering Bulletin (2021)
4. **Special Issue Editor, "**Interdisciplinary Perspectives on Fairness and Artificial Intelligence Systems," IEEE Data Engineering Bulletin (2020)
5. **Special Issue Editor, "**Data-driven Personality Modeling for Intelligent Human-Computer Interaction", ACM Transactions on Interactive Intelligent Systems (TIIS) (2018-2020)
6. **Special Issue Editor,** "Highlights of Intelligent User Interfaces 2015", ACM Transactions on Interactive Intelligent Systems (2015-2016)

Committee Member

1. **Steering Committee Member**, ACM International Conference on Intelligent User Interfaces (IUI), (2019-)
2. **ACM IUI 2024 Lasting Impact Paper Award Selection Committee** (2024)
3. **Program Committee Member,** EMNLP, (2018, 2017 and 2012)
4. **Program Committee Member,** ICTAI, 2018.
5. **Program Committee Member,** *NAACL-HLT*, 2019, 2018.
6. **Program Committee Member**, International Joint Conference on Artificial Intelligence (***IJCAI***) (2021, 2020, 2018, *2013 and 2011*)
7. **Program Committee Member,** ACM Conference on Information and Knowledge Management (CIKM), 2016.
8. **Senior Program Committee**, ACM International Conference on Intelligent User Interfaces (IUI), 2014
9. **Program Committee Member**, ACM International Conference on Intelligent User Interfaces, ***IUI*** (*2013, 2012, and 2009)*
10. **Program Committee Member**, ACM Recommender Systems, RecSys (*2013, 2010, 2009, 2008*)
11. **Program Committee Member**, Annual SIGdial Meeting on Discourse and Dialogue (***SIGDIAL***) (2011)

12. **Program Committee Member**: IUI workshop on Intelligent User Interfaces for Text Analysis (2009)
13. **Program Committee Member**, IUI workshop on IUI4DR (2008)
14. **Program Committee Member**, ACL SIGHAN workshop (2005 and 2003)
15. **Program Committee Member**, International Conference on Natural Language Generation (***INLG***), 2004

Journal/Conference Reviewer

1. **Reviewer,** Journal of Information and Management, 2018.
2. **Reviewer,** ACM Transactions on Interactive Intelligent Systems (TIIS), 2017.
3. **Reviewer**, ACM Transactions on Interactive Intelligent Systems (TIIS), 2015**.**
4. **Reviewer**, ACM Transactions on Intelligent Systems and Technology (TIST), 2015.
5. **Reviewer**, ACM Transactions on Intelligent Systems and Technology ***(TIST)*** (*2013*)
6. **Reviewer**, IEEE EuroVis (2011)
7. **Reviewer**, ACM SIGCHI Conference on Human Factors in Computing Systems (***CHI***) (2010 and 2009)
8. **Reviewer**, ACM Transactions on Intelligent Systems and Technology ***(TIST)*** (2010)
9. **Reviewer**, Conference on User Modeling, Adaptation, and Personalization (***UMAP***) (2009)
10. **Reviewer**, The 22nd International Conference on Computational Linguistics (***COLING***) (2008)
11. **Reviewer**, International Joint Conference on Natural Language Processing (IJCNLP) (2008 and 2007)
12. **Reviewer**, Journal of Information Science and Engineering (***JISE***) (2007)
13. **Panelist,** ACL Student workshop *(2005)*
14. **Reviewer**, Journal of Artificial Intelligence (2005)
15. **Reviewer**, Computational Linguistic (***CL***) Journal (2002)

Other Professional Services

1. **Co-Instructor**: tutorial on How to Design a Fair Data Mining System: Navigating the Trade-Offs, SDM 2023.
2. **Mentor:** mentoring undergraduate and PhD students on research projects at Heidelberg University and Heidelberg Institute for Theoretical Studies, (2022-2023)
3. **Founding member** of the Digital Twins for Health Consortium (2022-)
4. **Panelist,** NIH National Institute on Alcohol Abuse and Alcoholism (NIAAA)'s High Intensity Drinking working group meeting, 2018.
5. **NSF proposal review panelist** *(2024, 2021, 2019, 2018, 2012, 2009, 2007, and 2002).*
6. **Mentor,** ACM CRA Woman career mentoring workshop (2009)

Other Community Services

1. Supervising three High School Students on Research Projects (2020-2022).
2. Serving on the Baltimore County Public School system (BCPS) CTE Artificial Intelligence/Machine Learning Advisory Committee (2021)
3. Mentoring high school senior on a Capstone project on "Deep Learning", Michael Suehle, Calvert Hall College High School in Towson, Maryland (2018)
4. Volunteering at local high school, River Hill high School, Clarksville, MD (2020, 2019).

Richard G. Sponaugle Jr

Education

MS, UMBC, 1997.
Major: Information Systems

BS, UMBC, 1995.
Major: Information Systems

Montgomery College, 1993.
Major: Computer Science

Experience in Higher Education

University of Maryland, Baltimore County

September 2021 – Present	Undergraduate Program Director, IS
July 2019 - Present	Senior Lecturer Department of Information Systems
September 2018 – August 2021	Associated Undergraduate Program Director
January 2014 – June 2019	Lecturer Department of Information Systems
August 2007 – December 2013	Adjunct II Faculty Department of Information Systems
July 2001 – July 2007	Director, Information Systems Undergraduate Program at the Universities at Shady Grove
June 1996 – October 1998	Adjunct Faculty Information Systems

Experience in Other than Higher Education

Office of Health Care Quality, Department of Health and Mental Hygiene, State of Maryland

August 2007 – December 2013	Database Specialist Supervisor Responsible for overseeing all software development in the office and recommending new direction in the handling of the extensive data collected and used by the office.

Office of Generic Drugs, Center for Drug Evaluation and Research, FDA

October 1998 – July 2001	Computer Specialist As the Senior Systems Engineer on the Electronic Submission project had overall responsibility for developing, maintaining and supporting the computer programs and procedures for the electronic submission project as well as various other projects in the office

University of Maryland, Baltimore County

January 1998 –	Project Manager, UMBC-FDA Electronic Submission Project

October 1998

October 1996 – December 1997 Coordinator, Program Development and Training

TEACHING

Recent Teaching Experience
University of Maryland, Baltimore County
IS 304, Ethical Issues In Is, 5 courses.
MGMT 210, The Practice Of Management, 1 course.

SERVICE

University Service

Committee Chair, IS Undergraduate Education Committee. (August 1, 2021 - Present).

New Faculty Recruting. (January 16, 2020 - Present).

Attendee, Meeting, COEIT UPD Group. (September 1, 2019 - Present).

Committee Member, IS Department Adjunct Committee. (September 1, 2019 - Present).

Committee Member, Undergraduate Council. (September 1, 2019 - Present).

Attendee, Meeting, UMBC UPD Group. (September 1, 2018 - Present).

Committee Chair, General Education Review Committee. (June 1, 2018 - Present).

Student Letters of Recommendations. (January 1, 2018 - Present).

Committee Member, GEP Review Committee. (September 2, 2014 - Present).

Attendee, Meeting, Academic Advising Community. (January 1, 2014 - Present).

Committee Member, IS Undergraduate Education Committee. (January 1, 2014 - Present).

Mohammad Samarah, PhD

2 Hopkins PL #1210, Baltimore, MD, 21201 ● (321) 258-0548 ● samarah.ms@icloud.com

Faculty – Software Engineering
Big Data • Intelligent Applications • Real-time Systems

A computer scientist with proven experiences in teaching, industry, and research. A strategist envisioning future trends and technology direction with extensive experiences in developing programs and creating engaging content. Track record of bringing world-class learning solutions and research programs into service. Research interests in the intersection of big data, intelligent applications, and real-time systems. Master and PhD in Computer Science.

Leadership and Area Competencies

- Big Data
- Intelligent Applications
- Real-time Systems
- Software Engineering Innovations
- Health Informatics
- Smart Devices
- Technology and IP Integration
- Business Process Re-engineering
- Strategy Development and Execution

University of Maryland Baltimore County (UMBC), Baltimore, MD **Aug. 2021-present**
A public research university classified among R1 Doctoral Universities with Very High Research Activity

Graduate Program Director, MPS Software Engineering
Professor of Practice, Software Engineering
Aug. 2021-present
Managing the Master's in Professional Studies Program in software engineering leading teaching and applied research projects in software engineering with partners in academia, industry, government, and NGOs. Working to promote a new vision for software engineering to prospective students, the UMBC community, educational partners, and beyond that software must be ethical, reliable, and beautiful. And that now that our lives depend on software intensive products, these three attributes must be embodied in the software engineering practice while the software is being conceived, designed, developed, deployed, maintained, and managed.

Founder of the UMBC Ethical Software Lab
March 2023-present
Founded the UMBC Ethical Software Lab along with Dr. Melissa Morris with initial funding through a UMBC FY24 Cyber Exploratory Grant. The lab mission is to verify the ethicality of software applications and software intensive products independently and impartially on consumer devices as they are used in the real world and give users clear and concise information regarding terms of service, privacy policy, and the use of their data and hardware resources. The lab vision is to be the trusted and go-to lab for reliable, independent, and accurate ethicality verification of software applications and software intensive products for users, consumers, and software developers and be a valued educational resource for how to use software while maintaining well-being, ethical use, and privacy.

University of Miami, Miami, FL **Mar. 2020-present**
A private research university in Coral Gables

Faculty Affiliate
Conducting research in axon regeneration as a founding member of the Computational Cluster of the Miami Integrative Metabolomics Research Center (MIMRC) part of Bascom Palmer Eye Institute at the University of Miami, College of Medicine.

EnMedical Systems, Melbourne, FL **Jan. 2020-present**
A high-tech firm providing advising and custom solutions in big data, emerging applications, process re-engineering and optimization, systems integration and workflow automation, and large-scale enterprise systems

Advisor
Providing engineering consultation in software, big data, enterprise applications, and clinical systems. Conducting research with the University of Miami, College of Medicine.

Carroll University, Waukesha, WI **Jan. 2020-May 2021**
Wisconsin's first institution of higher learning with 95 areas of study including graduate and clinical doctorate programs

Chief Technology Officer

- Leading and managing all aspects of university wide information technology for staff, faculty, and students in 95 areas of study across academic colleges, the center for graduate studies, and prairie springs environmental education center with academic facilities in 5 locations.
- Moved the university to online teaching, online learning, and remote work in spring 2020. Deployed a multi-modal instruction and blended work environment in fall 2020 turning every classroom into a mini production studio with the ability to record and live cast.
- Working on innovative teaching and learning initiatives with office of partnerships and innovation, college of health sciences, school of business and technology, and the analytics and business intelligence consortium. Working with industry partners on innovations in 3D learning and adaptive learning platforms.
- Working with the University of Miami on a research project to create a knowledge platform for visualizing nerve regeneration and muscle reinnervation of neurological optical paths, digitizing and visualizing research findings from the period of the 1700s to present.
- Developed a multi-year technology strategy for a vision of the future of higher education informed by the rise of artificial intelligence education applications, smart campus environments, and the next evolution of ICT (Information and Communication Technologies) including edge computing, quantum computing, and 5G.

EnMedical Systems, Melbourne, FL **Aug. 2011-Dec. 2019**
A high-tech startup providing advising and custom solutions in informatics, healthcare, and large-scale enterprise systems

President and Cofounder
Providing IT strategy, engineering consultation and technology evaluation in software, informatics, big data, enterprise applications, and medical systems to clients in Florida, New England, Seattle, and Southern California.

Florida Polytechnic University, Lakeland, FL **Aug. 2015-Dec. 2019**
Leading institution for STEM learning and research through interdisciplinary teaching, leading-edge research, and collaborative local, regional, and global partnerships

Assistant Professor of Computer Science and Big Data Analytics
Aug. 2015-Dec. 2019
Teaching graduate and undergraduate courses in software engineering, computer science, informatics, and big data analytics. Building out an autonomous systems research group and a center of excellence for software engineering innovations. Assisting in building and growing the graduate school. Conducting applied research in software engineering, intelligent applications, and real-time autonomous systems.

Founder of the IDEA Research Group
Summer 2018-Dec. 2019
Founded the IDEA Research Group in Summer 2018 with a focus on the intersection of Big Data, Intelligent Applications and Real-time Systems. The research efforts are toward developing and advancing intelligent devices, environments, and applications. Invited collaborators from Florida Polytechnic University, University of Miami, Vanderbilt University, and Industry. Currently, there are three studies in progress.

Graduate Program Director
College of Engineering and College of Innovation & Technology
Aug. 2015-Dec. 2016
Founding member of the graduate program for the college of engineering and college of innovation and technology. Worked with Academic Affairs on a roadmap and a strategy for growing the graduate school. Promoted the graduate programs with prospective students, families, and companies in Central Florida. Worked with the Admission Office to attract international students. Served as the accreditation lead through SACSCOC (Southern Association of Colleges and Schools Commission on Colleges) accreditation and mentored junior faculty during ABET (Accreditation Board for Engineering and Technology) accreditation.

ePath Learning Inc., New London, CT **Jul. 2012-Dec. 2013**
Leader in cloud-based content and learning management solutions

Vice President of Engineering and CIO: Responsible for overall direction and strategy of IT, Engineering and Product Management. Focused on making ePath Learning a leader in the Learning Management Systems (LMS) space and the premier cloud provider of enterprise Knowledge Management solutions. Managing four product lines across multiple verticals.

- 400,000 users of B2B enterprise SaaS system.
- More than 150 clients managed including top Fortune 100, highly acclaimed associations, and top academic institutions.
- Working with cross-functional team on execution of next generation roadmap.

Emulex Corporation, (NYSE: ELX), Costa Mesa, CA **Nov. 2008-Aug. 2011**
Leader in converged networking solutions for enterprise data centers

Senior Director of Engineering: Managed all aspects of software and firmware development for an engineering organization in multiple locations. Managed product development from concept through market introduction for 6 new products targeted at OEMs including IBM, Dell, LSI Logic and Xyratex.

- 70-person engineering organization in multiple locations.
- 60% reduction in development cost while maintaining superior product quality by creating an offshore organization.
- Deployed a continuous integration and metrics framework reducing defects found in the field by more than 50%.
- Successfully delivered a hardware development kit (HDK) to a large network device vendor for use in their converged switch product. The HDK generated $1M in revenue directly related to reuse of firmware and software components.
- Active member of corporate-wide bodies including Product Review Council, World Class Engineering Initiative and Open-Source Review Board for product development processes and personnel for seven R&D sites and more than 500 engineers with $130M yearly development budget.
- Drove innovation and resource utilization as part of the Advanced Development Organization in the CTO office. Working with marketing on leveraging efforts into new applications and driving strategic innovations in secure storage, anti-piracy methods for high value ASICs, cloud computing, SaaS, and software-based appliances.
- Performed M&A technical due diligence and post IP acquisition of a virtualization and PCIe Shared IO startup based in Austin, TX.
- $100M annual sales for development programs managed with gross margins ranging from 40% to 60%.

Mediaspan, Melbourne, FL; Ann Arbor, MI **Jan. 2006-Oct. 2008**
Spinoff from Harris Corporation (NYSE: HRS), Melbourne, FL
Provider of enterprise software and hardware solutions for digital content management and advertising

Vice President of Research and Development: Managed all aspects of research and development for an engineering organization in multiple locations with $20M in sales. Managed the design and implementation of several product lines from concept through market introduction.

- 80-person engineering organization in multiple locations.
- Introduced advances from the fields of Software Engineering, AI, Knowledge Management (KM), Open-Source Software (OSS), Federated Databases and Intelligent Automation landing multiple wins in the US and overseas.
- Served as the organization representative on industry consortia promoting open collaboration and innovation happens elsewhere vision making Mediaspan one of the top three recognized vendors.
- Worked with key international outsourcing and offshore entities on initiatives for establishing R&D centers in Asia. This effort resulted in increased efficiencies and provided growth opportunities in new markets in India and China.
- Negotiated and managed development agreements with Apple, IBM, Informix, Adobe, Oracle, Sun Microsystems, and MySQL reducing licensing fees by a factor of two.
- 40% cost reduction in development of a SaaS platform resulting into new opportunities in adjacent verticals.

Harris Baseview, Melbourne, FL; Ann Arbor, MI **Jan. 2004-Dec. 2005**

A division of Harris Corporation (NYSE: HRS), Melbourne, FL

Provider of print, online and wireless enterprise software and hardware solutions for media publishers and advertisers

Vice President of Technology: Managed research and development activities, system architecture and defined overall technical directions. Managed the design and implementation of several product lines from concept through market introduction including a real-time wireless system and a real-time syndication engine winning a major international news agency.

- 120-person engineering organization in multiple locations.
- Managed engineering teams with J2EE & C/C++ with cross-platform environment introducing innovations from the fields of AI, Knowledge Management and text mining bringing the first true cross platform to market.
- Worked with a cross-functional team on M&A activities expanding our portfolio into TV, Radio, and Mac platforms.
- Established development agreements with IBM, Informix, JBOSS and MySQL for media enterprise solutions.
- Active member of integration team of Baseview Products. Successfully performed due diligence with new partners.

Harris Publishing Systems (NYSE: HRS), Melbourne, FL **Jan. 2002-Dec. 2003**

A division of Harris Corporation (NYSE: HRS), Melbourne, FL

Provider of integrated new media software and hardware solutions for the media and publishing industry

Director of Technology: Responsible for overall system design and architecture of next generation systems, providing technical directions to engineering teams across company campuses. Served as spokesman on advanced development programs and as a technical advisor to senior management and business partners.

Florida Institute of Technology, Melbourne, FL **May 2001-June 2003**

Tier one ranked technical research university focused on engineering and science in Florida's Space Coast high-tech region

Adjunct Faculty: Instructed graduate level computer science and software engineering courses. Conducted research in software engineering, real-time embedded systems, mobile code, and information security.

Harris Electronic Systems (NYSE: HRS), Melbourne, FL **Nov. 1998-Dec. 2001**

A division of Harris Corporation (NYSE: HRS), Melbourne, FL

Manufacturer of digital devices, wireless systems, broadband wireless products, communication, and information systems

Chief Engineer: Responsible for system design and architecture leading engineering teams with expert technical directions and guidance. Managed the design and development of next generation content management system.

Integrated Software Systems, Melbourne, FL **Oct. 1990-Nov. 1998**

A high-tech startup designing high-speed switches, data acquisition products and enterprise software solutions

Principal Computer Engineer: As a founding member of a high-tech startup, led the design and development of a large-scale document, content management and text mining system. Introduced and monetized a high-speed switch for use in imaging devices. Played a key role in acquisition and IP integration into Harris Corporation.

Northern Arizona University, Flagstaff, AZ **Aug. 1989-May 1990**

A research university with high research activity as classified by Carnegie Classification of Institutions for Higher Education

Computer Specialist: Provided consulting services to senior management and the office of University Planning and Analysis. Provided statistical models to project enrollments attrition and revenue forecasts using SPSS.

EDUCATION

PhD in Engineering, GPA 4.0 – Computer Science, Florida Institute of Technology, 2003
MS in Engineering, GPA 4.0 – Computer Science, Florida Institute of Technology, 1999
BS of Engineering – Computer Science & Engineering, Northern Arizona University, 1990

Publications and Industry Research

1. Nguyen, Sherilyn, Lens, Alexandra, Morris, Melissa, Samarah, Mohammad, "A Comparison of Axon Regeneration in Xenopus and Danio rerio," Book co-editors: Emily Neag, Sanjoy Bhattacharya. To appear in Proteomics, Multi-Omics and Systems Biology in Optic Nerve Regeneration Book to be published by Elsevier; Sept. 1, 2024.
2. Inuganti, Aikya, Goyal, Madhuri, Samarah, Mohammad, "Software Engineering Education: Towards Ethical, Reliable, and Beautiful Software," to appear in the 2024 IEEE International Workshop on Designing Software, Co-located with ICSE 2024, Lisbon, Portugal, Apr. 15, 2024.
3. Samarah, Mohammad, Ocansey, A.K., Samarah, Esaa Mohammad Sabti, Babalola, Olufunmilola. "Bringing Diversity in Software Engineering Education from the Middle East and Africa," Book co-editors: Damian, Daniela, Blincoe, Kelly, Masood, Zainab, Devathasan, Kezia. To appear in Equity, Diversity, and Inclusion in Software Engineering: Best Practices and Insights Book to be published by Apress; 1st ed.; March 28, 2024.
4. Khosla, Shaan & Abdelrahman, Leila & Johnson, Joseph & Samarah, Mohammad & Bhattacharya, Sanjoy. (2022). "RegenX: an NLP recommendation engine for neuroregeneration topics over time," Ann Eye Sci. 2022 March; 7: doi:10.21037/aes-21-29.
5. Meehan SD, Abdelrahman L, Arcuri J, Park KK, Samarah M, Bhattacharya SK. "Proteomics and systems biology in optic nerve regeneration," Adv Protein Chem Struct Biol. 2021;127:249-270. doi: 10.1016/bs.apcsb.2021.03.002. Epub 2021 Apr 22. PMID: 34340769.
6. M. Z. Chauhan, J. Arcuri, K. K. Park, M. Khan Zafar, R. Fatmi, A. S. Hackam, Y. Yin, L. Benowitz, J. L. Goldberg, M. Samarah, S. K. Bhattacharya: "Multi-Omic Analyses of Growth Cones at Different Developmental Stages Provides Insight into Pathways in Adult Neuroregeneration," iScience. 2020 Feb 21;23(2):100836. doi: 10.1016/j.isci.2020.100836, Feb. 21, 2020.
7. H. Chao, B. Stark, and M. Samarah, "Analysis of Learning Modalities Towards Effective Undergraduate Cybersecurity Education Design," 2019 IEEE International Conference on Engineering, Technology, and Education (TALE), Yogyakarta, Indonesia, Dec. 10, 2019.
8. B. Stark and M. Samarah, "Ensemble and Deep Learning for Real-time Sensors Evaluation of algorithms for real-time sensors with application for detecting brushing location," 2019 IEEE 5th International Conference on Computer and Communications (ICCC), Chengdu, China, 2019, pp. 555-559, doi: 10.1109/ICCC47050.2019.9064080, Dec. 6, 2019.
9. Samarah M., Stark B., Love, J., Payton, L.: "The Keys to Innovation: Defining and Evaluating Attributes that Measure Innovation Capabilities," The international conference on Creativity and Innovation Management, New York City, April 22, 2019.
10. Aydin, M., Samarah, M., Elish, K.: "Enabling Smart Cities Through V2X Communication," IEEE 4th International Conference on Computers and Communications, Chengdu, China, December 2018.
11. Z. Chauhan (University of Miami Miller School of Medicine), M. Samarah (CS and Big Data Analytics, Florida Polytechnic University), Kim M. Unertl (Biomedical Informatics, Vanderbilt University School of Medicine), and Martha W. Jones (Center for Medicine, Health, and Society, Vanderbilt University): "Adoption of Electronic Dental Records: Examining the Influence of Practice Characteristics on Adoption in One State," The Journal of Applied Clinical Informatics (ACI), June 12, 2018.
12. Stark, B., Samarah M.: Mac7: "Adaptive Smart Toothbrush - Can Your Smart Toothbrush Improve Your Overall Health?", The International Conference on Sensing, Diagnostics, Prognostics, and Control (SDPC 2018), Xi'an, China, August 15-17, 2018.
13. M. Samarah, R. Fatmi: "Dynamic Self-Assembling Petaflop Scale Clusters: Your mobile device may find the cure for cancer," The 2017 International Conference on High Performance Compilation, Computation and Communications (HP3C 2017).
14. B. Stark, C. Knahl, M. Ayden, M. Samarah, K. Elish: "BetterChoice: A Migraine Drug Recommendation System Based on Neo4J," Second IEEE International Conference on Computational Intelligence and Applications (ICCIA 2017).

