



University of
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School of Computing
and Information

Meet SCI's New Faculty



Malihe Alikhani