15. Knahl, C., Samarah, M.: "A proposal for a German nation-wide vaccination system: Empowering patients through digital involvement," oral presentation at the Young Investigators Award session, 4th European Congress on eCardiology and eHealth Conference, Connecting Clinicians and Technology to Implement E-health in Daily Practice, Berlin, Germany, November 8-10, 2017.
16. Vaccination Adoptions in Young Children: Influencing Vaccine Uptake. Study and evidence-based health information system using multiple real-time data sources including Florida SHOTS, Medicaid and CDC datasets designed for the University of Florida College of Medicine, 2016.
17. Digital Imaging Systems: internal research on combining open-source image formats along with proprietary formats to enable better sharing and integration of health care systems, EnMedical Systems LLC, 2015.
18. Decision-Oriented Medical View: internal research and as part of the implementation of a new UI for presenting soft and hard tissues in a single view. EnMedical Systems LLC, 2014.
19. Dental Practice and Clinical Management Systems: internal research and as part of the design for a new practice and clinical management system, EnMedical Systems LLC, 2013-2015.
20. Blending Learning and Content Management Systems: internal research for creating more efficient learning platform, E-Path Learning Inc., 2012-2013.
21. Self-Healing and Self-Monitoring ASIC: internal research and as part of the design for a new high speed ASIC switch. Emulex Corporation, 2011.
22. Big Data in Small Form: internal research and as part of the design for a system for recording millions of hardware and software events in a small and constrained memory space. Emulex Corporation, 2010.
23. World-class engineering organizations: achieving 10x productivity with sustainable high reliability. Internal research and as part of an improved engineering program. Emulex Corporation, 2010.
24. Smart ASICs: internal research and as part of an improved design to enable detection of piracy in high-value ASICs. Emulex Corporation, 2009.
25. Native UIs and User Satisfaction: internal research to determine effectiveness of native user interfaces vs. HTML and markup-languages-based interfaces, Mediaspan Group (Spinoff from Harris Corporation), 2008.
26. Open-Source Software in Convergence: internal research for blending open-source software and hardware with commercial off the shelf components and proprietary IP to achieve higher order systems, Mediaspan Group (Spinoff from Harris Corporation), 2008.
27. Twitter As a Reputation Platform: internal research on Twitter introduction as a platform and how it can be leveraged for individuals and organizations reputation and sentiment analysis, Mediaspan Group (Spinoff from Harris Corporation), 2007.
28. Convergence of User Interfaces: Native, Hybrid, Mobile and Web. Internal research in finding the best user interface modality given the convergence of native, hybrid, mobile and web user interfaces, Harris Baseview (A division of Harris Corporation), 2006.
29. Hybrid Cloud Systems for Large Clusters: internal research on deploying hybrid private and public clouds to manage and analyze large clusters of multi-media and high-fidelity data, Harris Baseview (A division of Harris Corporation), 2006.
30. Knowledge Management for Small and Medium Organizations: internal research for applying Knowledge management, AI, and text mining to enable efficient communication, collaboration and information access within an organization, Harris Baseview (A division of Harris Corporation), 2005.
31. Real-time KM assistant: A Knowledge Management System for providing insights from organizational data to suggest resources and human contacts in real-time. Internal research, Harris Baseview (A division of Harris Corporation), 2005.
32. Text Mining of Highly Unstructured Data: internal research and as part of the design of a real-time research assistant and content recommendation system, Harris Baseview (A division of Harris Corporation), 2004.
33. Toward Secure Embedded Real-Time Mobile Code, Dissertation, Florida Institute of Technology, 2003.
34. Autobot: A workflow automation engine for real-time transformation and delivery of text, images, video, and binary content. Harris Baseview (A division of Harris Corporation), 2002.
35. Real-time Workflow Automation: internal research, and as part of the design of a new platform for processing real-time events and high velocity sensor data, Harris Baseview (A division of Harris Corporation), 2002.
36. M. Samarah and P. Chan. "Distributed Communication for Highly Mobile Agents," Fourth Pacific Rim International Conference on Multi-agents, Taipei, Taiwan, 2001.

37. Real-time alerts: internal research for using real-time notifications to enable smart full text search and routing of contents and requests. Harris Electronic Systems Corporation, 2001.
38. XML dB-to-dB Communications, M. Samarah, Internal research for enabling the integration of multiple database technologies, Harris Electronic Systems Corporation, 2001.
39. Enabling Mobile Agents Communication, M. Samarah and P. Chan, Florida Institute of Technology, Technical Report CS2000-3, 2000.
40. AGI: A Communication Architecture for Mobile Agents, M. Samarah, Thesis, Florida Institute of Technology, 1999.

Peer Review Activities

- IEEE SWEBOK v4 Reviewer: Public reviewer for IEEE-CS Version 4 of the Guide to the Software Engineering Body of Knowledge (SWEBOK Guide V4), Feb. 2024.
- Technical committee member and invited speaker for the 2019 4th International Conference on Computational Intelligence and Applications, held at Nanchang University, China, June 21-23, 2019.
- Technical committee member for the 2019 IECC International Electronics Communication Conference (IECC 2019), Okinawa, Japan, July 7-9, 2019.
- Technical committee member and session chair for the Future Communications session in the 2018 4th IEEE International Conference on Computer and Communications (ICCC 2018), Chengdu, China, December 7-10, 2018.
- Program committee member for the 2018 International Conference on Sensing, Diagnostics, Prognostics and Control (SDPC 2018). Xi'an, China, August 15-17, 2018.
- Program committee member of the 2018 IEEE SmartIoT. Xi'an, China, August 17-19, 2018.
- Faculty member of NSF's XSEDE Foundation (Extreme Science and Engineering Discovery Environment) parallel applications course, and in collaboration with University of Ohio, Ohio Supercomputer Center (OSC), and UC Berkeley. Primary investigator Dr. Steven Gordon, Spring 2018.
- Technical Program Committee member for the 2018 4th International Conference on Computers and Communication (ICCC 2018).
- Program Committee member for the 2018 IEEE International Conference on Smart Internet of Things (SmartIoT 2018).
- Technical Program Committee member for 2018 3rd IEEE International Conference on Computational Intelligence and Applications (ICCIA 2018).
- Technical Program Committee member for the 2017 IEEE workshop on Automation of Cloud Configuration and Operations (ACCO 2017).
- Technical Program Committee member for the 2017 2nd IEEE International Conference on Computational Intelligence and Applications (ICCIA 2017).
- Invited reviewer for the Cluster Computer 2016, The Journal of Networks, Software Tools and Applications published by Springer.

Mentoring Experience

- Faculty judge: UMD Info Challenge 2024. Serving as a UMCP Info Challenge 2024 faculty judge, to take place on March 2, 2024.
- Faculty advisor: Advised software engineering professionals on coursework and career directions including a female student from Africa promoting software engineering as a career path for women and people of color, 2022-2024. Average cohort size of 25 students.
- Faculty advisor: Advised prospective and active software engineering graduate students, 2022-2024. Average pool size of 50 students.
- Faculty advisor: Advised non-software engineering graduate students from CS, IS, HCC, and Data Science on coursework and career preparation, 2022-2024. Average non-major cohort size of 10 students.
- Faculty mentor: Served as a faculty advisor and a judge for CMSC 447, Software Engineering I Capstone Project. Reviewed student projects at the end of the semester, April 2021, April 2022. Average class size 20 students.
- Faculty judge: Served as a faculty judge in the Information Systems Student Research Symposium, 2022, 2023. Average number of students judged 10 students.

- Guest speaker: UMBC Faculty Senate, presented an overview of USM CUSF (Council on University System Faculty) as it relates to shared governance and provided a report of planned activities for AY22/23, October 11, 2022.
- Faculty advisor: McNair Scholars Research Conference. Served in the McNair Scholars Research Conference as a faculty advisor. Ran poster sessions. Served as an oral moderator for breakout sessions, Sept. 2022, Sept. 2023.
- Faculty judge: UMD Info Challenge 2023. Served as a UMCP Info Challenge 2023 faculty judge, March 30, 2023.
- Faculty mentor: Transfer Seminar, TRS 201, Sept. 19, 2022.
- Faculty advisor: Participant in Miami Integrated Metabolomics Research Center (MIMRC), Miller School of Medicine, University of Miami research group mentoring students of varied backgrounds providing an opportunity to present UMBC software engineering graduate program to students at different levels and backgrounds, Mar. 2020 to present.
- Student thesis: A Professional Certification Based Workshop Series for Cyber Security Education, 2018.
- Student thesis: Adaptive smart toothbrush design using machine learning and advanced sensors to measure seven key metrics of a patient dental hygiene regimen, 2017.
- Student thesis: A blueprint and overall architecture for a nation-wide vaccination system. This is a critical aspect of health care for children and yet many developed nations do not have this capability, 2017.
- Independent research in machine learning and health informatics for student Ben Stark. Studying adaptive smart devices and their effects on patient health, 2017.
- Independent research in health informatics for student Constanze Knahl. Studying Health IT systems adoption across developed and developing nations, 2017.
- Project committee member for student Aswini Indukuri. Project topic: Predictive Analytic Model for Airline Performance Using Big Data, 2017.
- Thesis committee member for student Rabeet Fatmi. Thesis topic: Automatic Translation of Sign Language to Speech using Myo Gestural Devices, 2017.
- Thesis committee member for student Langley Payton. Thesis Topic: Event registration rates rise as the day draws near – or maybe not? A QGIV Case Study, 2017.
- Thesis committee chair for student Ben Stark. Thesis topic: Adaptive Smart Toothbrush Devices. It studies a new design for measuring seven key metrics to provide an insight into the user's brushing habits with a goal to improve the patient overall health, 2017.
- Thesis committee chair for student Constanze Knahl. Thesis topic: Designing a nation-wide vaccination system. It studies the ability to create a blueprint to be used by industrialized and developing nations to deploy their own vaccination system and offers an architecture for potential use by WHO, the World Health Organization, 2017.
- Langley Payton, MS in Engineering student, Florida Polytechnic University, (2015 – May 2017): Maximizing donor conversions: A predictive model for successful donor conversion, 2017.
- Rabeet Fatmi, MS in Innovation and Technology student, Florida Polytechnic University (2015 – May 2017): Design and Implementation of an Innovative Systems for Automatic Conversion from American Sign Language to Speech, 2017.
- Derek Williams, Juan Rodriquez, Justin Cushing and John Ryde, BS in Computer Science students, Florida Polytechnic University (2016): Influence Mind, device to track and manage influence sphere of an individual over time, 2016.
- Mustafa Hussein, MS in Innovation and Technology, Florida Polytechnic University (2016): Analyzing patient monitoring systems with distributed cognition for teamwork, 2016.
- Richard Conn and Kyle Testorf, BS students, Florida Polytechnic University Bio-Expo (2016): Nanoribbons to Power Implantable Devices.
- Mark Hamilton and Russell McCreary, MS in Innovation and Technology students, Florida Polytechnic University (2015-2016): Methods to improve IT and Health Informatics capabilities for the Haley Center, 2016.
- Jennifer Lovell, MS in Innovation and Technology student, Florida Polytechnic University (2015): A study of freshman success in Calculus I and offering a tailored primer course based on adaptive datasets, 2015.

- Jay Stannard, MS in Innovation and Technology student, Florida Polytechnic University (2015): Estimating Apartment Rent across Florida with Hedonic Regression, 2015.
- Jake Schiller, Brandon Aubele and Jonathan Cotton, BS students, Florida Polytechnic University Bio-Expo (2015): The natural process: teaching children the basics of biology using effective content mining and tailored responses, 2015.

Honors and Awards

- The 4th European Congress on eCardiology and eHealth Conference, the Young Investigators Award session: A proposal for a German nation-wide vaccination system: Empowering patients through digital involvement, Berlin, Germany, November 8-10, 2017.
- Florida Academy of Sciences award for outstanding oral presentation for "Maximizing Donor Conversions: A QGIV Case Study", faculty sponsor and industry contact for Qgiv and advisor for student Langley Payton. March 28, 2017.
- Runner-up best paper: "Dynamic self-assembling petaflop scale clusters: Your mobile device may find a cure for cancer" in International Conference on High Performance Compilation, Computing and Communications (HP3C-2017), March 23, 2017.

Invited Talks and Presentations

- Facilitated break-out table on "Reflection on our Own Practice" part of the UMBC Faculty Development Center 2024 Reflection Retreat, Jan. 18, 2024.
- "An Open-Source Robotics and AI Kit to Co-Create Hardware and Software Engineering Skills and Explore Ethical Implications of Its Use for Diverse Communities", Samarah, Mohammad, Morris, Melissa, Kephart, Kerrie, presentation at the 2023 Maryland OER Summit, Salisbury University, Dec. 1, 2023.
- Guest Speaker, CWIT Industry Mentoring Practicum, November 4, 2022, November 10, 2023.
- Multi OMIC Analysis and Visualization, presented at the Miami Integrated Metabolomics Research Center (MIMRC), Miller School of Medicine, University of Miami, July 24, 2019.
- Enabling Smart Cities Through V2X Communication: Presented at the 4th IEEE International Conference on Computer and Communications, Chengdu, China, December 7-10, 2018.
- Mac7: Adaptive Smart Toothbrush. Can Your Smart Toothbrush Improve Your Overall Health? Presented at the 2nd International Conference on Sensing, Diagnostics, Prognostics, and Control, IEEE CPS, Xi'an, China, August 15-17, 2018.
- The Keys to Innovation: Presented at the first Executive Leadership Course, Florida Polytechnic University, Lakeland, Florida, August 10, 2018.
- The parable of the Good Samaritan and the runner: Presented at Temple of Israel during the United in Thanksgiving annual event, Viera, Florida, November 20, 2018.
- Universal Values and Otherization: Presented at the Pineda Presbyterian Church, Melbourne, Florida, Feb. 21, 2018.
- Dynamic Self-Assembling Petaflop Scale Clusters, Florida Polytechnic University, Computer Science Research Seminar Series, Feb. 21, 2018.
- Ushering in New Hope in a World of Uncertainty, Temple Israel, Viera, Florida, December 3, 2017.
- United in Thanksgiving, Advent Lutheran Church, Suntree, Florida, November 20, 2017.
- Co-authored Presentation: Dynamic self-assembling petaflop scale clusters, presented at International Conference on High Performance Compilation, Computing and Communications (HP3C-2017) in Kula Lumpur, Malaysia, March 23, 2017.
- Common Values in Eastern and Western cultures, Advent Lutheran Church, Suntree Campus, Florida, March 18, 2017.
- Presentation of Computer Science and Graduate Programs during open information day, Florida Polytechnic University, Aula Magna, December 7, 2016.
- Presentation and training for admission counselors on Graduate Programs, Florida Polytechnic University, Office of Admissions, August 15, 2016.
- Universal Values and Otherization, Friendship Fellowship Unitarian Universalist, Melbourne, Florida, May 1st, 2016.

CURRICULUM VITAE

SREEDEVI SAMPATH

EDUCATION

Ph.D.	2006	University of Delaware, Computer and Information Sciences
M.S.	2002	University of Delaware, Computer and Information Sciences
B.S.	2000	Osmania University, Computer Science and Engineering

Experience in Higher Education

2013 – present	University of Maryland, Baltimore County, Associate Professor, Information Systems Department
2006 – 2013	University of Maryland, Baltimore County, Assistant Professor, Information Systems Department
2001 – 2005	University of Delaware, Research Assistant (supervised by Dr. Pollock), Department of Computer and Information Sciences
2000 – 2001	University of Delaware, Teaching Assistant, Department of Computer
2005 - 2006	and Information Sciences

Experience in Other than Higher Education

6/2005 – 8/2005	Microsoft India Development Center, India, Intern
6/2002 – 8/2002	Microsoft Research, Redmond, WA, Intern
1/2000 – 3/2000	Tata Consultancy Services, India, Project Trainee

Honors Received

2005	**Lauri Pfeffer Shinn Memorial Award,** Department of Computer and Information Sciences, University of Delaware
1996	**Ranked among Top Ten** in the Tenth Mathematical Quiz, Andhra Pradesh, India
1996	**State Merit Scholarship**, Cash Award given by Board of Intermediate Education, Andhra Pradesh, India

Research Support and / or Fellowships

7/2020-6/2023	$560,541, National Science Foundation, Co-PI
7/2018-7/2021	$330,000, Office of Naval Research, Co-PI
2/2010-2/2013	$128,000, National Institute of Standards and Technology (NIST), "Combinatorial-based Techniques for Web Application Test Selection" P.I. share: 50%
2010	$5000, UMBC Summer Faculty Fellowship, P.I.
2007	$5000, UMBC Summer Faculty Fellowship, P.I.

Ph.D. Students

Ronald Perrella, 2013 – 2023, chair of dissertation committee
Evelyn Kempe, 2022 – 2024, co-chair of dissertation committee.
Venkat Ganapathy, 2023-present, chair of dissertation committee, passed comprehensive exam

Elliot Talbert-Goldstein, 2023, member of dissertation committee
Indrajeet Ghosh, 2023, member of dissertation committee
Abdullah Aladeej, 2021, member of dissertation committee
Foteini Cheirdari, 2018—2019, member of dissertation committee

Updated: March 2021

Yuepu Guo, 2010 – 2017, member of dissertation committee
Susan Mitchell, 2009 – 2012, member of dissertation committee
David Trimm, 2007 – 2012, member of dissertation committee
Quyin Fan, 2008 – 2010, member of dissertation committee
Joyram Chakraborty, 2006 – 2009, member of dissertation committee

Elliot Talbert-Goldstein, 2022, member of comprehensive exam review panel
Debvrat Varshney, 2021, member of comprehensive exam review panel
Pretom Roy Ovi, 2021, member of comprehensive exam review panel
Evelyn Kempe, 2021, member of comprehensive exam review panel
Abdullah Aladeej, 2018, member of comprehensive exam review panel
Alden Dima, 2018, member of comprehensive exam review panel
Eric Holtegrefe, 2018, member of comprehensive exam review panel
Anamika Paul, 2017, member of comprehensive exam review panel
Foteini Cheirdari, 2017, member of comprehensive review panel
Onimi Jademi, 2017, member of comprehensive review panel
Doa Yakut Kilic, 2016, member of comprehensive review panel
Brian Frey, 2016, member of comprehensive review panel
Sajjad Hossein, 2015, member of comprehensive review panel
Osama Rabie, 2013: member of comprehensive review panel
Zelalem Bachore, 2009: member of comprehensive review panel
Mark Pohl, 2009: member of comprehensive review panel
Chelle Davis, 2009, member of comprehensive review panel
Yuepu Guo, 2009, member of comprehensive review panel
Carlton Crabtree, 2009, member of comprehensive review panel
Lisa Vizer, 2008, member of comprehensive review panel
Huijuan(Jocelyn) Wu, 2008, member of comprehensive review panel
Tamas Gal, 2007, member of comprehensive review panel
Matt Dinmore, 2007, member of comprehensive review panel
Ryan Getek, 2007, member of comprehensive review panel
Susan Mitchell, 2006, member of comprehensive review panel

M.S. Students

Completed

Nilesh Chaturvedi, 2012 – 2013, M.S. Thesis, Chair
Mohammed Aziz Parande, 2009, M.S. Thesis Committee Member
Nitin Takshande, 2010, M.S. Thesis Committee Member

Publications (student authors underlined)

Peer-reviewed (journal proceedings)

Wenhua Wang, **Sreedevi Sampath**, Jeff Lei, Raghu Kacker, Rick Kuhn, James Lawrence, "Modeling Navigation Graphs for Dynamic Web Applications to Aid in Software Testing", Journal on Software Testing, Verification and Reliability, Wiley and Sons Ltd, Vol. 26, Issue 4, pp 318--346, June 2016.

Sreedevi Sampath, Renee Bryce, Atif Memon, "A Uniform Representation of Hybrid Criteria for Regression Testing", IEEE Transactions on Software Engineering, Vol. 39, Issue No. 10, pp 1326-1344, October 2013.

Schuyler Manchester, Renee Bryce, **Sreedevi Sampath**, Nishant Samant, Rick Kuhn, Raghu Kacker, "Applying higher-order combinatorial criteria to test case prioritization: a case study", Journal of Combinatorial Mathematics and Combinatorial Computing, JCMCC 86 (2013), pp 51-72, August 2013.

Sreedevi Sampath, Renee Bryce, "Improving the effectiveness of Test Suite Reduction for User-Session-Based Testing of Web Applications", Elsevier Information and Software Technology Journal, 54(7):724-738, July 2012.

Renee Bryce, **Sreedevi Sampath**, Jan Pederson, Schuyler Manchester, "Test Suite Prioritization by Cost-based Combinatorial Interaction Coverage", International Journal of Systems Assurance Engineering and Management (Springer), Special Issue on Advances in Software Testing, 2(2):126-134, April 2011

Renee Bryce, **Sreedevi Sampath**, Atif Memon, "Developing a Single Model and Test Prioritization Strategies for Event-driven Software", IEEE Transactions on Software Engineering (TSE), Vol. 37, Issue no. 1, pp 48 – 64, 2011.

Sreedevi Sampath, Sara Sprenkle, Emily Gibson, Lori Pollock and Amie Souter Greenwald, "Applying Concept Analysis to User-session-based Testing of Web Applications", Transactions on Software Engineering (TSE), Vol. 33, Issue No. 10, 2007

Peer-reviewed (conference and workshop proceedings)

Evelyn Kempe, Samin Semsar, Aaron Massey, **Sreedevi Sampath**, Carolyn Seaman, "Modeling, Analyzing and Communicating Regulatory Ambiguity: An Empirical study", Workshop on Multi-disciplinary, Open, and RElevant Requirements Engineering (MO2RE), co-located with the International Conference on Software Engineering (ICSE), April 2024

Brandt Braunschewig, Neha Dhage, Maria Jose Viera, Carolyn Seaman, **Sreedevi Sampath** and A. Gunes Koru, "Studying Volatility Predictors in Open Source Software", ACM / IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM), 2012 (Acceptance rate: 25%)

Sreedevi Sampath, Renee Bryce, Sachin Jain, Schuyler Manchester, "A Tool for Combinatorial-based Prioritization and Reduction of User-Session-Based Test Suites", IEEE International Conference on Software Maintenance, Tool Demonstration Track, September 2011.

Wenhua Wang, Jeff Lei, **Sreedevi Sampath**, Raghu Kacker, Rick Kuhn, James Lawrence, "A Combinatorial Approach to Building Navigation Graphs for Dynamic Web Applications", IEEE International conference on software maintenance (ICSM), 2009. Acceptance rate: 21%

Carolyn Seaman, A. Gunes Koru, **Sreedevi Sampath,** "Discovering Determinants of High Volatility Software", short paper at the International Workshop on Cooperative and Human Aspects of Software Engineering, co-located with the International Conference on Software Engineering (ICSE), May 2009.

Sreedevi Sampath, Amie Souter, Lori Pollock, "Towards Defining and Exploiting Similarities in Web Application Use Cases through User Session Analysis", Workshop on Dynamic Analysis (WODA 2004), co-located with International Conference on Software Engineering (ICSE 2004), May 2004. Acceptance rate: 50%

Wenhua Wang, **Sreedevi Sampath**, Jeff Lei, Raghu Kacker, "An Interaction-Based Test Sequence Generation Strategy for Web Applications", IEEE High Assurance Systems Engineering Symposium (HASE), December 2008. Full paper acceptance rate: 22%

Yuepu Guo, **Sreedevi Sampath**, "Web Application Fault Classification—An Exploratory Study", Short paper at the International Symposium on Empirical Software Engineering and Measurement (ESEM), 2008. Acceptance rate: 47%

Sreedevi Sampath, Renee Bryce, Gokulanand Viswanath, Vani Kandimalla, A. Gunes Koru, "Test case Prioritization for Web Application Testing", IEEE International Conference on Software Testing, Verification and Validation (ICST 2008), pages 141 - 150, April 2008. Acceptance rate: 20%

Sreedevi Sampath, Sara Sprenkle, Emily Gibson, and Lori Pollock, "Web Application Testing with Customized Test Requirements—An Experimental Comparison Study", IEEE International Symposium on Software Reliability and Engineering (ISSRE), pages 266 - 278, November 2006. Acceptance rate: 30%

Sreedevi Sampath, Sara Sprenkle, Emily Gibson, Lori Pollock, "Integrating Customized Test Requirements with Traditional Requirements in Web Application Testing", Workshop on Testing, Analysis and Verification of Web Services and Applications (TAV-WEB 2006), co-located with International Symposium on Software Testing and Analysis (ISSTA 2006), July 2006.

Sara Sprenkle, Emily Gibson, **Sreedevi Sampath** and Lori Pollock, "A Case Study of Automatically Creating Test Suites from Web Application Field Data", Workshop on Testing, Analysis and Verification of Web Services and Applications (TAV-WEB 2006), co-located with the International Symposium on Software Testing and Analysis (ISSTA 2006) , July 2006.

Sreedevi Sampath, Sara Sprenkle, Emily Gibson, Lori Pollock and Amie Souter, "Analyzing Clusters of Web Application User Sessions", Workshop on Dynamic Analysis (WODA 2005), co-located with International Conference on Software Engineering (ICSE 2005), May 2005. Acceptance rate: 52%.

Sara Sprenkle, Emily Gibson, **Sreedevi Sampath**, and Lori Pollock, "Automated Replay and Failure Detection of Web Applications", International Conference on Automated Software Engineering (ASE), November 2005. Acceptance rate: 9%

Sara Sprenkle, **Sreedevi Sampath**, Emily Gibson, Lori Pollock, and Amie Souter, "An Empirical Comparison of Test Suite Reduction Techniques for User-session-based Testing of Web Applications", IEEE International Conference on Software Maintenance (ICSM), pages 587 - 596, September 2005. Acceptance rate: 30%

Sreedevi Sampath, Valentin Mihaylov, Amie Souter, and Lori Pollock, "A Scalable Approach to User-session based Testing of Web Applications through Concept Analysis", IEEE International Conference on Automated Software Engineering (ASE), pages 132 - 141, September 2004. Acceptance rate: 14%

Sreedevi Sampath, Valentin Mihaylov, Amie Souter, Lori Pollock, "Composing a Framework to Automate Testing of Operational Web-Based Software", IEEE International Conference on Software Maintenance (ICSM), pages 104 - 113, September 2004. Acceptance rate: 32%

Book Chapters

Sreedevi Sampath, Sara Sprenkle, "Advances in Web Application Testing 2010-2014", in Advances in Computers, Memon A. (Ed), Elsevier, Vol. 101 pp 155 - 191, 2016.

Renee Bryce, **Sreedevi Sampath,** "Test suite prioritization by Combinatorial Coverage", in Introduction to Combinatorial Testing, CRC Press, Taylor and Francis Group, 2013. ISBN: 978-1-4665-5229-6, 2013.

Sreedevi Sampath, "Advances in User-session-based Testing of Web Applications", in Advances in Computers, Memon A. (Ed), Elsevier, Vol. 86, pp 87 - 108, 2012.

Peer-reviewed (workshop proceedings)

Non-Peer-Reviewed (Dissertation)

Sreedevi Sampath, "Cost-effective Techniques for User-session-based Testing of Web Applications", University of Delaware, 2006.

Works submitted or in Preparation

Ronald Perrella, **Sreedevi Sampath**, "User Session-based Testing of Rich Internet Applications", in preparation for STVR journal 2024

Sreedevi Sampath, Sara Sprenkle "Detecting and Reporting Malicious Visitors of Web Applications", in preparation for Web 2025

Evelyn Kempe, Samin Semsar, **Sreedevi Sampath**, Carolyn Seaman, Aaron Massey, Understanding the Software Industry's Perception on Regulatory Compliance, under submission with International conference on software engineering 2025

Presentations

Refereed (Conference and Workshop Presentations)

International Conference on Software Maintenance, Tool Demonstration Track (ICSM 2011), "A Tool for Combinatorial-based Prioritization and Reduction of User-Session-Based Test Suites", September 2011.

Verify ATI Testing and Test Automation Conference, "CPUT: Combinatorial-Based Prioritization for User-Session-Based Testing of Web Applications", September 2011.

International Conference on Software Testing, Verification and Validation (ICST 2008), "Test Case Prioritization for Web Application Testing", April 2008.

International Symposium on Software Reliability and Engineering (ISSRE 2006), "Web Application Testing with Customized Test Requirements—An Experimental Comparison Study", November 2006.

Workshop on Testing, Analysis and Verification of Web Services and Applications (TAV-WEB 2006), "Integrating Customized Test Requirements with Traditional Requirements in Web Application Testing", July 2006.

International Conference on Automated Software Engineering (ASE 2004), "A Scalable Approach to User-session based Testing of Web Applications through Concept Analysis", September 2004.

International Conference on Software Maintenance (ICSM 2004), "Composing a Framework to Automate Testing of Operational Web-Based Software", September 2004.

Workshop on Dynamic Analysis (WODA 2004), **"**Towards Defining and Exploiting Similarities in Web Application Use Cases through User Session Analysis", May 2004

Refereed (Poster Presentations)

Undergraduate Research Creative Achievement Day (URCAD) at UMBC, Jared Keirle, Sreedevi Sampath, Sara Sprenkle, "Empirical study on Defining Reliable Features for Detecting Malicious Users of Web Applications", April 2018

Undergraduate Research Creative Achievement Day (URCAD) at UMBC, Steven Herrera, Reenah Sheikh, Soheila Escobar, Youssef Zaki, "Tutor on Campus", April 2018. Creative project by students in my IS448 class.

Undergraduate Research Creative Achievement Day (URCAD) at UMBC, Scott Thompson, Mithra Muthukrishnan, Sreedevi Sampath, Sara Sprenkle, "Detecting and Blocking Malicious Website Visitors Through Mining Click-Stream Data and Applying Clustering Methods", April 2017

High Confidence Software and Systems Conference (HCSS), Isaiah Yoon, Mengni Du, Sreedevi Sampath, "Applying User Sessions to Detect SQL Injection Vulnerabilities in Web Applications", May 2016.

International Workshop on Cooperative and Human Aspects of Software Engineering, **co-located with the International Conference on Software Engineering (ICSE),** Carolyn Seaman, A. Gunes Koru, **Sreedevi Sampath,** "Discovering Determinants of High Volatility Software", May 2009.

Workshop on Socio-technical congruence, **co-located with the International Conference on Software Engineering**, Carolyn Seaman, A. Gunes Koru and **Sreedevi Sampath,** "Socio-Technical Congruence and Software Defect Proneness", May 2009.

Consortium for Computing Sciences in Colleges—Eastern Conference, Susan Mitchell, **Sreedevi Sampath**, Viviane Malheiros, "Leveraging Knowledge Management for Software Product Development", October 2008

Mid-Atlantic Student Workshop on Programming Languages and Systems, Presentation on "Applying Concept Analysis to User-session-based Testing of Web Applications", April 2006

Doctoral Symposium, International Conference on Software Engineering (ICSE 2005), Presentation on "Cost-effective Techniques for User-session-based Testing of Web Applications", May 2005. Acceptance rate: 41%

Mid-Atlantic Student Workshop on Programming Languages and Systems, Presentation on "Relating User Session Clusters to Dynamic Web Application Behavior", April 2005

Other Professional Presentations

Invited talks

Software Testing Workshop, U.S. Army Evaluation Center (AEC), Aberdeen Proving Ground, MD, "Combinatorial Testing", Co-speaker with Richard Kuhn (NIST) and Raghu Kacker (NIST), May 2010

Special Interest Group on Systems, Department of CIS, University of Delaware, DE "Test case prioritization for Web Application Testing", October 2008

Fraunhofer Center for Experimental Software Engineering, College Park, MD, "Test case prioritization for Web Application Testing", December 2007

National Institute of Standards and Technology (NIST), Gaithersburg, MD, "Cost-effective Techniques for User-session-based Testing of Web Applications", June 2007

Department of Information and Software Engineering, George Mason University, "Web Application Testing with Customized Test Requirements—An Experimental Comparison Study", February 2007

Colloquia

UMBC Information Systems Department Seminar, University of Maryland Baltimore County, "Developing a Single Model and Test Prioritization Strategies for Event-Driven Software", February 2011

Special Interest Group on Program Analysis and Compiler Techniques (SIGPACT), University of Delaware, "A Scalable Approach to User-session based Testing of Web Applications through Concept Analysis", November 2003

Special Interest Group on Program Analysis and Compiler Techniques (SIGPACT), University of Delaware, "Testing and Analysis of Web Applications", April 2003

TEACHING EXPERIENCE

At the Information Systems Department, University of Maryland, Baltimore County

IS470: "Software Testing", Spring 2022, Spring 2023

IS498: "Software Testing", Spring 2020

IS472: "Software Security", Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2023, Fall 2024

IS740: "Fundamentals of Software Testing", Fall 2012, Fall 2013, Fall 2015, Fall 2016, Fall 2017, Spring 2020, Spring 2022, Spring 2023

IS 448: "Markup and Scripting Languages", Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2022, Spring 2023, Spring 2024

IS698/800: "Special Topics Course in Fundamentals of Software Testing", Spring 2008

IS147: "Introduction to Computer Programming", Spring 2014

IS436: "Structured Systems Analysis and Design", Spring 2007, Fall 2007

IS600: "Introduction to Information Systems and Implementation", Fall 2006, Fall 2007, Fall 2008, Fall 2009, Fall 2010, Fall 2014

IS399: "Cooperative Education in Information Systems", every semester from Fall 2013 - present

MGMT399: "Administrative Internship", every semester from Fall 2013 - present

IS478: "Cybersecurity Internship", every semester from Fall 2017-present

IS397: "Health IT internship", every semester from Spring 2018-present

Supervised Independent Studies

Graduate (Ph.D.)

- Venkat Ganapathy, Ph.D. student, Spring 2024
- Ben Houdeshell, Ph.D. student, Spring 2016, "Formal verification methods"

- Ben Houdeshell, Ph.D. student, Fall 2015, "Survey of big data software testing practices and challenges"
- Ronald Perrella, Ph.D. student, Fall 2013, "Capture-replay Testing of Rich Internet Applications"
- Brandt Braunschweig, Ph.D. student, Spring 2011, "Studying volatility predictors in Open Source Software"
- Mark Pohl, Ph.D. student, Spring 2008, "Use of Web Services in Bio-informatics Software Development"
- Yuepu Guo, Ph.D. student, Fall 2007, "Web Application Fault Classification—An Exploratory Study"
- Susan Mitchell, Ph.D. student, Fall 2006, "A Conceptual Framework for the Application of Knowledge Management in Software Development Projects"

Graduate (M.S.)

- Sai Nikhil Reddy Pendayala, M.S. Student, Spring 2024
- Prem Nimmalpudi, M.S. Student, Spring 2023
- Erik Jones, M.S. student, Fall 2022
- Nicole Dawson, M.S. student, Spring 2018
- Rodrigo Castro, M.S. student, Spring 2017
- Isaiah Yoon, M.S. student, Spring 2016
- Pierce McMillian, M.S. student, Spring 2016
- Andrea Zemp, M.S. student, Spring 2016
- Katrina Chan, M.S. student, Spring 2015
- Mengni Du, M.S. student, Spring 2015
- Benjamin Houdeshell, M.S. Student, Spring 2012, "Load testing for web applications using the cloud"
- Nilesh Chaturvedi, M.S. student, Fall 2011, "Frequency criteria for CPUT"
- Nishant Samant, M.S. student, Fall 2011, "Experiments with replay tool and fault detection framework for Web Applications"
- Shama Khadpekar, M.S. student, Spring 2011, "Oracles and fault testing framework for Rich Internet Applications"
- Jayalakshmi Subramanian, M.S. student, Spring 2011, "Fault classification for Rich Internet Applications"
- Sachinkumar Jain, M.S. student, Fall 2009, "Developing a Framework for Test Prioritization with Apache Web Server"
- Nithya Jayakumar, M.S. student, Fall 2008, "Studying the Effect of Debugging Time on Test Suite Prioritization"
- Gokul Viswanath, M.S. student, Fall 2007, "Prioritization Criteria for Web Applications" (not graded work)

Undergraduate

- Bawi Sang, B.S., Fall 2024
- Stevie Clark, B.S., Fall 2021
- Syeda Fatima, B.S., Spring 2020
- Patrick Matejka, B.S. student, Spring 2019
- John Dennison, B.S. student, Spring 2019
- Jared Kierle, B.S. student, Spring 2018, Fall 2018
- Zachariah Dzielinski, B.S. student, Fall 2017
- Scott Thompson, B.S. student, Fall 2016 and Spring 2017, "Clustering User session data to detect Malicious Bot Traffic"
- Maneet Sarai, B.S. student, Fall 2009, "Publications Manager in PHP"

- Ephrem Abebe, B.S. student, Summer 2012, "Designing and developing a website for the Empirical and Applied Software Engineering Lab" (not graded work)

At the Department of Computer and Information Sciences, University of Delaware

Instructor – **CISC 101** "General Computer Science", Summer 2004

Teaching Assistant - CISC 475 "Object Oriented Software Engineering", **CISC 663** "Operating Systems", Spring 2006, Fall 2005, **CISC 450** "Computer Networks", Fall 2005

Laboratory Instructor and Teaching Assistant – **CISC 105** "Programming in C", Fall 2000, Summer 2001, **CISC 101** "General Computer Science", Spring 2001

At the Department of Physics and Astronomy, University of Delaware

Laboratory Instructor and Teaching Assistant – "Introductory Physics", Summer 2001

30-60 minute lectures in CIS courses at the University of Delaware

"Software Testing – Integration and System Testing Strategies" (50 minute lecture), **CISC 475 Object-Oriented Software Engineering"**, Spring 2006

"Software Testing – Unit Testing Strategies" (50 minute lecture), **CISC 475 Object-Oriented Software Engineering"**, Spring 2006

"A Methodology for Controlling the Size of a Test Suite" (45 minute lecture), **CISC 879 Software Testing and Maintenance,** Spring 2004

"Experiments on Effectiveness of Data-flow and Control-flow-Based Test Adequacy Criteria" (45 minute lecture), **CISC 879 Software Testing and Maintenance**, Spring 2004

"Pursuing Failure: The Distribution of Program Failures in a Profile Space" (45 minute lecture), **CISC 879 Software Testing and Maintenance**, Spring 2004

"Simple Mail Transfer Protocol" (one-hour lecture and designed homework for class), **CISC 856 TCP/IP and Upper Layer Protocols**, Spring 2002

"IP Traceback under Denial of Service Attack", **CISC 859 Internet Protocol & Technologies**, Spring 2001

SERVICE

Service to Department

At the Department of Information Systems, UMBC

2021-25	Chair, IS Graduate committee
2021-25	Chair, IS Graduate Admissions committee
2021-25	Graduate Program Director, IS MS and PhD programs
2024-25	Member, IS department APR committee
2024	NSF panel reviewer
2024	Member, Accounting Associate search committee
2023-24	Chair, Promotion and Tenure committee
2023	Member, Accounting Associate search committee
2021-22	Co-chair, Visioning Committee
2021-22	Member, Open rank tenured/tenure-track faculty search committee
2021	Chair, MPS-SENG Professor of Practice/Lecturer Search Committee

2021	Interim Graduation Program Director, MPS in Software Engineering
2016-2021	Director of Undergraduate Programs
2020-2021	Member, Open rank tenured/tenure-track faculty search committee
2018-2020	Member, Adjunct Faculty Committee
2019-20	Chair, Promotion and tenure committee
2019-20	Member, Tenure-track faculty search committee
2019-20	Member, Lecturer/POP search committee
2019	Faculty Representative, UMBC Transfer Students Open House
2019	Faculty Representative, UMBC Welcome Week
2018-19	Chair, Promotion and Tenure Committee
2018	Faculty Representative, UMBC Welcome Week
2018	Member, Adjunct Faculty Promotion Committee
2018	Faculty Representative, UMBC Visit Day
2017	Faculty Representative, UMBC Welcome Week
2013-2016	Associate Undergraduate Program Director
2015-16	Chair of Promotion and Tenure Committee
2015-2018	Member, IS MS and PhD Graduate committee
2014-15	Member, Faculty recruiting committee
2014,15,16	Judge, IS Department Research Poster Competition
2013-2021	Member, Undergraduate Studies Committee
2013-2016	Member, Research committee
2012	Co-organizing attendance of IS graduate and undergraduate students at the Grace Hopper Celebration in Computing 2012
2012-13	Member, Library committee
2011-13	Member, Research committee
2011-12	Member, Faculty recruiting committee
2011	Judge, IS Department Research Poster Competition
2010	Faculty Representative, UMBC Visit Day
2009-11	Member, IS Graduate committee
2009	Web Certificate ad-hoc committee member
2008	Faculty Representative, UMBC Visit Day
2008	Member, Merit Review Committee
2007-2009	Member, IS Undergraduate committee

At the Department of Computer and Information Sciences, University of Delaware

2005	Co-organizer, Special Interest Group on High Performance Computing and Software Engineering, Department of Computer and Information Sciences, University of Delaware, Fall 2005. Organized seminar series. Invited and hosted visiting research speakers.
2005 – 2006	Member, Organizing Committee, CIS Women's Group (CISters) Activities, University of Delaware. Led first get-together event for all women in Computer and Information Sciences and assisted in other events for women in CIS. Involved in the core group of four women who worked on obtaining financial support from the Department of CIS and the Dean of College of Arts and Sciences for a group of 10 women in the CIS to attend and participate in the Grace Hopper Celebration of Women in Computing (GHC), 2006. The endeavor to obtain financial support was successful and the University of Delaware sent 8 graduate and undergraduate students to GHC 2006.

Service to College

2021-present	Committee Member, COEIT Graduate Program Directors Committee
2021	Computing Placement Exam Committee
2019-20	Chair, COEIT Faculty Advisory Committee

2017-19	Committee Member, COEIT Faculty Advisory Committee
2018-present	Committee Member, COEIT Undergraduate Program Directors Committee

Service to University

2023-present	MORE (Mentoring Others Results in Excellence) Fellow
2019-present	Member, Academic Programs and Budget (APB) Committee
2009-present	Mentor, Center for Women in Technology Scholars and Cyber Scholars
2021	Panelist, Center for Women in Technology Living Learning Community (LLC)
2019	Panelist, Transfer Success Seminar (TRS 201)
2019	Panelist, Bits and Bytes Center for Women in Information Technology program
2019	Cyber scholar interviewer, Center for Women in Information Technology
2018	Panelist, Best of Center for Women in Information Technology panel – Meet the faculty
2018-19	Committee member, Council of University System Faculty (CUSF)
2018-19	Committee member, UMBC Arbitrary and Capricious Grade Review Panel
2018	Cyber scholar interviewer, Center for Women in Information Technology
2015—2017	Committee Member, UMBC Faculty Affairs Committee
2014—2015	Committee Member, UMBC Capricious Grade Review Panel
2012—2014	Committee Member, UMBC Computer Policy Committee
2010—2012	Committee Member, UMBC Athletics Policy Committee
2008—present	Faculty Advisor, Undergraduate Student Organization—Adaa, Arts/Performance Category

Service to Profession

2019-present	Editorial board member, Journal on Software Testing Verification and Reliability, Wiley
2025	PC member, ICSE workshop on Gender Equity, Inclusion and Diversity
2025	Co-chair, Industry track, International Conference on Software Testing, Verification and Validation
2024	PC member, ICSE workshop on Gender Equity, Inclusion and Diversity
2023	General chair, IEEE International Conference on Software Testing, Verification and Validation
2022	Program committee member, IEEE Software Technology Conference
2022	Committee member, International Conference on Software Engineering (ICSE) Workshops
2021	Program committee member, International Conference on Source Code Analysis and Manipulation (SCAM)
2021	Committee member, International Conference on Software Engineering (ICSE) Demonstrations
2021	Reviewer, Posters track at IEEE International Conference on Software Testing, Verification and Validation (ICST)
2021	Posters co-chair, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2020	Manuscript reviewer, Journal on Software Maintenance and Evolution (JSME)
2020	PhD symposium co-chair, IEEE Conference on Smart Computing
2020	Committee member, International Conference on Software Engineering (ICSE) Workshops
2020	Program committee member, TestEd: Software Testing Education workshop co-located with ICST
2019	Manuscript reviewer, Journal on Software Testing Verification and Reliability, Wiley
2019	Manuscript reviewer, Transactions on Software Engineering (TSE)
2019	National Science Foundation (NSF) Panel reviewer

2019	Program committee member, International Working Conference on Source Code Analysis and Manipulation (SCAM)
2019	Program committee member, Workshop on Gender Equality in Software Engineering, co-located with the International Conference on Software Engineering (ICSE)
2019	Program committee member, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2019	Workshops co-chair, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2018	Manuscript reviewer, Information and Management Journal
2018	Manuscript reviewer, ACM Computing Surveys (CSUR)
2017	Manuscript reviewer, Software Testing Verification and Reliability, Wiley
2017	Manuscript reviewer, Transactions on Reliability
2017	Program committee member, IEEE Software and Technology Conference (STC)
2017	National Science Foundation (NSF) Panel reviewer
2017	Finance chair, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2017	Program committee member, International Workshop on Combinatorial Testing, co-located with ICST
2016	Program committee member, International Workshop on Combinatorial Testing, co-located with ICST
2016	National Science Foundation (NSF) Panel reviewer
2016	Co-chair of Short Papers track, International Conference on Empirical Software Engineering and Measurement (ESEM)
2015	Manuscript reviewer, Transactions on Software Engineering (TSE)
2015	Manuscript reviewer, Transactions on Reliability
2015	Manuscript reviewer, Journal of Systems and Software (JSS)
2015	Co-chair of Productization track, Grace Hopper Celebration of Women in Computing
2015	Publicity Chair, International Conference on Software Testing and Analysis (ISSTA)
2015	Program committee member, International Workshop on Combinatorial Testing, co-located with ICST
2014	Manuscript reviewer, ACM Transactions on Software Engineering and Methodology (TOSEM)
2014	National Science Foundation (NSF) Panel reviewer
2014	Program committee member, International Symposium on Software Reliability Engineering (ISSRE)
2014	Program committee member, International Workshop on Combinatorial Testing, co-located with ICST
2014	Program committee member, The Testing: Academic and Industrial Conference - Practice and Research Techniques (TAIC-PART), co-located with ICST
2014	Program committee member, Grace Hopper Celebration of Women in Computing, Software Engineering Track
2013	Manuscript reviewer, ACM SIGSOFT Outstanding Doctoral Dissertation Award
2013	Manuscript reviewer, STVR, Wiley
2013,16	Manuscript reviewer, IST, Elsevier
2013	Program committee member, ISSRE
2013	Programming committee member, ICSOFT
2013	Program committee member, International Workshop on Combinatorial Testing, co-located with ICST
2013	Program committee member, International Conference on Evaluation of Novel Software Approaches to Software Engineering (ENASE)

2013	Program committee member, Grace Hopper Celebration of Women in Computing, Software Engineering Track
2013	Program committee member, IEEE International Conference on Empirical Software Engineering and Management (ESEM) Short papers track
2013	Publicity chair, Organizing Committee member, IEEE International Conference on Empirical Software Engineering and Management (ESEM)
2012	Book chapter reviewer, Java Programming, Schildt, 1/e, McGraw-Hill Publishers
2012	Program committee member, International Workshop on Combinatorial Testing (CT), co-located with ICST
2012	Program committee member, PhD Forum, Grace Hopper Celebration of Women in Computing
2012	Program committee member, International Conference on Evaluation of Novel Software Approaches to Software Engineering (ENASE)
2012	Reviewer, IEEE iConference
2012	Program committee member, International Conference on Quality Software (QSIC)
2012	Program committee member, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2012	Manuscript reviewer, Journal of Systems and Software (JSS)
2011	Proposal Referee, Discover Grant Program, National Sciences and Engineering Research Council of Canada
2011	Program committee member, IEEE International Conference on Software Testing, Verification and Validation (ICST)
2011	Manuscript reviewer, IEEE Transactions on Software Engineering (TSE)
2011	Manuscript Reviewer, Information and Software Technology Journal (IST)
2010	Program Committee Member, Fifth International Conference on Software and Data Technologies (ICSOFT)
2010	Program Committee Member, IEEE International Conference on Empirical Software Engineering and Management (ESEM)
2010	Program committee member, International Conference on Predictor Models in Software Engineering (PROMISE)
2010	Manuscript reviewer, Journal of Systems and Software (JSS)
2010	Manuscript Reviewer, Information and Software Technology Journal (IST)
2010	Manuscript Reviewer, Journal of Software Testing, Verification, and Reliability (STVR)
2009	Manuscript reviewer, IEEE Software
2009	Manuscript reviewer, IET Software
2009	Manuscript reviewer, Encyclopedia of Software Engineering, Wiley Inter-science Publishers
2009	Manuscript Reviewer, Information and Software Technology Journal (IST)
2009	Session chair, International conference on Empirical Software Engineering and Measurement (ESEM)
2009	Program Committee Member, IEEE International Symposium on Software Reliability Engineering (ISSRE)
2009	Program Committee Member, IEEE International Workshop on Dynamic Analysis (WODA), co-located with the International Conference on Software Testing and Analysis (ISSTA)
2009	Program Committee Member, IEEE International Conference on Software Engineering Advances (ICSEA)
2009	Program Committee Member, IEEE International Conference on Empirical Software Engineering and Management (ESEM)
2009	Program Committee Member, IEEE International Conference on Software Testing, Verification and Validation (ICST)

2009	Manuscript Reviewer, Journal of Software Testing, Verification, and Reliability (STVR)
2008	Manuscript reviewer, Journal of Knowledge and Information Systems (KAIS)
2008	Manuscript reviewer, Journal of Systems and Software (JSS)
2008	Manuscript Reviewer, Information and Software Technology Journal (IST)
2008	Manuscript Reviewer, Journal of Software Testing, Verification, and Reliability (STVR)
2008	Program Committee Member, IEEE International Symposium on Software Reliability Engineering (ISSRE)
2008	Program Committee Member, IEEE International Conference on Empirical Software Engineering and Management (ESEM)
2007	Manuscript Reviewer, Empirical Software Engineering Journal (ESE)
2007	External Reviewer, IEEE International Symposium on Software Reliability Engineering (ISSRE)
2007	Manuscript Reviewer, Information and Software Technology Journal (IST)
2007	Manuscript reviewer, IEEE Transactions on Software Engineering (TSE)
2005	Manuscript Reviewer, IEEE Transactions on Software Engineering (TSE)
2007	Manuscript Reviewer, Journal of Software Testing, Verification, and Reliability (STVR)
2006	Manuscript Reviewer, Information and Software Technology Journal (IST)
2006	Manuscript Reviewer, Informatica Journal
2006	Manuscript Reviewer, International Conference on Software Engineering
2005	Manuscript Reviewer, Workshop on Dynamic Analysis
2005	Organizing Committee, Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS)
2004	Manuscript Reviewer, Eclipse Technology eXchange Workshop

Service to Public

2024-25	President, Parent Teacher Association, Clarksville Middle School, Maryland
2022-24	Vice President, PTA, Clarksville Middle School, Maryland

Curriculum Vitae

DANA H. SMITH

(302)-448-9809
email: dasmith@umbc.edu

EDUCATION

M.S.	2001	UMBC, Information Systems
M.Ed.	1994	Salisbury University, Education Administration
B.S.	1990	Salisbury University, Business/MIS

EXPERIENCE IN HIGHER EDUCATON

2019 – present	UMBC	Senior Lecturer	Information Systems
2000 – 2019	UMBC	Lecturer	Information Systems
1999 – 2000	UMBC	Teaching Assistant	Information Systems
1995 – 1998	Salisbury University	Lecturer	Information Systems
1995 – 1997	Salisbury University	Programmer/Data Analyst	Institutional Research

PRIVATE INDUSTRY EXPERIENCE

1998 – 1999	TT Systems, Columbia, MD	PC applications trainer
1993 – 1995	First National Bank of MD	Programmer/Analyst
1990 – 1993	Data Services Inc., Salisbury MD	Programmer/ Analyst
1985 – 1990	Saturn Corp., Cheverly, MD	Data Tech/Programmer
1978 – 1985	Citizens Bank of MD, Riverdale, MD	Payroll/Accounting

CLASSROOM/ ONLINE INSTRUCTION

IS101 Introduction to Computer Based Systems
IS125 Programming Logic and Design using Alice
IS246 Visual Basic Programming
IS295 Intermediate Business Applications; Microsoft Office
IS300 Management Information Systems
IS303 Human Computer Interaction
IS320 Advanced Business Applications*:* Excel, Access
IS425 Decision Support Systems
IS607 Introduction to Information Systems
IFSM Structured COBOL Programming

SERVICE

Department

Sept 2024 – present	Member	Assessments Committee
Sept 2018 – May 2019	Member	Lecturer Hiring Committee
Sept 2012 – May 2024	Member	Honors and Awards Committee
Sept 2014 – May 2015	Member	Library Committee
Sept 2012 – May 2016	Member	Assessment Committee
Sept 2009 – May 2012	Member	Marketing Input Group
Sept 2008 – May 2012	Chair	Honors and Awards Committee
Sept 2008 – present	Member	Undergraduate Studies Committee
Sept 2005 – May 2006	Member	Web Committee
Sept 2004 – May 2008	Member	Student Recruiting Committee
Sept 2001 - present	Advisor	Information Systems Dept., events

University

Sept 2017 – 2019	Member	Human Relations Committee
Jan 2015 – 2023	Co-Chair	Academic Conduct Committee
Nov 2014 - 2016	Member	Breaking Ground
Sept 2015 – 2018	Member	Academic Integrity Committee
Sept 2014 – Dec 2014	Member	Academic Conduct Committee
Sept 2011 – May 2013	Member	Human Relations Committee
Jan 2010 – Mar 2010	Member	Goldwater Scholarship Selection Committee
Sept 2009 – May 2011	Member	Facilities Committee
Sept 2004 – May 2006	Faculty Advisor	Transfer Student Network

Community

2018 - 2023	Vice President	Maryland Concert Series
2012 – 2020	Volunteer	Jude House (addiction treatment)
2010 - 2022	Volunteer	Glen Burnie Improvement Assoc.
2009 – 2019	Volunteer	Salvation Army NCAC
2009 – 2011	Volunteer	My Brother's Keeper
2008 – 2013	Volunteer	Christ Church Homeless Shelter

CURRICULUM VITAE

IAN STOCKWELL, Ph.D.

EDUCATION

Ph.D. 2014 UMBC, Public Policy, Evaluation and Analytical Methods
Dissertation: “Predicting Stable and Cost-Effective Medicaid Nursing Home Transitions”

MA 2006 UMBC, Economic Policy Analysis

BS 2003 UMBC, Financial Economics

BS 2003 UMBC, Information Systems

Experience in Higher Education

2022-Present UMBC, Associate Professor, Information Systems

2022-Present UMBC, Affiliate Professor, Erickson School of Aging Studies

2023-Present UMBC, Affiliate Associate Professor, Department of Emergency Health Services

2021-2022 UMBC, Affiliate Associate Professor, Information Systems

2020-2022 UMBC, Adjunct Professor, Erickson School of Aging Studies

Experience in Other than Higher Education

2019-Present PreSquared LLC, Co-Founder and Chief Data Scientist

2018-2022 The Hilltop Institute at UMBC, Chief Data Scientist

2010-2018 The Hilltop Institute at UMBC, Director of Aging and Disability Studies

2015 CMS Medicare-Medicaid Coordination Office, Technical Advisor

2008-2010 The Hilltop Institute at UMBC, Senior Policy Analyst

2006-2008 The Hilltop Institute at UMBC, Research Analyst/Information Systems Architect

2002-2006 The Hilltop Institute at UMBC, Research Assistant

Research Support and Fellowships

2024-Present $2,355,706; Principal Investigator; National Institute on Minority Health and Health Disparities (NIMHD) grant to develop, implement, and evaluate a social engagement support system. NIH Grant #1R01MD019814-01.

2024-Present $75,000; Principal Investigator; Baltimore Life Science Discovery Accelerator (UM-BILD) to develop a model agnostic prediction infrastructure. NIH REACH Hub Award 1U01GM152511-01.

2024-Present $22,000; Co-Principal Investigator; Imaging Research Center (IRC) Faculty Research Fellowship to create a novel health informatics platform for community health workers.

2024-Present Principal Investigator; Robert Wood Johnson Health Data for Action in-kind award to determine what happens to young adults with special healthcare needs when they age out of public insurance. RWJF Grant #81870.

2023 $49,037; Co-Investigator; Center and Institute Departmentally-Engaged Research (CIDER) award to study the quality of care in Maryland nursing homes from a multidimensional perspective.

2023 $39,232; Co-Investigator; Chesapeake Regional Information System for our Patients (CRISP) contract to study equitable transitional care of Medicare-Medicaid dually eligible beneficiaries.

2021-2022 $150,000; Co-Founder; TEDCO Maryland Innovation Initiative (MII) company formation award to commercialize hospital risk prediction models.

2021-2023 $124,648; Principal Investigator; National Institute on Aging grant for data linkage and statistical analysis of the HANDLS study cohort. Award #75N95021P00432.

2021-2023 $94,745; Principal Investigator; BrightFocus Foundation subaward for the analysis of Medicare and Medicaid utilization for the Alzheimer's and Dementia population. Award #2004959310.

2021-2022 $42,955; Co-Investigator; Johns Hopkins University subaward to survey direct care agencies in Maryland to examine quality of life of older Medicaid home and community-based service recipients. Award #21080563.

2020-2021 $39,388; Co-Investigator; Center for Mississippi Health Policy grant to estimate the costs to Mississippi Medicaid for expansion to childless adults. Award #21060406.

2020 Co-Principal Investigator; Accelerated Translational Incubator Pilot (ATIP) award to determine the incidence, prevalence, and long-term costs of violent incidents in the Maryland Medicaid population. NIH NCATS CTSA Program, grant #1UL1TR003098.

2020 Co-Investigator; ATIP award to predict hospitalization risk for COVID-19. NIH NCATS CTSA Program, grant #1UL1TR003098.

2019-2024 $297,928; Co-Principal Investigator; National Science Foundation grant titled "AI-DCL: Fairness for the Allocation of Healthcare Resources" to examine issues of algorithmic fairness for models deployed for individuals receiving Medicaid. NSF Grant #1927486.

2019 Principal Investigator; Robert Wood Johnson Health Data for Action in-kind award to evaluate alternatives to the 30-day all-cause readmission measure. RWJF Grant #76774.

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Peer-Reviewed Journal Articles

Sun, R., Henderson, M., Goetschius, L., Han, F., & **Stockwell, I.** (2024). Behind the Curtain: Comparing Predictive Models Performance in 2 Publicly Insured Populations. Medical Care, 62(11), 716-722.

Fakeye, O., Rana, P., Han, F., Henderson, M., & **Stockwell, I.** (2024). Behavioral, Cognitive, and Functional Risk Factors for Repeat Hospital Episodes Among Medicare–Medicaid Dually Eligible Adults Receiving Long-Term Services and Supports. Journal of Applied Gerontology, 07334648241286608.

Kusmaul, N., Millar, R. J., Diehl, C., & Stockwell, I. (2024). A Facility-Level Analysis of Nursing Home Compare's Five-Star Rating and Maryland's Family Satisfaction with Care Survey. The Gerontologist, 64(7), gnad166.

Rajasagi, P., Boot, L., Wilson, L. E., King, T., Zuber, J., **Stockwell, I.**, & Komlodi, A. (2024, June). SEEe Immersive Analytics System: Enhancing Data Analysis Experience within Complex Data Visualization Environments. In Proceedings of the 2024 ACM International Conference on Interactive Media Experiences (pp. 408-415).

Kusmaul, N., Millar, R. J., Diehl, C., & **Stockwell, I.** (2023). A Facility-Level Analysis of Nursing Home Compare Five Star Rating and Maryland's Family Satisfaction with Care Survey. The Gerontologist, gnad166.

DeGrazia Jr, R., Abdullahi, A., Mood, M., Diehl, C., **Stockwell, I.**, & Pollack, C. E. (2023). Addressing housing-related social needs for Medicaid beneficiaries: a qualitative assessment of Maryland's Medicaid § 1115 waiver program. BMC Health Services Research, 23(1), 999.

Goetschius, L. G., Henderson, M., Han, F., Mahmoudi, D., Perman, C., Haft, H., & **Stockwell, I.** (2023). Assessing performance of ZCTA-level and Census Tract-level social and environmental risk factors in a model predicting hospital events. Social Science & Medicine, 326, 115943.

Fabius, C. D., Millar, R., Geil, E., **Stockwell, I.**, Diehl, C., Johnston, D., Gallo, J. J., & Wolff, J. L. (2023). The Role of Dementia and Residential Service Agency Characteristics in the Care Experiences of Maryland Medicaid Home and Community-Based Service Participants and Family and Unpaid Caregivers. Journal of Applied Gerontology, https://doi.org/10.1177/07334648221128286

Henderson, M., & **Stockwell, I.** (2022). Designing Optimal Recommended Budgeting Thresholds for a Medicaid Program. American Journal of Managed Care, 28(7).

Henderson M, Hirshon JM, Han F, Donohue M, & **Stockwell I.** (2022) Predicting Hospital Readmissions in a Commercially Insured Population over Varying Time Horizons. J Gen Intern Med. doi: 10.1007/s11606-022-07950-2. 1-6.

Han, F. and **Stockwell, I.** (2022). Relationship between event prevalence rate and Gini coefficient of predictive model. Journal of Mathematics Research, 14(1), 46-50.

Henderson, M., Han, F., Perman, C., Haft, H., & **Stockwell, I.** (2022). Predicting avoidable hospital events in Maryland. Health Services Research, 57(1), 192-199.

Dezman, Z. D., Thurman, P., & **Stockwell, I.** (2022). The Actual, Long-Term Cost of Intentional Injury Care Among a Cohort of Maryland Medicaid Recipients. The Journal of Trauma and Acute Care Surgery, 92(3):567-573.

Keya, K. N., Islam, R., Pan, S., **Stockwell, I.**, & Foulds, J. (2021). Equitable Allocation of Healthcare Resources with Fair Survival Models. In Proceedings of the 2021 SIAM International Conference on Data Mining (SDM) (pp. 190-198). Society for Industrial and Applied Mathematics.

Merrell, M. A., Betley, C., Crouch, E., Hung, P., **Stockwell, I.**, Middleton, A., & Pearson, W. S. (2021) Screening and Treatment of Sexually Transmitted Infections among Medicaid Populations-A Two-State Analysis. Sexually Transmitted Diseases.

Willink, A., Davis, K., Johnston, D.M., Black, B., Reuland, M., **Stockwell, I.**, Amjad, H., Lyketsos, C.G. and Samus, Q.M. (2020) Cost-Effective Care Coordination for People With Dementia at Home. Innovation in Aging, 4(2), p.igz051.

Burgdorf, J., Wolff, J., Willink, A., Woodcock, C., Davis, K., & **Stockwell, I.** (2020). Expanding Medicaid coverage for community-based long-term services and supports: Lessons from Maryland's community first choice program. Journal of Applied Gerontology, 39(7), 745-750.

Davis, K., Willink, A., **Stockwell, I.**, Whiton, K., Burgdorf, J., Woodcock, C. (2018) Designing a Medicare Help at Home Benefit: Lessons from Maryland's Community First Choice Program. Commonwealth Fund Issue Brief. 1-9.

Szanton, S. L., Alfonso, N., Leff, B. A., Guralnik, J., Wolff, J. L., **Stockwell, I.**, & Bishai, D. (2018). Medicaid cost savings of CAPABLE, a person-directed program for low-income older adults with disability. Journal of the American Geriatrics Society, 66, 614-620.

Peer-Reviewed Conference Proceedings

Wang, Z., Saxena, N., Yu, T., Karki, S., Zetty, T., Haque, I., Zhou, S., Kc, D., **Stockwell, I.**, Wang, X., Bifet, A. & Zhang, W. (2023, June). Preventing Discriminatory Decision-making in Evolving Data Streams. In Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency (pp. 149-159). *Best Paper Award*

Rajasagi, P., Yekini, M., Kunisetty, S., King, T., Zuber, R.J., Boot, L., Wilson, L., **Stockwell, I.,** & Komlodi, A. (2023). Comparing and Evaluating Menu Placement for Immersive Virtual Reality. iConference 2023 Proceedings.

Peer-Reviewed Conference Presentations

Stockwell, I. (2024, June). Dueling Perspectives on Presenting Actuarial Work to Non-Technical Audiences. Presentation for the Society of Actuaries 2024 Health Meeting.

Millar, R., Diehl, C., Kusmaul, N., & **Stockwell, I.** (2023, November). Care Compare Star Ratings and Family Satisfaction in Maryland Nursing Facilities. Poster presentation for the Gerontological Society of America 2023 Annual Scientific Meeting.

Han, F., Goetschius, L. G., Henderson, M., & **Stockwell, I.** (2023, August). Predictive Model for All-Cause Mortality. Presentation for the American Statistical Association Joint Statistical Meeting.

Fakeye, O., Rana, P., Henderson, M., Han, F., & **Stockwell, I.** (2023, June). The Utility of Data from Long-Term Care Assessments for Reducing Repeated Hospital Encounters Among Medicare-Medicaid Dually Eligible Beneficiaries. Poster presentation for the 2023 Annual Research Meeting. AcademyHealth.

Stockwell, I. (2019). Risk-Based Prioritization. AcademyHealth Annual Research Meeting.

Stockwell, I., & Cannon-Jones, S. (2016). Maryland Full-Benefit Dual-Eligible Beneficiaries' Use of Medicare and Medicaid Services Preceding and Following a Medicare Inpatient Stay. Poster presentation for the AcademyHealth Annual Research Meeting.

Stockwell, I. (2015). The effects of managed long-term services and supports on service utilization and expenditures: A case study. Poster presentation for the AcademyHealth Annual Research Meeting.

Stockwell, I. (2015). Using data to plan for and implement Community First Choice. Poster presentation for the AcademyHealth Annual Research Meeting.

Stockwell, I. (2015). New Maryland Medicare-Medicaid enrollees with mental health conditions: Prior Medicare and Medicaid resource use. Poster presentation for the AcademyHealth Annual Research Meeting.

Stockwell, I. (2014). The use of clinical and functional assessment instruments. Presentation at the National Association of States United for Aging and Disabilities Conference.

Stockwell, I. (2014). Estimating Community First Choice enrollment. Presentation at the Gerontological Society of America's 64th Annual Scientific Meeting.

Stockwell, I. (2012). Improving health outcomes through coordinated care strategies. Presentation at the Medicaid Enterprise System Conference.

Stockwell, I. (2012). Designing a perfect integrated system. Presentation at The Hilltop Institute's "Information Follows the Person: Advancing LTSS Integrated Electronic Records" symposium.

Stockwell, I. (2012). Data vs. dollars: The interplay between analytical methods and rate setting. Presentation at the Center for Health Care Strategies State Planning for a High Performance Health System for Medicare/Medicaid Dual Eligibles and Implementing Innovations Meeting.

Stockwell, I. (2011). The implementation of longitudinal metrics for Money Follows the Person. Presentation at the Gerontological Society of America's 64th Annual Scientific Meeting.

Stockwell, I. (2011). Driving HCBS innovation through data and metrics. Presentation at the National Association of States United for Aging and Disabilities Conference.

Stockwell, I. (2010.) The quest for causation: An introduction to correlation and regression analysis. Presentation and publication for the North East SAS Users Group (NESUG). https://www.lexjansen.com/nesug/nesug10/hw/hw07.pdf.

Stockwell, I. (2010). Perfect information: The role of data in aging and disability policy. Presentation at the North Carolina Governor's Conference on Aging.

Stockwell, I. (2010). The role of data and analytical methods in public discovery and implementation. Presentation in response to the National Science Foundation Grand Challenge request.

Stockwell, I. (2010). Redefining “preventable”: The role of predictive analytics for the elderly and disabled. Presentation at the Institute of Mathematics and Its Applications Conference on Quantitative Modeling in the Management of Health Care.

Stockwell, I. (2009). Data integration in HCBS program development. Presentation at the National Association of State Units on Aging Winter Membership Meeting.

Stockwell, I. (2008). Techniques for evidence-based decision making using SAS. Presentation and publication for South East SAS Users Group. https://analytics.ncsu.edu/sesug/2008/ST-161.pdf.

Stockwell, I. (2008). Introduction to correlation and regression analysis. Presentation and publication for SAS Global Forum.

Stockwell, I. (2006). Data analysis: Beyond the basics. Presentation and publication for the Northeast SAS Users Group (NESUG).

Stockwell, I. (2005). Array Tutorial (2) $ Beginner Intermediate. Presentation and publication for the Northeast SAS Users Group (NESUG).

Invited Professional Presentations

Stockwell, I. (2024). Applied Statistical Triage for Population Health. Seminar for the School of Pharmacy at University of Maryland, Baltimore.

Stockwell, I. (2023). Community-Engaged Scholarship. Faculty forum for the inauguration of UMBC president Dr. Valerie Sheares Ashby.

Stockwell, I. (2022). New Frontiers in Healthcare Management. Presentation for the UMBC Life Sciences Seminar.

Stockwell, I. (2022). Applied Analytics for Medicaid. Seminar for the Center on Aging and Health (COAH) at Johns Hopkins University.

Stockwell, I. (2021). The Pre-AH Model. Seminar for the Center for Health Services and Outcomes Research (CHSOR) at Johns Hopkins University.

Stockwell, I. (2021). Statistical Triage with Predictive Analytics. Presentation for the Maryland Hospital Association.

Stockwell, I. (2021). How Analytics Can Advance Health and Wellbeing for Marylanders. Seminar for the cardiology division of the University of Maryland School of Medicine.

Haft, H., **Stockwell, I.**, and Williams, T. (2020). Actionable, Timely, Consistent Health Information Reliably Delivered. Panel presentation for the Chesapeake Regional Information System for our Patients (CRISP) Annual Conference.

Steiner, K., Boot, L., **Stockwell, I.**, Woodcock, C., Miller, N., Sterett, S. (2020). Data for Health: Informing Public Policy through a Transdisciplinary Approach to Data Exploration. Presentation to Department of Health and Human Services (DHHS) staff under RADM Sylvia Trent-Adams, Principal Deputy Assistant Secretary for Health.

Stockwell, I. (2019). Three Case Studies in Healthcare Data Analytics. Presentation for the DataWorks Maryland Meeting.

Stockwell, I. (2015). The use of data in aging and disabilities research. Presentation for the High-Performance Computing Research Forum at UMBC.

Stockwell, I. (2011). The availability and use of community-level data on determinants of health. Presentation at The Hilltop Institute's "Responding to Community Health Needs within the Framework of the Affordable Care Act" symposium.

Stockwell, I. (2011). Medicaid LTSS in Maryland: Money Follows the Person metrics. Presentation for the Maryland Commission on Disabilities.

Non-Peer-Reviewed Publications

Henderson, M., Betley, C., **Stockwell, I.**, Middleton, A., Clark, M., & Woodcock, C. (2022). The Economic impact of Medicaid expansion in Mississippi, 2023–2028: Technical report. Baltimore, MD: The Hilltop Institute, UMBC.

Henderson, M., & **Stockwell, I.** (2018). Rate Methodology Study Pursuant to Section 2 of House Bill 1696-2018. Baltimore, MD: The Hilltop Institute, UMBC.

Cannon Jones, S., & **Stockwell, I.** (2016). An analysis of selected mental health conditions among Maryland full-benefit dual-eligible beneficiaries. Baltimore, MD: The Hilltop Institute, UMBC.

Betley, C., & **Stockwell, I.** (2016). Characteristics of Maryland full-benefit dual-eligible beneficiaries with three or more inpatient stays. Baltimore, MD: The Hilltop Institute, UMBC.

Cannon-Jones, S., & **Stockwell, I.** (2016). Maryland full benefit dual-eligible beneficiaries' use of Medicare and Medicaid services preceding and following a Medicare inpatient stay. Baltimore, MD: The Hilltop Institute, UMBC.

Stockwell, I., Tripp, A., & Natanov, R. (2014). The effects of managed long-term services and supports on service utilization and expenditures: A case study. Baltimore, MD: The Hilltop Institute, UMBC.

Stockwell, I., & Tripp, A. (2014). New Maryland Medicare-Medicaid enrollees with mental health conditions: Prior Medicare and Medicaid resource use. Baltimore, MD: The Hilltop Institute, UMBC.

Stockwell, I., Tripp, A., & Folkemer, D. (2012). New Medicare-Medicaid enrollees in Maryland: Prior Medicare and Medicaid resource use. Baltimore, MD: The Hilltop Institute, UMBC.

Johnson, K., Folkemer, D., & **Stockwell, I.** (2011). New Medicare-Medicaid enrollees in Maryland: Demographic and programmatic characteristics. Baltimore, MD: The Hilltop Institute, UMBC.

Woodcock, C., Milligan, C., **Stockwell, I.**, & Tripp, A. (2011). Rebalancing long-term services and supports: Progress to date and a research agenda for the future. Baltimore, MD: The Hilltop Institute, UMBC.

Woodcock, C., **Stockwell, I**., Komisar, H., & Tripp, A. (2010). Rhode Island Real Choices long-term services and supports resource mapping: Final report. Baltimore, MD: The Hilltop Institute, UMBC.

Intellectual Property

US Patent App. 17/359,821, (2022). Systems and methods for determining indicators of risk of patients to avoidable healthcare events and presentation of the same. Pending.

US Patent App. 17/359,797, (2021). Systems and methods for determining indicators of risk of patients to adverse healthcare events and presentation of the same. Pending.

US Provisional Patent Application 63/592,595, (2023). Optimized patient-provider matching

US Provisional Patent Application 63/647,115, (2024). Model Agnostic Prediction Infrastructure

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Department

2024-2025	Member, On-campus Information Systems Graduate Committee
2023-2024	Member, Information Systems Faculty Search Committee
2023-2024	Member and Seminar Coordinator, Information Systems Research Committee

PH.D. Students

2027 (exp)	Mohammad Rahman, Information Systems, Chair
2026 (exp)	Hala Algrain, Information Systems, Chair
2026 (exp)	Saad Ahmad Kahn, Information Systems, Chair
2026 (exp)	Damaruka Priya Rajasagi, Information Systems, Committee Member Dissertation: “Sensemaking in Complex Multidata Immersive Analytics Systems”
2026 (exp)	Sancharee Hom Chowdhury, Information Systems, Committee Member Dissertation: “Towards an Intelligent Clinical Support System for Monitoring and Managing Paroxysmal Sympathetic Hyperactivity”
2025 (exp)	Marya Ford, Information Systems, Committee Member Dissertation: “Implementability of Clinical Practice Guidelines (CPGs) for Maternal Health care”
2024	James Clavin, Information Systems, Committee Member Dissertation: “Integrating Knowledge Graphs With Byzantine Fault Tolerance for Insuring Compliance: Medical Data Polygraph”
2020	Pooja Parameshwarappa, Information Systems, Committee Member Dissertation: “Clustering Approaches for Anonymizing High-Dimensional Sequential Activity Data”

Courses

IS410/610 - Introduction to Database Design	Fall 2024
IS 460/660 - Health Informatics I	Fall 2023, Fall 2022
IS 461/661 - Health Informatics II	Spring 2023, Spring 2022, Spring 2021

IS 670 - Health Informatics	Summer 2022, Summer 2021, Summer 2020
HIT 658 - Health Informatics I	Spring 2022

Service to the University

2024-2025	Member, Faculty Senate Open Access Fund Committee
2024-2025	Member, Research and Creative Achievement Data Stewardship Committee
2024-2025	Member, Faculty Senate Open Access Fund Committee
2024	Member, COEIT Facilities Renewal Request Committee
2023-2024	Member, UMBC Campus Research Computing Task Force
2022-Present	Associate Director of Healthcare Research, COEIT
2020-2022	Member, UMBC Violence Prevention Workgroup

Service to the Community and Profession

2024	Reviewer, Journal of the American Medical Informatics Association
2024	Mentor for Tanisha Sharma, Science, Mathematics, Computer Science (SMCS) Magnet Program at Poolesville High School studying the effects of private equity on health outcomes
2023-2024	Reviewer, UMB Institute for Clinical & Translational Research (ICTR) Accelerated Translational Incubator Pilot (ATIP) grant program
2023-Present	Advisory panel member for Dr. Chanee Fabius at Johns Hopkins University, National Institute of Aging Research Scientist Development Award (K01) titled “Improving Information Sharing Between Family Caregivers and Home Care Aides Caring for Persons Living with ADRD”
2023	Expert Reviewer, Technical Assistance Guide for Medicaid Section 1115 Demonstrations on Health-Related Social Needs, Mathematica Policy Research
2023	Mentor for Kiki Onabiyi, Gifted and Talented Research Program at Marriotts Ridge High School studying health disparities and how they affect black minors
2023	Program Committee Member, iConference 2024
2023	Program Committee Member, ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT) 2023
2022-2023	Member, Microsoft Academic Research Community Advisory Board
2021-2024	Member, Finance and Sustainability Committee for the Johns Hopkins Baltimore Metropolitan Diabetes Regional Partnership

CURRICULUM VITAE

WILLIAM F. RYAN

EDUCATION

M.S.A.	2007	Central Michigan University (Information Resource Management)
B.S.	1986	University of Maryland University College (Information Systems)

Experience in Higher Education

August 2020 to Present, Assistant Teaching Professor – Department of Information Systems
University of Maryland Baltimore County, Baltimore, MD 21250

May 2017 to July 2020, Adjunct Professor - Information Systems
University of Maryland, Global Campus, Adelphi, MD 20783

August 2014 to May 2020, Adjunct II - Information Systems/Technologies / Management
University of Maryland Baltimore County, Catonsville, MD 21250

August 2013 to May 2020, Adjunct III - Information Technologies
Howard Community College, Columbia, MD 21044

August 2011 to December 2014, Adjunct - Information Technologies
Anne Arundel Community College, Arnold, MD 21401

Experience in Other than Higher Education

July 2013 to Present, Senior Fellow, Center for Digital Government

December 2006 to March 2013, Chief Information Officer (Information Technology Officer)
Anne Arundel County Maryland, 44 Calvert Street, Annapolis, MD. 21401

1976 – 2005: Various Information Technology and Systems, Management and Technical positions

Honors Received

2019 UMBC Adjunct Award for Excellence in Teaching

2021 UMBC FDC STEM teaching certification (April 2021)

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

September 2020 – present, Service to the Department of Information Systems:

Adjunct Committee for Information Systems

Student Advising for Information Systems

Lecturer/Pop Search Committee for Information Systems 2021, 2024

Mission/Vision Committee for Information Systems 2021

Undergraduate Services Committee for Information Systems

CWIT Student mentor, Scholarship Evaluator, and Interviewer, Event participant

COEIT Transfer Institute (CETI) Summer 2021 & 2022

Information Systems Security Association Faculty Advisor

PeerSIST Grant participant

BPC IS Department Activities

IS 300 Course Program Coordinator (Fall 2022 to present)

IS Department Merit Review Committee

October 2020 to present, Service to UMBC

Athletic Policy Committee Chair

Arbitrary and Capricious Grading Committee

Organization and University Operations (May 2021-)

Winter Orientation Advisor

Summer Orientation Advisor

Undergraduate Commencement/Graduation staff

March 2021 to Present Service to the University System of Maryland

UMD Information Challenge Judge

May – August 2020 to Present, Service to the Profession

Senior Fellow, Center for Digital Government

The attached curriculum vitae is complete and accurate.

Signature: *William F. Ryan*

Printed Name: William F. Ryan

Date: December 9, 2024

CURRICULUM VITAE

ERIN K. VAN DYKE

EDUCATION

Ph.D.	2019	University of Maryland, Baltimore County, Information Systems
M.S.IS	2015	University of Maryland, Baltimore County, Information Systems
B.S.	2008	Art Institute of Portland, Digital Media Production

Experience in Higher Education

2020 – Present — University of Maryland, Baltimore County, Professor of the Practice and Graduate Program Director, Health Information Technology MPS

- HIT 658: Health Informatics I
- HIT 759: Health Informatics II
- HIT 760: Health Informatics Capstone

2019 – 2020 — University of Maryland, Baltimore County, Adjunct I, Information Systems

- IS 436: Structured Systems Analysis and Design
- IS 460/660: Health Care Informatics I
- IS 636: Structured Systems Analysis and Design

Experience in Other than Higher Education

2019 – 2020	Research Scientist, The Johns Hopkins Hospital and Health System
2017 – 2020	Associate Director of Assessment & Evaluation, The Johns Hopkins Hospital
2014 – 2017	Researcher & Evaluator, Nursing Grants Research, The Johns Hopkins Hospital
2013 – 2014	Project Analyst, Nursing Grants Research, The Johns Hopkins Hospital
2010 – 2013	Central Nursing Coordinator, Clinical Informatics, The Johns Hopkins Hospital

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Publications

Lu, M. A., O'Toole, J., Shneyderman, M., Brockman, S., Cumpsty-Fowler, C., Dang, D., Herzke, C., Rand, C. S., Sateia, H. F., **Van Dyke, E.**, Eakin, M. N., & Daugherty Biddison, E. L. (2023). "Where You Feel Like a Family Instead of Co-workers": a Mixed Methods Study on Care Teams and Burnout. Journal of General Internal Medicine, 38(2), 341–350. https://doi.org/10.1007/s11606-022-07756-2

Presentations

Conference/Poster Presentations (Juried/Refereed)

E. Van Dyke
Advancing Leadership and Growth in Health Information Technology
MDHIMSS Health + Tech Conference
April 2024
Baltimore, MD

R.I. Bjarnadottir, L. Walters-Threat, A. Reimer, R.R. Austin, M. Dardis, S. Hull, K. Dunn Lopez, **E. Van Dyke**, L. Hoeksema, K. Cato
Development and Application of Social Determinants of Health Data
American Medical Informatics Association Annual Symposia
November 2023
New Orleans, LA

C. Cumpsty-Fowler, **E. Van Dyke**, D. Dang
Transcending the Scarcity Narrative: Understanding and Leveraging Nursing's Strengths to Create a Healthier Work Environment
Creating Healthy Work Environments 2017, Sigma Theta Tau International
March 2017
Indianapolis, IN

C. Cumpsty-Fowler, **E. Van Dyke**
Providing Direction for Strategic Nurse-led Change: The Power of Positive Questions
111th Annual Convention of the Maryland Nursing Association
October 2014
Baltimore, MD

Other Professional Presentations

Advancing Leadership and Growth in Health Information Technology (invited speaker)
MdHIMA Education Session
October 2024
Baltimore, MD

Digital Transformation of the Healthcare Sector (invited panelist)
Public Advocacy Series, University of the West Indies – Five Islands Campus
February 2022
Virtual

The Future of e-Learning at UMBC (invited panelist)
National Distance Learning Week 2021
November 2021
Virtual

Evaluating Complexity in Health Information Technology (invited speaker)
EDUCO event, University of Maryland, Baltimore County
October 2020
Virtual

Preparing to Design Your Quality Improvement Efforts
SOARING Day, The Johns Hopkins Hospital
2018
Baltimore, MD

Questioning Strategies to Avoid the "Obvious" Problem and Solution Trap
Nursing Scholars Day, The Johns Hopkins Hospital
2017
Baltimore, MD

Using Qualitative Inquiry and Evaluative Thinking to Enhance the Integrity of Implementation Science
Research Scholars Cohort, Johns Hopkins Nursing
2017
Baltimore, MD

Media Activities

February 2022, Television interview to promote event on health informatics (ABS TV – hosted by University of the West Indies – Five Islands)

November 2020, Podcast interview to promote the Health IT MPS program (with DPS)

November 2020, Recorded Welcome video for new students (with DPS)

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITE AND PROFESSION

Service to the Department

2022 – Present, Chair, IS Graduate Professional Programs Committee

2022 – 2023, Chair, Assistant Graduate Program Director (HIT Search Committee)

2021 – 2022, Member, IS Graduate Committee

2021 – 2022, Member, IS Visioning Committee

Service to the University

2022 – Present, Member, Health Equity Convening

Service to the Profession

2023 – Present, Committee Member, Health Information and Management Systems Society, Maryland Chapter

2023 – Present, Member, Association for Computing Machinery

2012 – Present, Member, American Medical Informatics Association

2012 – Present, Member, American Nursing Informatics Association

HONORS/AWARDS/RECOGNITIONS

2024, COEIT Excellence in Teaching Award, College of Engineering and Information Technology, UMBC

2024, Career Connector Recognition, Career Center, UMBC

PROFESSIONAL DEVELOPMENT ACTIVITIES

2022 – 2024, ALIT Certificate Program, UMBC Faculty Development Center

2024, Encouraging Academic Integrity in the Era of AI, UMBC Faculty Development Center, Workshop

2023, Professional Development Workshop for Teaching-Track Faculty, SIGCSE 2023

2023, Ungrading Experiences at UMBC, UMBC Faculty Development Center, Workshop

2023, AI Generative Tools: Implications for Teaching, UMBC Faculty Development Center, Workshop

2023, Sharpen and Shape-up Your Syllabus, UMBC Faculty Development Center, Workshop

2022, Reading for Learning, UMBC Faculty Development Center, Workshop

2022, Building a Class Community, UMBC Faculty Development Center, Workshop

2021, Trauma-Informed Practices: Building Faculty Resilience, UMBC Faculty Development Center, Workshop

2020, Motivating Students, UMBC Faculty Development Center, Workshop

2020, Active Learning Online, UMBC Faculty Development Center, Workshop

2020, Sustaining Community: Cultivating Human Connection in the Virtual Classroom, UMBC Faculty Development Center, Workshop

2020, Graphic Syllabus Session, UMBC Faculty Development Center, Workshop

2020, Trauma-Informed Educational Practices, UMBC Faculty Development Center, Workshop

TEACHING EXPERIENCE

Information Systems Department, University of Maryland, Baltimore County

HIT 658: Health Informatics I - Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022

- Developed and recorded weekly lectures for online, asychronous course; facilitated discussions; held regular office hours; met with course project teams to provide feedback on milestone deliverables; evaluated course
- Initiatives for Fall 2021-Spring 2022: incorporated student reflections, updated videos/modules to align with current research on engagement, added knowledge checks, update to new textbook version, building in project planning/management discussions as part of the course project, added self-reflection to course project; migrated to Blackboard Ultra

HIT 759: Health Informatics II - Spring 2023, Fall 2023, Spring 2024, Fall 2024

- Developed, delivered, and recorded weekly lectures for in-person & online course (hybrid); held regular office hours; designed in-class exercises to align with lectures and current industry priorities; evaluated course
- Initiatives for Fall 2023: introduction of Grand Rounds, flipped classroom model with skills application during in-person classes, student reflections, peer review of key deliverables, updated videos/modules to align with current research on engagement, added knowledge checks, update to new textbook version, building in project planning/management discussions as part of the course project, added self-evaluation to course project and tracking of individual contributions; migrated to Blackboard Ultra
- Received excellent scores & feedback in Classroom Assessment for Teaching and Learning (CATALyst)

HIT 760: Health Informatics Capstone - Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024

- Engaged with students individually in-person and online; provided regular feedback on weekly milestones; updated resources and materials to reflect current student topics; evaluated course
- Initiatives for Spring 2023: cohort orientation (all sections), topic brainstorming, weekly progress checks, individual and collective feedback, cohort final presentations (all sections)

IS 436: Structured Systems Analysis and Design - Fall 2020

- Delivered weekly lectures for synchronous online course (due to COVID-19 pandemic); facilitated skills application exercises; held regular office hours; deployed midterm course evaluation for feedback

IS 460/660: Health Informatics I - Fall 2019

- Developed and delivered weekly lectures for in-person course; led writing workshops; held regular office hours; deployed midterm course evaluation for feedback

IS 636: Structured Systems Analysis and Design - Spring 2020

- Developed and delivered weekly lectures for in-person course (pivoted to online mid-term due to COVID-19 pandemic); redesigned materials for online delivery; created resource guides to assist students; held regular virtual office hours and check-ins; deployed midterm course evaluation for feedback

Independent Studies (MPS)

- Ally Nooher, Health IT MPS, Spring 2024
- Shiva Sai Lokini Prasad, Health IT MPS, Spring 2024
- Mounikachary Guruvoju, Health IT MPS, Spring 2024
- Vineela Bhatgavi Matta, Health IT MPS, Fall 2023
- Sarah Priyanka Balumuri, Health IT MPS, Spring 2023
- Hala Algrain, Health IT MPS, Fall 2022
- Laiba Ahmad, Health IT MPS, Spring and Summer 2021

ADVISING EXPERIENCE

Information Systems Department, University of Maryland, Baltimore County

- Held advising hours twice a week to serve students as academic advisor
- Provided program-level support for students as Graduate Program Director
- Advised Graduate students on course selection and degree requirements
- Provided individualized guidance on electives that aligned with academic and professional goals
- Guided students to campus resources
- Identified and assisted students in need of academic support
- Developed a Frequently Asked Questions resource for students to communicate policies and procedures
- Facilitated Health IT Orientation sessions, Open Houses, and Q&A sessions each term (Fall/Spring)
- Offered feedback and guidance on post-graduate opportunities (career, certifications, doctorates, etc.)

ZEHRA ZAIDI

US Born Citizen

6520 Burgundy Lane Clarksville, MD 21029

(240) 461-5594 zzaidi1@umbc.edu

Accomplished and enthusiastic IT professional with 20 years of varied experience in the IT industry. Considerable knowledge and experience with various sized system implementations, including project planning, business process re-engineering, requirements gathering, programming, and testing. Extensive technical knowledge and experience in gathering requirements in addition to teaching multiple college level courses at the University of Maryland on how to effectively capture system requirements using various methodologies. Creative and aggressive self-starter exhibiting integrative thinking skills, with the capability of forming and maintaining positive and productive working relationships in both independent and team environments.

SKILLS

Software: Microsoft Visual Studio, Microsoft SQL Server, Oracle, Microsoft Access, Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Visio, Microsoft Project, Microsoft SharePoint, Macromedia Director, Macromedia Dreamweaver, Corel WordPerfect, Micro station 95, Adobe Photoshop, Adobe Illustrator, Lotus Notes, Drupal, Jira, Confluence, Balsamiq, and Tableau
Programming: Python, C, C++, HTML, ASP, XML, JavaScript, JavaScript Frameworks, VBScript, SQL, SQL+, Visual Basic, Ada, Microsoft .Net, XML, XHTML, HTML5, PHP, AJAX, CSS
Project Management: Project Life Cycle Management, Cross-Functional Team Leadership, New Product Development, Issues & Risk/Change Management, Software Development Lifecycle – Scrum, Waterfall, Agile, Portfolio Prioritization, Resource Planning, PMO/PM Budgeting, Risk Management

EDUCATION

University of Maryland, University College (UMUC) MS Computer Systems Management, Degree Received May 2006, Concentration: Information Assurance

University of Maryland, Baltimore County (UMBC) BS Information Systems, Degree Received May 2002, Concentration: Systems Analysis and Design

TRAINING

Microsoft SQL Server 2008 Reporting Services February 2012

PMP Training August 2012

A+/Network +/Security + September 2013

SharePoint 2010 Level 1/ Level 2/ Designer August 2013

Certified Scrum Master (CSM) July 2016, July 2018

Agile CxO © Agile Holarchy Instructor August 2018

Agile CxO © Agile Holarchy Coach August 2018

Agile CxO © Agile Assessor August 2018

Certified Scrum Product Owner (CSPO) May 2019

PROFESSIONAL EXPERIENCE

Lecturer

University of Maryland Baltimore County Baltimore, MD August 2022 - Present

- Create syllabus, curriculum, exams and conduct lectures for following courses:
    - **Structured Systems Analysis and Design**: Advanced study and application of structured analysis and design methods throughout the system life cycle. Emphasis is given to the common approaches for gathering requirements (including Waterfall, Agile, Prototype), modeling (Data Flow Diagrams, Entity Relationship Diagrams), analyzing and designing information systems. In depth analysis on how to create use cases when gathering requirements is emphasized. Managing the complexity of system development projects is also addressed.
    - **Markup and Scripting Languages** – Cover client-side web technology including XHTML, CSS, and JavaScript, server-side web technology, such as CGI and PHP, common databases used with web technology, and XML.
    - **Software and Hardware Concepts -** A survey of technical topics related to computer systems with emphasis on the relationships between hardware architecture, system software and applications software. The architecture of processors and storage systems are explored, and the implications for systems software design are covered, along with the impact of hardware and system software design on the development of application programs in a business environment.
    - **Introduction to Data Visualization –** Introduction to data analytics, blending inferential and computational thinking through the manipulation of real data. Anchor understanding of both the principles and practice of data science. Learn critical concepts and skills in computer programming and statistical inference, along with engaging in hands-on analysis of real-world datasets, including economic data, document collections, geographical data, and social networks. Additionally, explore the social issues surrounding data analysis, such as privacy.
- Participate in multiple committee assignments
    - Department:
        - Undergraduate Committee Participant – Member (2022-2023)
        - Honors and Awards Committee – Chair (2022-2023)
        - Hiring Committee – Member (2023-2024)
        - Merrit Review Committee – Member (2024)
    - University:
        - Faculty Affairs Committee – Member (2023-2024)
- Participate in BPC

- Goal 3: Assist in obtaining qualitative data on experiences with pre-gateway and gateway courses

Director of Product Management

Qlarant Easton, MD November 2019 – December 2021

- Manage growth, development, and implementation of flagship platform RIViR ™ - a high-powered, artificially intelligent, data analytics solution.
  - Lead product oversight through full product management life cycle, from product vison and strategy, development and execution of product roadmap, launch, and ongoing management.
  - Manage and direct UI and UX design with team to assist in translating navigation and process flow into a platform.
  - Assist in developing and coordinating wireframe design for all web pages.
  - Coordinate User research to identify feature development for RIViR ™
  - Ensure RIViR ™ is a Commercial Off-The-Shelf (COTS) software implementation.
- Develop and maintain multi-million-dollar Research and Development budget. Work with directly with CFO define capitalization budgets and amortization deadlines.
- Implement Requirements Elicitation, Development and Testing processes for software development to ensure a high-quality product is always delivered.
- Report directly to the CEO.
- Report weekly to all C-Level executives.
- Configured and integrated solutions in RIViR™ for various industries:
  - **Higher Education** – Developed an action-based solution to assist with enhancing retention, enrollment, and recruitment rates for a public university. Assisted in facilitating algorithm development to identify high risk students and courses of action to ensure retention rates are maintained and improved upon. Designed and conveyed requirements to data analysts for trending dashboards that can be viewed by senior leadership to evaluate progress.
  - **Fraud, Waste, and Abuse - Healthcare**
    - **MFCU:** Assisted in facilitating an action-based solution for the Medicaid Fraud Control Unit inclusive of a case management component for Investigators.
    - **Program Integrity:** Assisted in facilitating an action-based solution for Program Integrity that can be leveraged across multiple States.
  - **Value Based –** Developed an action-based solution that used analytics to identify wasteful spending in the management of osteoarthritis and joint surgery population.

Part-Time Instructor

University of Maryland Baltimore County Baltimore, MD January 2012 – August 2022

- Create syllabus, curriculum, exams and conduct lectures for following courses:

- **Fundamentals of Human-Computer Interaction** - Survey of human factors and human computer interaction relevant to the design and use of information systems. It describes the contributions of information systems, computer science, psychology, sociology, and engineering to human computer interaction.
- **Structured Systems Analysis and Design**: Advanced study and application of structured analysis and design methods throughout the system life cycle. Emphasis is given to the common approaches for gathering requirements (including Waterfall, Agile, Prototype), modeling (Data Flow Diagrams, Entity Relationship Diagrams), analyzing and designing information systems. In depth analysis on how to create use cases when gathering requirements is emphasized. Managing the complexity of system development projects is also addressed.
- **Intermediate Business Applications** – Introduce students to business-oriented application programs to include intermediate functions from typical productivity software found in many businesses and organizations. Stress use of case studies to develop and implement solutions using functions from programs such as spreadsheets and databases.
- **Markup and Scripting Languages** – Cover client-side web technology including XHTML, CSS, and JavaScript, server-side web technology, such as CGI and PHP, common databases used with web technology, and XML.
- **Introduction to Computer Based Systems** - Introduces computer hardware, software, procedures, systems, and human resources, and it explores their integration and application in business and other segments of society.

- Teach a class of 24-47 students in a computer lab environment.

Director of Project Management Office and Quality Assurance

Mosaic Learning Columbia, MD November 2018 – November 2019

- Formalized a Project Management Office for the organization
- Formulated a risk management strategy to ensure projects remained on track and risks or issues could immediately be identified and addressed.
- Reduced budget deficit by 500,000 within first 6 months of managing budget.
- Implemented a resource management program to ensure all personnel were 90% billable.
- Implemented multiple controls to ensure budgets, scope, and schedules were routinely monitored across the company.
- Managed $10 million dollar budget across 20+ projects.
- Supported multiple custom Learning Management Systems for various trade unions (United Brotherhood of Carpenters, Electrical Training Alliance, etc.)
- Oversaw multiple custom e-learning solution projects from inception to delivery.
- Drove and strategized the Agile Transformation for the entire company.
    - Established a scrum and Kanban baselined to be used by all projects.
- Conducted multiple training sessions for the Agile Transformation and mentored all teams.
- Developed strategies to maximize synergies among program areas (Scrum of Scrums, Department Head Standups)

- Rescoped and managed implementation of Career Connections LMS for the United Brotherhood of Carpenters. The application is used by 10,000 – 12,000 high school students across the nation.

Director of Project Management Office

Qlarant (formerly known as Quality Health Strategies) Easton, MD January 2018 – November 2018

- Helped standardize project management processes across the PMO to ensure CMMI compliancy was being achieved. As a result, the company was able to attain a CMMI Level 3 Maturity Level
- Managed all key stakeholder relationships and cross-functional project teams. Communicated, influenced, and negotiated vertically and horizontally to obtain agreement between partners.
- Monitored implementation and execution of all projects across the PMO department.
- Served as a Technical Project Manager for new software development and high visibility projects to ensure alignment with company vision.
- Coordinated building of proof of concepts (POC), wireframes, user stories, and requirements for new products.
- Created business cases, strategies, and methodologies that were presented to IT and Executive teams.
- Implemented Scrum product management and Agile development methodologies.
- Assisted with forecasting budgets for new product development and ensured the projects remained within budget.

Technical Project Manager

Quality Health Strategies Easton, MD December 2016 – January 2018

- Served as Technical Project Manager for new software development.
- Managed and analyzed issues and risks across multiple projects and develop mitigation plans as needed.
- Utilized Agile project management strategies. Created detailed project roadmaps, plans, schedules, and work breakdown structures; Scheduled, monitored, and tracked technical progress against defined timetables and budgets; Served as Scrum Master on multiple projects.
- Aided in standardizing project management processes across the PMO to ensure CMMI compliancy is being achieved. As a result, the company was able to pass the SCAMPII B.
- Developed and managed project budgets
- Managed multiple project implementation at any given time.

Project Manager

5AM Solutions Rockville, MD June 2016 – November 2016

- Serve as a Scrum Master for a cross-functional Scrum team.
- Use Agile and Kanban frameworks to manage product development workflow.

- Work to combine client vision with in-house wireframe designers to provide clear design specifications.
- Coordinate daily communication inclusive of Sprint Planning, Daily Standups, Sprint Review and Retrospectives, and Backlog Grooming
- Write User Stories based on requirements gathered from stakeholders.

Project Manager and Planning Operations Representative

Lockheed Martin – Information Systems and Global Solutions Fairfax, VA March 2014 – June 2016

- Reviewed training procedures implemented department wide and provide in depth evaluation to senior management on weaknesses and methods of increasing efficiency.
- Created training curriculum and design training courses for customers and internal staff. Provided direction to training team on how to proceed.
- Managed, trained, and mentored a team of consultants that conducted daily help desk support.
- Conducted demos of Lockheed Martin proprietary software for potential customers.
- Acted as a liaison between the technical team, project managers and consultants to improve communication.
- Identified areas for business development and communicated them to senior management.
- Worked directly with Lockheed Engineering team to identify new features for COTS based product to improve support for customers.
- Assisted junior consultants in evaluating complex customer business processes and capturing requirements.
- Served as an escalation resource for complex data requests from customers. Created complex reports in SQL to extract data as needed by customers.
- Utilized strong analytical and research techniques to identify gaps and inconsistencies within current customer business processes.
- Coordinated and facilitated extensive user interviews and workshops to gather and analyze requirements.
- Gathered requirements from business users and translate them to the technical team using functional design documents.

Senate Program Manager/Project Management Representative

Lockheed Martin – Information Systems and Global Solutions Fairfax, VA October 2013 – February 2014

- Managed a multi-million-dollar project for the US Senate; manage 52 US Senate offices
- Conducted installations of Constituent Services Software (CSS) for US Senate - State and DC offices
- Implemented replication between State and DC office servers.
- Managed, trained, and mentored a team of consultants that conduct daily help desk support.
- Conducted demos of Lockheed Martin proprietary software for potential customers.
- Acted as a liaison between US Senate Sergeant of Arms and Lockheed Martin business unit.
- Ensured all Service Level Agreements (SLA) required by the US Senate are attained. All SLA's have been met since transitioning to new US Senate project.
- Recommended new features to Lockheed Engineering team as per the customer needs.

- Served as an escalation resource for junior consultants.
- Interfaced with customers on a regular basis to ensure a high level of customer satisfaction was always attained.

Program/Customer Project Management Representative

Lockheed Martin – Information Systems and Global Solutions Fairfax, VA March 2010 – October 2013

- Managed constituent management system for various state governor offices (Minnesota, Wisconsin, New Jersey, Maryland, Alabama, West Virginia, Tennessee, Indiana) and federal offices (Department of Justice)
- Collaborated and managed customer relationships through system implementation.
- Experienced in implementing cloud-based solution for COTS based product in various customer environments.
- Coordinated collaboration between customers and subject matter experts to define and analyze business processes.
- Created and maintained project schedules in Microsoft Project through all stages of SDLC.
- Maintained Requirements Traceability Matrix (RTM) to ensure data integrity.
- Served as liaison between customer and engineers.
- Monitored, updated, and communicated project timelines and milestones to senior management.
- Provided project management, and project documentation for several on-going projects.
- Coordinated change requests with all systems and stakeholders including system administrators, management, and government representative.
- Facilitated development, coordination, documentation, and training of new processes, identified process gaps, and maintained methodology change control process and content management process.
- Monitored and verify that projects adhere to methodology technical and functional requirements at all times.
- Developed reports in SQL for federal agencies (Department of Homeland Security, Department of Veteran Affairs, The White House, Department of Justice) for use by upper management.
- Analyzed current business processes used by Department of Justice – Community Relation Services and assisted in creating a solution in COTS software to ensure business requirements are being captured.
- Ensured current COTS based software implementation fully always complied with Federal Information Security Management Act.
- Used ITSM to keep track of customer requests and to ensure requests were responded back to in a timely manner.

System Integration Business Analyst Senior

Lockheed Martin–Information Systems and Global Solutions Fairfax, VA December 2007 – February 2010

- Provided escalation technical support to help desk to resolve complex issues.
- Maintained database application, focusing on data integrity. Accomplished by working heavily with SQL and various in-house database applications.

- Developed and conducted technical training for new employees.
- Served as a subject matter expert for junior level consultants.
- Developed reports in SQL for federal agencies such as Department of Homeland Security, Department of Justice, and Department of Veteran Affairs.

Computer Systems Analyst/ Information Technology Consultant

Lockheed Martin – Information Technology Fairfax, VA July 2005 – December 2007

- Project manager experience supporting enterprise government contracts, relating to the areas of licensing, technical requirements, security requirements, and scope of project requirements.
- Served as the primary point of contact for government clients (White House, Senate, and Department of Homeland Security) relating to customized proprietary software application.
- Developed and maintained relevant business processes relating to dataflow from user input to report generation. SDLC lifecycle fully and successfully implemented and maintained.
- Conducted classroom and desk-side training for end users of proprietary software program, using lectures and hands-on exercises.
- Performed technical planning, system integration, verification and validation, cost and risk, and supportability and effectiveness analyses for total systems.
- Performed analyses at all levels of total system product to include concept, design, fabrication, test, installation, operation, maintenance, and disposal. Ensured the logical and systematic conversion of customer or product requirements into total systems solutions that acknowledge technical, schedule, and cost constraints.
- Performed functional analysis, timeline analysis, detail trade studies, requirements allocation and interface definition studies to translate customer requirements into hardware and software specifications.

System Engineer Associate

Lockheed Martin –Integrated Systems and Solutions Springfield, VA November 2002 – June 2005

- Documented performance of Global Command and Control System for Army (GCCS-A) strategic baseline software –written in ADA – as software requirements.
- Worked within a team of System Engineers to map system requirements to software requirements.
- Generated test documentation based on the performance metric evaluation of new software release.
- Managed worksite maintained corporate standards of excellence, ethics, and compliance.
- Reported performance of employees to upper-level managers in management performance review sessions.

Web Application Developer

General Electric/Global Exchange Services Gaithersburg, MD June 2000 – October 2002

- Designed and developed web-based intranet database applications using Active Server Pages, VBScript, JavaScript, and SQL Server that allowed supervisors to keep track of departmental projects.
- Worked with multiple 150 table databases, performed consistency checks, back-up and recovery, and table integration.
- Developed technical architecture of web sites including scripting, database design, and user interface design.
- Studied ergonomics to incorporate into website design.
- Analyzed existing system used for keeping track of department reports and designed and implemented new system.
- Used Data Transformation Services to import data between different applications i.e., Excel and SQL Server.
- Monitored time reporting for contractors and processed timesheets and invoices.
- Developed a cross-department web-based system that kept track of work progress. This system included an employee management system tracking and reporting on the daily work progress for each employee. Front end designed in ASP and a back end in SQL Server 2000. The report allowed department managers to assess employee performance, which were used in crucial financial analysis.

CURRICULUM VITAE

ZHIYUAN CHEN

EDUCATION

Ph.D.	2002	Cornell University, Computer Science
M. S.	1997	Fudan University, China, Computer Science
B.S.	1995	Fudan University, China, Computer Science

Experience in Higher Education

2020 –	UMBC, professor, information systems
2024 -	UMBC, chair, information systems
2023 – 2024	UMBC, interim chair, information systems
2019 - 2023	UMBC, associate chair for academic affairs, information systems
2010 – 2020	UMBC, associate professor, information systems
2012 – 2019	UMBC, graduate program director for IS on campus programs
2004 – 2010	UMBC, assistant professor, information systems

Experience in Other than Higher Education

2002 – 2004	Microsoft research, Redmond, WA, Postdoctoral Researcher

Honors Received

2013	Best paper award, Knowledge Science, Engineering and Management - 6th International Conference, KSEM 2013, Dalian, China

Research Support and / or Fellowships

2024-2025	$45,000, "Detecting Stealthy Long-term Cyber Attacks on Wind Energy Assets with Physics-informed Neural Network Technologies", UMBC Cybersecurity Leadership – Exploratory Grant program, Co-PI
2024-2025	$20,000, “A semantic mapper for application integration (SeMAI)”, UMBC, Technology Catalyst Fund, Co-PI
2023-2024	$45,000, “Pathways to PostBac IS Online Computing Certifications”, Northeastern University, Co-PI
2021-2026	$68,000,000 (UMBC Portion: $20,000,000), "AI and Autonomy for Multi-Agent Systems", Army Research Laboratory, Senior Personnel
2021-2022	$250,000 (UMBC Portion: $149,999), "Mitigate: An Adaptive Network Data Anonymization Tool Using Condensation-Based Differential Privacy", Department of Energy STTR grant, Co-PI (PI of UMBC subaward)
2021-2022	$115,000, "Technology Assessment for Data Quality Toolkit", Tedco-Maryland Innovation Initiative Award, PI
2020	$40,000, “RDF Datastore Capabilities and Services: Data Warehouse versus Federated System Comparison”, US Naval Academy, subcontract, PI
2019-2020	$114,804, “MITIGATE: A System for Privacy Management Using Condensation-Based Differential Privacy”, Tedco-Maryland Innovation Initiative Award, PI
2018-2021	$329,563 (UMBC Portion: $229,345), “Secure and flexible Information Sharing in Coalition Environments”, Office of Naval Research, PI

2019-2023	$597,993, "Graduate Assistance in Areas of National Need (GAANN) Program", US Department of Education, Co-PI
2018-2019	$99,917, "Improving Federated Search and Semantic Reasoning for Rya", US Naval Academy, subcontract, PI
2016-2019	$1,000,000, "Accelerated Cognitive Cybersecurity Laboratory", IBM, gift, co-PI of one of the two projects supported by the gift
2016-2018	$147,772, "Efficient and scalable RDF store with support for federated search and reasoning", US Naval Academy, subcontract, PI
2016	$43,000, "Anonymization of Network Trace Data through Differential Privacy", FFRDC-NIST-MITRE, Co-PI
2016	$68,152, "FFRDC Task Order 1: Medical Device Cyber Security Assessment", FFRDC-NIST-MITRE, Co-PI
2016	$5542, "Enhancing Recruitment and Training of IS and HCC PhD Students", UMBC (Dean's Strategic Planning Implementation Grant), PI
2015	$25,000, "Anonymization of Network Trace Data", MITRE, Co-PI
2015	$39,370, "Efficient Query Algorithms and Database Scalability over Single Node Rya", US Naval Academy, subcontract, PI
2007-2012	$449,654, "A privacy-preserving framework for distance-based mining", National Science Foundation Regular Grant, IIS-0713345, PI
2007-2008	$61,734, "Using Context and Semantic Networks to support Software Engineers", National Science Foundation Small Grants for Exploratory Research, CCF-0738898, Co-PI
2006-2007	$42,168, "Spatiotemporal Data Explorer: An integrated spatiotemporal data warehouse for visualization driven knowledge discovery in water resources management", USGS National Biological Information Infrastructure and National Park Service, Co-PI
2005	$4,000, UMBC summer faculty fellowship, PI

Ph.D. Students

Nujood Alodadi,	May 2022	chair of committee
Varun Mandalapu,	September 2021	chair of committee
Samson Oni,	June 2021	chair of committee
Pooja Parameshwarappa	May 2020,	chair of committee
Fan Yang	July 2019,	chair of committee
Cailing Dong,	June 2017,	chair of committee
Shaikha Al-Duaij	April 2017,	chair of committee
Tamas Gal,	December 2011,	chair of committee
Madhushri Banerjee,	May 2011,	chair of committee
Shibnath Mukherjee,	May 2007,	co-chair of committee
Mohammad Ishtiaque Rahman,	May 2025 (expected)	chair of committee
Amir Mojtahedi	May 2025 (expected)	chair of committee
Hyunsook Kweon		chair of committee
Ohud Saud		chair of committee
Guy-Alain Aurelien		chair of committee
Dodavah Mowoh		chair of committee
Muhammad Shehrose Raza		chair of committee
Indrajeet Ghosh	August 2024 (expected)	committee member
Debvrat Varshney	April 2024,	committee member
Pretom Roy Ovi	April 2024,	committee member
Naima Khan	November 2023	committee member
Redwan Walid	August 2023,	committee member
Dae-young Kim	July 2023,	committee member
Avijoy Chakma	July 2023,	committee member
Anamika Paul Rupa	April 2023,	committee member
Ronak Razavisousan	September 2022,	committee member

Sreenivasan Ramamurthy	July 2022,	committee member
Rashidul Islam	June 2022,	committee member
Xin Wang	May 2022,	committee member
Manesh Pillai	April 2022,	committee member
Lavanya Elluri	November 2021	committee member
Abdullah Aldaeej	October 2021	committee member
Arpita Roy	July 2021	committee member
Faisal Quader,	November 2020,	committee member
Mohammad Alodadi	October 2020,	committee member
Onimi Jademi,	April 2020,	committee member
Amrita Anam,	April 2019,	committee member
Foteini Cheirdari	February 2019,	committee member
Md Abdullah Al Hafiz Khan	February 2019,	committee member
Yan Li	November 2018,	committee member
Anupama Dash	December 2017,	committee member
Ibrahim Toure	June 2017,	committee member
John W. Hebeler	June 2017,	committee member
Yin Kang	April 2017,	committee member
Yuepu Guo	September 2016,	committee member
Ali Azari	December 2015,	committee member
Josephine Namayanja	April 2015,	committee member
Lei Shi	April 2014,	committee member
Yanan Sun	April 2014,	committee member
Xin Li,	August 2011,	committee member
Madhu Ahluwalia,	May 2011	committee member
Michael McGuire,	April 2010	committee member
Pimwadee Chaovali,	May 2009,	committee member
Navin Kumar,	August 2006,	committee member
Doa Yakut Kilic		committee member
Tao Ding		committee member

Master's Students

Saul Ricardo Medrano Castillo	July 2016	Chair
Ajinkya Gaurkar,	November 2018,	Co-Chair
Dongjin Kim,	December 2010,	Chair
Md Fourkanul Islam	April 2024,	Committee member
Prachiti Naik,	July 2020,	Committee member
Ketki Sane,	April 2020,	Committee member
Deepak Prakash	November 2019,	Committee member
Fatimah Alqurmti,	July 2019,	Committee member
Priyanka Ranade,	April 2019,	Committee member
Swati Verma,	April 2019,	Committee member
Ankur Nagar,	April 2018,	Committee member
Vivek Parganiha	April 2018,	Committee member
Hamad Alsaleh,	November 2017	Committee member
Netsanet Tefera	July 2017,	Committee member
Saiadithya Cumbulam Thangaraj,	April 2017,	Committee member
Bipen Basnyat,	April 2017,	Committee member
Suraksha Shukla,	April 2017,	Committee member
Vishak Iyer,	February 2017,	Committee member
Vasundhara Misal	October 2016,	Committee member
Prathamesh Walkikar	December 2016,	Committee member
Sankalp N. Sawant	November 2015,	Committee member
Jimish Kadakia	November 2015,	Committee member

Mayada Alrige	May 2013	Committee member
Rashmi N Ramesh	April 2011	Committee member
Ruman R Tambe	April 2011	Committee member
Sejal A Shah	April 2011	Committee member
Peng He,	April 2010,	committee member
Eric Tao,	April 2010,	committee member
Shawn Johnson,	May 2009,	committee member

Publications

Peer-Reviewed Works
Articles

1. *Antonios Xenakis*, Zhiyuan Chen, George Karabatis, "A Cluster-based Approach for Distributed Anonymization of Vertically Partitioned Data." International Journal of Web Engineering and Technology, accepted, 2024. (Italic is student)
2. *Antonios Xenakis, Sabrina Mamtaz Nourin*, Zhiyuan Chen, George Karabatis, Ahmed Aleroud, and *Jhancy Amarsingh*. "A Self-Adaptive and Secure Approach to Share Network Trace Data." Digital Threats: Research and Practice, 4(4), 1-20, 2023.
3. *Fan Yang*, Adina Crainiceanu, Zhiyuan Chen, Don Needham, Cluster-Based Join for Federated SPAQL Queries, *IEEE Transactions on Knowledge and Data Engineering*, 35(4), 3525 - 3539, 2023.
4. *Fan Yang*, **Zhiyuan Chen**, Aryya Gangopadhyay, Using Randomness to Improve Robustness of Tree-based Models Against Evasion Attacks, *IEEE Transactions on Knowledge and Data Engineering*, 34(2), 969-982, 2022.
5. *Ohud Saud Alqahtani*, **Zhiyuan Chen**, Statistical Analysis of Relationships of U.S. Organizations' Size, Popularity, Age, and Location to Frequency of Data Breaches, Journal of Data Protection and Privacy, 4(4), 404-423, 2021.
6. *Pooja Parameshwarappa*, **Zhiyuan Chen**, Gunes Koru, Anonymization of Daily Activity Data by Using l-diversity Privacy Model, ACM Transactions on Management Information Systems,12(3), 1-21, 2021.
7. Ahmed AlEroud, *Fan Yang, Sai Chaithanya Pallaprolu*, **Zhiyuan Chen**, and George Karabatis, Anonymization of Network Trace Data through Condensation-based Differential Privacy, *ACM Digital Threats: Research and Practice,* 2(4), 1-23, 2021.
8. *Pooja Parameshwarappa*, **Zhiyuan Chen**, Gunes Koru, An Effective and Computationally Efficient Approach for Anonymizing Large-Scale Physical Activity Data: Multi-level Clustering Based Anonymization, *International Journal of Information Security and Privacy*, Vol. 14(3), pages 72-94, July 2020.
9. *Samson Oni*, **Zhiyuan Chen**, Susan Hoban, Onimi Jademi, A Comparative Study of Data Cleaning Tools, International Journal of Data Warehousing and Mining, 15(4), 48-65, 2019.
10. *Madhu Ahluwalia*, Aryya Gangopadhyay, **Zhiyuan Chen**, and Yelena Yesha. "Target-Based, Privacy Preserving, and Incremental Association Rule Mining, IEEE Transactions on Services Computing, 10(4), 633-645, 2017.
11. *Shaikha Al-Duaij*, **Zhiyuan Chen**, and Aryya Gangopadhyay. Using Crowd Sourcing to Analyze Consumers' Response to Privacy Policies of Online Social Network and Financial Institutions at Micro Level, *International Journal of Information Security and Privacy, 10(2), 41-63, 2016*.
12. *Tamas S, Gal*, Thomas C. Tucker, Aryya Gangopadhyay, and **Zhiyuan Chen**. A Data Recipient Centered De-identification Method to Retain Statistical Attributes. Journal of biomedical informatics, August 2014, 50: 32-45.
13. *Madhushri Banerjee*, **Zhiyuan Chen**, and Aryya Gangopadhyay. "A generic and distributed privacy preserving classification method with a worst-case privacy guarantee." Distributed and Parallel Databases, 32(1): 5-35, 2014.
14. *Liang Tang*, Tao Li, Yexi Jiang, and **Zhiyuan Chen**. Dynamic Query Forms for Database Queries. *IEEE Transactions on Knowledge and Data Engineering,* 26(9): 2166 - 2178, 2014

15. **Zhiyuan Chen**, Tao Li, and Yanan Sun, A Learning Approach to SQL Query Results Ranking Using Skyline and Users' Current Navigational Behavior. *IEEE Transactions on Knowledge and Data Engineering*, 2013, 25(12), 2683 - 2693.
16. *Dongjin Kim*, **Zhiyuan Chen,** and Aryya Gangopadhyay, Optimizing Privacy-Accuracy Tradeoff for Privacy Preserving Distance-Based Classification, International Journal of Information Security and Privacy, 2012. 6(2): 16-33.
17. *Pimwadee Chaovalit*, Aryya Gangopadhyay, George Karabatis, and **Zhiyuan Chen**, Discrete Wavelet Transform-based Time Series Analysis and Mining. *ACM Computing Surveys, 2011. 43(2): p. 1-37*.
18. *Yu Fu*, **Zhiyuan Chen**, A. Gunes Koru, and Aryya Gangopadhyay. A Privacy Protection Technique for Publishing Data Mining Models and Research *Data*, *ACM Transactions on Management Information Systems,* 2010.*1(1): 1-20.*
19. *Shibnath Mukherjee*, Aryya Gangopadhyay, and **Zhiyuan Chen**. A Partial Optimization Approach for Privacy Preserving Frequent Itemset Mining. *International Journal of Computational Models and Algorithms in Medicin*e, 2010. 1(1): p. 19-33. IGI Global, Hershey, PA.
20. *Madhu V. Ahluwalia*, Aryya Gangopadhyay, and **Zhiyuan Chen**. Preserving Privacy in Mining Quantitative Association rules, *International Journal of Information Security and Privacy*, 2009. 3(4): p. 1-17. IGI Global, Hershey, PA.
21. George Karabatis, **Zhiyuan Chen**, Vandana Janeja, Tania Lobo, Monish Advani, Mikael Lindvall, and Raimund L. Feldmann, Using Semantic Networks and Context in Search for Relevant Software Engineering Artifacts, Journal on Data Semantics, 2009, 14: p. 74-104. Springer, New York*, NY*, 2009.
22. *Tamas Gal*, **Zhiyuan Chen**, and Aryya Gangopadhyay, A Privacy Protection Model for Patient Data with Multiple Sensitive Attributes, *International Journal of Information Security and Privacy,* IGI Global, Hershey, PA, vol. 2 (3), pp. 28-44, 2008.
23. *Navin Kumar*, Aryya Gangopadhyay, Sanjay Bapna, George Karabatis, and **Zhiyuan Chen**, Measuring interestingness of discovered skewed patterns in data cubes*. Decision Support Systems*, Elsevier, Cambridge, MA, 2008. **46**(1): p. 429-439.
24. *Shibnath Mukherjee*, Madhushri Banerjee, **Zhiyuan Chen**, and Aryya Gangopadhyay, A Privacy Preserving Technique for Distance-based Classification with Worst Case Privacy Guarantees*. Data & Knowledge Engineering*, Elsevier, Cambridge, MA, 2008. **66**(2): p. 264-288.
25. *Shibnath Mukherjee*, **Zhiyuan Chen**, and Aryya Gangopadhyay, A Fuzzy Programming Approach for Data Reduction and Privacy in Distance Based Mining*. International Journal of Information and Computer Security*, Inderscience Publishers, Geneva, Switzerland, 2008. **2**(1): p. 27-47.
26. **Zhiyuan Chen**, Aryya Gangopadhyay, George Karabatis, Steve Holden, Michael McGuire, and Cambridge Elsevier, MA., Semantic Integration of Government Data for Water Quality Management*. Journal of Government Information Quarterly*, Elsevier, Cambridge, MA, 2007. **24**(4): p. 716-735.
27. **Zhiyuan Chen**, Aryya Gangopadhyay, George Karabatis, Michael McGuire, and Claire Welty, Semantic Integration and Knowledge Discovery for Environmental Research*. Journal of Database Management*, Elsevier, Cambridge, MA, 2007. **18**(1): p. 43-68.
28. **Zhiyuan Chen**, Johannes Gehrke, Flip Korn, Nick Koudas, Jayavel Shanmugasundaram, and Divesh Srivastava, Index structures for matching XML twigs using relational query processors*. Data & Knowledge Engineering*, Elsevier, Cambridge, MA, 2007. **60**(2): p. 283-302.
29. *Navin Kumar*, Aryya Gangopadhyay, George Karabatis, Sanjay Bapna, and **Zhiyuan Chen**, Navigation Rules for Exploring Large Multidimensional Data Cubes*. International Journal of Data Warehousing and Mining*, IGI Global, Hershey, PA, 2006. **2**(4): p. 27-48.
30. *Shibnath Mukherjee*, **Zhiyuan Chen**, and Aryya Gangopadhyay, A Privacy Preserving Technique for Euclidean Distance-Based Mining Algorithms Using Fourier-Related Transforms*.The VLDB Journal*, Springer Berlin / Heidelberg, 2006. **15**(4): p. 293–315.
31. Surajit Chaudhuri, **Zhiyuan Chen**, Kyuseok Shim, and Yuqing Wu, Storing XML (with XSD) in SQL Databases: Interplay of Logical and Physical Designs. *IEEE Transactions on Knowledge and Data Engineering*, IEEE Computer Society Press, Washington, DC. 2005. **17**(12): p. 1595-1609.
32. **Zhiyuan Chen**, Flip Korn, Nick Koudas, and S. Muthukrishnan, Generalized Substring Selectivity Estimation*. Journal of Computer and System Sciences*, Elsevier, Cambridge, MA, 2003. **66**(1): p. 98-132.

Conference Proceedings

1. *Sai Rapelli,* Zhiyuan Chen, and Wei Lu, A LSTM with Dual-stage Attention Method to Predict Amine Emissions for Carbon Dioxide Capture and Storage, Workshop on Big Data Analytics for Sustainability (BDA4S) at IEEE Big Data Conference (IEEE BigData 2024), Washington DC, USA, December 15-18, 2024.
2. *Dodavah Mowoh* and Zhiyuan Chen, A Beam-Search Based Method to Select Classification and Imputation Methods for Fair and Accurate Data Analysis, Fourth International Workshop on Data science for equality, inclusion and well-being challenges (DS4EIW 2024) at IEEE Big Data Conference (IEEE BigData 2024), Washington DC, USA, December 15-18, 2024.
3. *Dae-young Kim, Nujood Alodadi*, Zhiyuan Chen, Karuna P. Joshi, Adina Crainiceanu, and Don Needham. MATS: A Multi-aspect and Adaptive Trust-based Situation-aware Access Control Framework for Federated Data-as-a-Service Systems. IEEE International Conference on Service Computing (SCC), Barcelona, Spain, 2022 (regular paper, acceptance rate 32.8%).
4. *Laylon Mokry, Paul Slife, Patrick Bishop, Jose Quiroz, Cooper Guzzi*, **Zhiyuan Chen**, Adina and Crainiceanu and Don Needham, Efficient and Privacy-Preserving Collaborative Intrusion Detection Using Additive Secret Sharing and Differential Privacy, Workshop on Big Data for Cybersecurity (BigCyber) at IEEE Big Data Conference (IEEE BigData 2021), USA, December 15-18, 2021.
5. *Varun Mandalapu*, Lujie Chen, **Zhiyuan Chen** and Jiaqi Gong, Student-centric Model of Login Patterns: A Case Study with Learning Management Systems, Fourteenth International Conference on Educational Data Mining, Paris, France, June 29-July 2, 2021. (acceptance rate 22%)
6. Payton Schubel, Zhiyuan Chen, Adina Crainiceanu, Karuna Joshi, and Don Needham, A Semantic Framework for Secure and Efficient Contact Tracing of Infectious Diseases. IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2021. (acceptance rate 20%)
7. *Masnoon Nafees,* Shimei Pan, Zhiyuan Chen and James Foulds, Impostor GAN: Toward Modeling Social Media User Impersonation with Generative Adversarial Networks. 2nd International Workshop on Deceptive AI, 2021.
8. *Zhang, Wenbin, Mingli Zhang, Ji Zhang, Zhen Liu,* **Zhiyuan Chen**, Jianwu Wang, Edward Raff, and Enza Messina. Flexible and Adaptive Fairness-aware Learning in Non-stationary Data Streams. In 2020 IEEE 32nd International Conference on Tools with Artificial Intelligence (ICTAI), pp. 399-406. IEEE, 2020.
9. *Samson Oni,* Kajal Pansare, Sukrit Singh Arneja, **Zhiyuan Chen**, Adina Crainiceanu, and Don Needham, RDFINT: A Benchmark for Comparing Data Warehouse with Virtual Integration Approaches for Integration of RDF Data, in Fourth IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2020) at IEEE Big Data Conference (IEEE BigData 2020), USA, December 10-14, 2020.
10. *Samson Oni*, **Zhiyuan Chen**, Adina Crainiceanu, Karuna Joshi, Don Needham, A Framework for Situation-Aware Access Control in Federated Data-as-a-Service Systems Based on Query Rewriting, IEEE International Conference on Service Computing (SCC), 2020 (regular paper).
11. *Fan Yang*, Adina Crainiceanu, **Zhiyuan Chen**, Don Needham, Cluster-Based Join for Geographically Distributed Big RDF Data, IEEE BigData Congress, accepted, 2019. (Acceptance rate 23%).
12. *Samson Oni*, **Zhiyuan Chen**, Adina Crainiceanu, Karuna Joshi, Don Needham, Situation-Aware Access Control in Federated Data-as-a-Service for Maritime Search and Rescue, IEEE International Conference on Service Computing (SCC), accepted, 2019 (work-in-progress).
13. *Fan Yang*, **Zhiyuan Chen**, Aryya Gangopadhyay. Using Randomness to Improve Robustness of Tree-based Models Against Evasion Attacks, 5th ACM International Workshop on Security and Privacy Analytics 2019, pp 25-35, Dallas, Texas, March 27, 2019.
14. *Pooja Parameshwarappa*, **Zhiyuan Chen**, Aryya Gangopadhyay, Analyzing Attack Strategies Against Rule Based Intrusion Detection Systems, International Workshop on Analytics for Security in Cyber Physical Systems, 1-4, Varanasi, India, January 4, 2018.
15. *Ohud Alqahtani*, **Zhiyuan Chen**, Qiong Huang, Karthik Gottipati, Is Bigger Safer? Analyzing Factors Related to Data Breaches Using Publicly Available Information, in Fourth International Conference on Information Systems Security and Privacy (ICISSP), pp 373-378, January 22-24, Funchai, Portugal, 2018.

16. *Ashwinkumar Ganesan, Pooja Parameshwarappa, Akshay Peshave*, **Zhiyuan Chen**, Tim Oates, Extending Signature-based Intrusion Detection Systems With Bayesian Abductive Reasoning. DYnamic and Novel Advances in Machine Learning and Intelligent Cyber Security (DYNAMICS) Workshop, December 3-7, San Juan, Puerto Rico, USA, 2018.
17. *Pei Guo*, Jianwu Wang, **Zhiyuan Chen**, A Comparison of Big Data Application Programming Approaches: A Travel Companion Case Study, in First IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2017) at IEEE Big Data Conference (IEEE BigData 2017), pp 2869-2878, Boston, USA, December 11-14, 2017.
18. *Ahmed Aleroud*, **Zhiyuan Chen**, George Karabatis, Network Traffic Anonymization Using a Prefix- Preserving Condensation-based Technique, in OTM Confederated International Conferences On the Move to Meaningful Internet Systems, 934-942, 24-26 Oct 2016, Rhodes, Greece.
19. *Castillo, Saul Ricardo Medrano*, and Zhiyuan Chen. "Using Transfer Learning to Identify Privacy Leaks in Tweets." In Collaboration and Internet Computing (CIC), 2016 IEEE 2nd International Conference on, pp. 506-513. IEEE, 2016.
20. *Ding, Tao, Arpita Roy*, **Zhiyuan Chen**, Qian Zhu, and Shimei Pan, Analyzing and retrieving illicit drug-related posts from social media. In Bioinformatics and Biomedicine (BIBM), 2016 IEEE International Conference on, pp. 1555-1560. IEEE, 2016.
21. *Li Xue*, Yun Xiong, yangyong Zhu, Jianfeng Wu, **Zhiyuan Chen**. Stock Trend Prediction By Classifying Aggregative Web Topic Opinion, in *Proc. of The 17th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, Gold Coast, Australia., April 14-17 , 2013: 173-184. (Acceptance rate: 11.3%)
22. *Xue Bai*, Yun Xiong, Yangyong Zhu, Qi Liu, **Zhiyuan Chen**: Co-anomaly Event Detection in Multiple Temperature Series. Knowledge Science, Engineering and Management - 6th International Conference, KSEM 2013, Dalian, China, August 10-12, 2013: 1-14. Lecture Notes in Computer Science Volume 8041, 2013 (best paper award).
23. *Madhu Ahluwalia*, Aryya Gangopadhyay, **Zhiyuan Chen**, and Yelena Yesha, Target-Based Privacy Preserving Association Rule Mining, in *Proc. of ACM Symposium On Applied Computing (SAC)*, Taiwan, pp. 960-965, 2011.
24. *Madhushri Banerjee*, **Zhiyuan Chen**, and Aryya Gangopadhyay. A Utility-Aware and Holistic Approach for Privacy Preserving Distributed Mining with Worst Case Privacy Guarantee, *in Proc. of Secure Knoweledge Management Workshop (SKM 2010)*, New Brunswick, NJ, October 21-22, 2010.
25. *Somnath Chakrabarti*, **Zhiyuan Chen**, Aryya Gangopadhyay, and Shibnath Mukherjee. Privacy Preserving Linear Discriminant Analysis from Perturbed Data, *in Proc. of ACM Symposium on Applied Computing*, Sierre, Switzerland, March 22 - March 26, 2010.
26. *Yu Fu*, **Zhiyuan Chen**, A. Gunes Koru, and Aryya Gangopadhyay. A Privacy Protection Technique for Publishing Data Mining Models and Supporting Data. *The Nineteenth Annual Workshop on Information Technologies and Systems (WITS'09)*, Phoenix, Arizona, USA, 14-15 December 2009.
27. *Yu Fu*, A. Gunes Koru, **Zhiyuan Chen**, and Khaled El Emam, A Tree-Based Approach to Preserve Privacy of Software Engineering Data and Predictive Models. *The International Conference on Predictor Models in Software Engineering*, Vancouver, Canada, May 18-19, 2009.
28. Mikael Lindvall, Raimund L. Feldmann, George Karabatis, **Zhiyuan Chen**, and Vandana P. Janeja, Searching for Relevant Software Change Artifacts using Semantic Networks, *in Proc. of ACM Symposium on Applied Computing*, pp. 496-500, Honolulu, Hawaii, USA, March 9-12, 2009.
29. *Shibnath Mukherjee*, **Zhiyuan Chen**, Aryya Gangopadhyay, and Stephen Russell, A Secure Face Recognition System for Mobile-devices without The Need of Decryption. *Workshop on Secure Knowledge Management (SKM 2008)*, Dallas, Texas, November 3-4, 2008.
30. Shenghuo Zhu, Tao Li, **Zhiyuan Chen**, Dingding Wang, and Yihong Gong, Dynamic Active Probing of Helpdesk Databases. *International Conference on Very Large Data Bases*, Auckland, New Zealand, August 23 - August 28, 2008: p. 748-760 (Acceptance rate: 16.7%).

31. *Madhu Ahluwalia*, **Zhiyuan Chen**, Aryya Gangopadhyay, and Zhiling Guo, Preserving Privacy in Supply Chain Management: a Challenge for Next Generation Data Mining. *NSF Symposium on next generation data mining*, October 10 - October 12, 2007, Baltimore, MD.
32. **Zhiyuan Chen** and Tao Li, Addressing Diverse User Preferences in SQL-Query-Result Navigation. *ACM SIGMOD Conference*, Beijing, China, June 12-14, 2007: p. 641-652(Acceptance rate: 14%).
33. Dongsong Zhang, George Karabatis, **Zhiyuan Chen**, Boonlit Adipat, Liwei Dai, Tony Zhang, and Yu Wang, Personalization and Visualization on Handheld Devices. *ACM Symposium on Applied Computing*, Dijon, France, April 23-27, 2006: p. 1008-1012.
34. **Zhiyuan Chen**, Johannes Gehrke, Flip Korn, Nick Koudas, Jayavel Shanmugasundaram, and Divesh Srivastava, Index Structures for Matching XML Twigs Using Relational Query Processors. *International Workshop on XML Schema and Data Management (XSDM'05)*, pp. 1273, April 5-8, 2005, Tokyo, Japan.
35. Surajit Chaudhuri, **Zhiyuan Chen**, Kyuseok Shim, and Yuqing Wu, Storing XML (with XSD) in SQL Databases: Interplay of Logical and Physical Designs, *in Proc. of International Conference on Data Engineering (ICDE).* pp. 842, March 30 - April 2, 2004, Boston, USA. (Acceptance rate: 20%).
36. **Zhiyuan Chen**, Johannes Gehrke, and Flip Korn, Query Optimization in Compressed Database Systems. *ACM SIGMOD International Conference on Management of Data*, Santa Barbara, California, May 21-24, 2001: p. 271-282(Acceptance rate: 15%).
37. **Zhiyuan Chen**, H.V. Jagadish, Flip Korn, Nick Koudas, S.Muthukrishnan, Raymond Ng, and Divesh Srivastava, Counting Twig Matches in A Tree. *International Conference on Data Engineering (ICDE)*, April 2-6, 2001, Heidelberg, Germany: p. 595-604(Acceptance rate: 17%).
38. **Zhiyuan Chen**, Flip Korn, Nick Koudas, and S.Muthukrishnan, Selectivity Estimation for Boolean Queries. *ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS)*, May 15-17, 2000, Dallas, Texas, USA: p. 216-225(Acceptance rate: 22%).
39. **Zhiyuan Chen** and Praveen Seshadri, An Algebraic Compression Framework for Query Results. *International Conference on Data Engineering (ICDE)*, 28 February - 3 March, 2000, San Diego, California, USA: p. 177-188(Acceptance rate: 14%).
40. Philippe Bonnet, Kyle Buza, **Zhiyuan Chen**, Victor Cheng, Randolph Chung, Takako~M. Hickey, Ryan Kennedy, Daniel Mahashin, Tobias Mayr, Ivan Oprencak, Praveen Seshadri, and Hubert Siu., The Cornell Jaguar System: Adding Mobility to Predator, *in Proc. of ACM SIGMOD International Conference on Management of Data*, Philadelphia, Pennsylvania, USA, pp. 580-581, June 1-3, 1999.

Non-Peer-Reviewed Works
Chapters in Books

41. Tamas Gal, **Zhiyuan Chen**, and Aryya Gangopadhyay, A Privacy Protection Model for Patient Data with Multiple Sensitive Attributes, *in Pervasive Information Security and Privacy Developments: Trends and Advancements, Editor: Hamid Nemati, pages 44-60.* 2010, IGI Global: Hershey, PA.

Conference Abstract

42. Pooja Parameshwarappa, **Zhiyuan Chen**, Gunes Koru, Effective and Efficient Anonymization of Health-Related Physical Activity Data, in 28th Summer Institute in Nursing Informatics, July 18-July 20, 2018.
43. Joseph Chen, Aryya Gangopadhyay, Madhushri Banerjee, **Zhiyuan Chen**, Yelena Yesha, Jigar Patel, and Eliot Siegel. A Novel Algorithm to De-Identify Pixel Data from CT Scans of the Head and Face to Protect against Patient Identification Using a 3D Surface Reconstruction. *in Radiological Society of North America 97th Scientific Assembly and Annual Meeting. 2011. Chicago.*

Works Submitted or In Preparation
Articles (Peer Reviewed)

1. Shaikha Al-Duaij, Zhiyuan Chen, and Aryya Gangopadhyay, A Keyword-matching Based Information Extraction Method for Privacy Policies (under review).

2. Samson Oni, Zhiyuan Chen, Adina Crainiceanu, Karuna Joshi, Don Needham, Semantic Discrepancy Detection in Structured and Unstructured Data Sources (under review).

Presentations

Conference / Poster Presentations (Juried / Refereed)

- Fan Yang, **Zhiyuan Chen**, Aryya Gangopadhyay. Using Randomness to Improve Robustness of Tree-based Models Against Evasion Attacks, 5th ACM International Workshop on Security and Privacy Analytics 2019, Dallas, Texas, March 27, 2019.
- Pooja Parameshwarappa, **Zhiyuan Chen**, Aryya Gangopadhyay, Analyzing Attack Strategies Against Rule Based Intrusion Detection Systems, International Workshop on Analytics for Security in Cyber Physical Systems, 1-4, Varanasi, India, January 4, 2018.
- Ohud Alqahtani, **Zhiyuan Chen**, Qiong Huang, Karthik Gottipati, Is Bigger Safer? Analyzing Factors Related to Data Breaches Using Publicly Available Information, in Fourth International Conference on Information Systems Security and Privacy (ICISSP), pp 373-378, January 22-24, Funchai, Portugal, 2018.
- Ashwinkumar Ganesan, Pooja Parameshwarappa, Akshay Peshave, **Zhiyuan Chen**, Tim Oates, Extending Signature-based Intrusion Detection Systems With Bayesian Abductive Reasoning. DYnamic and Novel Advances in Machine Learning and Intelligent Cyber Security (DYNAMICS) Workshop, December 3-7, San Juan, Puerto Rico, USA, 2018.
- Pooja Parameshwarappa, Zhiyuan Chen, Günes Koru. "A Multi-level Clustering Approach for Anonymizing Physical Activity Data". In the 8th Annual Conference on Health IT and Analytics (CHITA), Washington DC, November 3-4, 2017.
- Castillo, Saul Ricardo Medrano, and Zhiyuan Chen. "Using Transfer Learning to Identify Privacy Leaks in Tweets." In Collaboration and Internet Computing (CIC), 2016 IEEE 2nd International Conference on, pp. 506-513. IEEE, 2016.
- Li Xue, Yun Xiong, yangyong Zhu, Jianfeng Wu, **Zhiyuan Chen**. Stock Trend Prediction By Classifying Aggregative Web Topic Opinion, in *Proc. of The 17th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, Gold Coast, Australia., 2013.
- Madhushri Banerjee, **Zhiyuan Chen**, and Aryya Gangopadhyay. A Utility-Aware and Holistic Approach for Privacy Preserving Distributed Mining with Worst Case Privacy Guarantee, *in Proc. of Secure Knoweledge Management Workshop (SKM 2010)*, New Brunswick, NJ, October 21-22, 2010. (Presenter: Madhushri Banerjee)
- Yu Fu, A. Gunes Koru, **Zhiyuan Chen**, and Khaled El Emam, A Tree-Based Approach to Preserve Privacy of Software Engineering Data and Predictive Models. *The International Conference on Predictor Models in Software Engineering*, Vancouver, Canada, May 18-19, 2009. (Presenter: Yu Fu)
- Mikael Lindvall, Raimund L. Feldmann, George Karabatis, **Zhiyuan Chen**, and Vandana P. Janeja, Searching for Relevant Software Change Artifacts using Semantic Networks. *ACM Symposium on Applied Computing*, Honolulu, Hawaii, USA, March 9-12, 2009. (Presenter: George Karabatis)
- Shenghuo Zhu, Tao Li, **Zhiyuan Chen**, Dingding Wang, and Yihong Gong, Dynamic Active Probing of Helpdesk Databases. *International Conference on Very Large Data Bases*, Auckland, New Zealand, August 23 - August 28, 2008: p. 748-760. (Presenter: Zhiyuan Chen).
- Shibnath Mukherjee, **Zhiyuan Chen**, Aryya Gangopadhyay, and Stephen Russell, A Secure Face Recognition System for Mobile-devices without The Need of Decryption. *Workshop on Secure Knowledge Management (SKM 2008)*, Dallas, Texas, November 3-4, 2008 (Presenter: Zhiyuan Chen).
- **Zhiyuan Chen** and Tao Li, Addressing Diverse User Preferences in SQL-Query-Result Navigation. *ACM SIGMOD Conference*, Beijing, China, June 12-14, 2007: p. 641-652 (Presenter: Zhiyuan Chen).

- Dongsong Zhang, George Karabatis, **Zhiyuan Chen**, Boonlit Adipat, Liwei Dai, Tony Zhang, Yu Wang. Personalization and Visualization on Handheld Devices. *The 21st Annual ACM Symposium on Applied Computing*, 1008-1012, Dijon, France, April 23-27, 2006 (Presenter: Liwei Dai).
- **Zhiyuan Chen**, Johannes Gehrke, Flip Korn, Nick Koudas, Jayavel Shanmugasundaram, and Divesh Srivastava, Index Structures for Matching XML Twigs Using Relational Query Processors. *International Workshop on XML Schema and Data Management* (XSDM'05), pp. 1273, April 5-8, 2005, Tokyo, Japan (Presenter: Divesh Srivastava).

Conference / Poster Presentations (Non-Juried / Refereed)

- Joseph Chen, Aryya Gangopadhyay, Madhushri Banerjee, **Zhiyuan Chen**, Yelena Yesha, Jigar Patel, and Eliot Siegel. A Novel Algorithm to De-Identify Pixel Data from CT Scans of the Head and Face to Protect against Patient Identification Using a 3D Surface Reconstruction. *in Radiological Society of North America 97th Scientific Assembly and Annual Meeting. 2011. Chicago.*

Other Professional Presentations
Lectures (Non-Juried)

- **Zhiyuan Chen.** Big Data Management and Privacy. July 10- July 13, 2014. Fudan University, China.
- **Zhiyuan Chen.** Querying Big Data and Data Privacy. September 1 – September 4, 2015. Fudan University, China.

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

University

- 2018-2023, member, faculty affairs committee
- 2018-2019, member, college award committee
- 2018-2019, member, IS department chair search committee
- 2017, member, dean's search committee
- 2015-2017, member, organization and university operations committee
- 2013-2015, member, faculty senate
- 2014, member, dean search committee
- 2013-2014, member, research council
- 2013-2014, co-chair, faculty grievance council
- 2012-2013, member, faculty grievance council
- 2010-2012, member, graduate council
- 2010-2012, member, faculty affairs committee
- 2008-2010, member, athletics/recreation policy committee

Department

- 2023, 2021, 2020, 2019, chair, tenure track faculty search committee
- 2019, 2021, member, lecturer and PoP search committee
- 2021, member, vision committee
- 2019-present, chair, adjunct committee
- 2019-present, member, graduate committee for IS on campus programs
- August 2019-present, associate chair for academic affairs
- 2012-August 2019, graduate program director for IS on campus programs
- 2012-May 2019, chair, graduate committee for IS on campus programs
- 2018-2019, member, graduate committee for online MS program
- 2016-2017, member, faculty search committee
- 2012-2016, member, research committee
- 2011-2012, member, graduate committee
- 2011-2012, chair, research committee

- 2011-2012, member, recruit committee
- 2011, member, search committee for IS department chair
- 2010-2011, chair, research committee
- 2010-2011, member, search committee
- 2010-2011, member, graduate committee
- 2009-2010, member, research committee
- 2009-2010, member, graduate committee
- 2008-2009, member, research committee
- 2008-2009, member, graduate committee
- 2007-2008, member, graduate committee
- 2007-2008, member, research committee
- 2006 – 2007, member, recruitment committee
- 2006-2007, member, graduate committee
- 2005 – 2006, member, research committee

Profession

- International Journal of Data Mining, Modelling and Management, managing editor
- International Journal of Knowledge-Based Organizations (IJKBO), managing editor
- Since 2022, Decision Support Systems, associate editor
- International Journal of Advanced Computer Research(IJACR), editorial board member
- International Journal of Embedded Software and Open Source Systems (IJESOS), editorial board member
- 2019-2021 International Journal of Information Security and Privacy (IJISP), editorial board member
- 2020, Big Data Research (Journal) Special Issue, Editor
- 2020, IEEE Bigdata Conference, Workshop co-chair
- 2017-2022, 2024 The IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD 2017, 2018, 2019,2020, 2021, 2022), chair
- Manuscript Reviewer for ACM Transactions of Database Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Big Data, the VLDB Journal, Data and Knowledge Engineering, Journal of Biomedical Informatics, PLOS One, Journal of Database Management, Information Science, IEEE Intelligent Systems, the Journal of Computer and System Sciences, ACM Multimedia Systems, SpringerPlus, Information Systems, Information and Software Technology, Knowledge and Information Systems, IBM Systems Journal.
- 2019, CIKM, program committee member
- 2021-2024, SIAM International Conference on Data Mining, program committee member
- 2019-2024, PAKDD, program committee member
- 2015-2024, IEEE International Conference on Big Data, Program Committee Member
- 2016-2024, IEEE International Conference on Data Mining (ICDM), Program Committee Member
- 2019, 3rd International Conference on Big Data Management (ICDBM), Program Committee Member
- 2018, WWW poster track, program committee member
- 2018, IEEE Intl. Conf. on Data Science and Systems (DSS-2018), Program Committee Member
- 2018-2022, International Joint Conference on Knowledge Discovery and Information Retrieval (KDIR), Program Committee Member
- 2017, International Conference on Behavioral, Economic, and Socio-Cultural Computing (BESC 2017), program committee member
- 2017, PAKDD, program committee member
- 2017, IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC), program committee member
- 2017, IEEE International Conference SmartData, program committee member
- 2016, IEEE International Conference on Big Data, Session Chair

- 2016, 4th International Conference on Information and Network Security (ICINS2016), Program Committee Member
- 2016, the 8th International Conference on Information Science and Applications, Program Committee Member
- 2016, IEEE International Conference on Big Data Science and Engineering, Program Committee Member
- 2016, 9th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, Program Committee Member
- 2016, The 3rd International Conference on Behavioral, Economic, and Socio-Cultural Computing (BESC2016), Program Committee Member
- 2016, PAKDD, program committee member
- 2015, IEEE International Conference on Big Data, program committee member
- 2015, PAKDD 2015, program committee member
- 2015, IEEE International Conference on Dependable, Autonomic and Secure Computing, program committee member
- 2014, International Conference on Behavioral, Economic, and Socio-Cultural Computing (BESC'2014), program committee member
- 2014, the 13th IEEE International Conference on Trust, Security and Privacy in Computing and Communications, program committee member
- 2014, PAKDD 2014, program committee member
- 2013, NSF panelist
- 2013, the IEEE International Conference on Data Mining (ICDM'13), program committee member
- 2013, 2013 IEEE International Conference on Big Data (IEEE Big Data 2013), program committee member
- 2013, The 14th International Conference on Web Information Systems Engineering (WISE 2013), program committee member
- 2013, The 13th IEEE International Conference on Computer and Information Technology (CIT 2013), program committee member
- 2013, The 15th IEEE International Conference on High Performance Computing and
- Communications (HPCC 2013), program committee member
- 2012, NIH panelist
- 2012, reviewer for American Institute of Biological Sciences, International Journal of Information and Decision Sciences, Knowledge and Information Systems, VLDB journal,
- 2012, ACM SIGKDD Conference (KDD), program committee member.
- 2012, IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom-12), program committee member
- 2012, Int. Conf. on Web Information System Engineering (WISE 2012), program committee member.
- 2011, The 15th Pacific-Asia Conference on Knowledge Discovery and Data Mining, (PAKDD), program committee member
- 2011, International Conference on Computer and Information Technology (CIT'11), Program committee member.
- 2009, International Journal of Computational Models and Algorithms in Medicine, guest editor for a special issue on Privacy and Security Issues for Medical Data.
- 2010, International Conference on Data Engineering (ICDE 2010), program committee member.
- 2009, NIH panelist
- 2009, IEEE International Conference on Data Mining (ICDM 2009), program committee member
- 2009, International Conference on Data Warehousing and Knowledge Discovery (DaWaK 2009), program committee member
- 2009, International Conference on Computer and Information Technology (CIT'09), Program committee member.
- 2009, 11th ACM International Workshop on Web Information and Data Management (WIDM 2008), Program committee member.

- 2008, NSF panelist.
- 2008, IEEE International Conference on Data Mining (ICDM 2008), program committee member.
- 2008, International Conference on Extending Database Technology (EDBT), Program committee member.
- 2008, The Eighth International Conference on Computer and Information Technology (CIT'08), Program committee member.
- 2008, 10th ACM International Workshop on Web Information and Data Management (WIDM 2008), Program committee member.
- 2007, International Conference on Extending Database Technology (EDBT), Program committee member.
- 2007, The Seventh International Conference on Computer and Information Technology (CIT'07), Program committee member.
- 2006, The Sixth International Conference on Computer and Information Technology (CIT'06), Program committee member.
- 2006. WISE Workshop on Web-Based Massive Data Processing 2006, Program committee member.
- 2006, Workshop on IEEE International Workshop on Mining Evolving and Streaming Data 2006, Program committee member.
- 2005, The Fifth International Conference on Computer and Information Technology (CIT'05), Program committee member.
- 2004, IADIS International Conference Applied Computing 2004, Program committee member.
- 2004-2009, Manuscript Reviewer for top database conferences such as SIGMOD, VLDB, and ICDE.
- 2005, Proposal Reviewer for NSF.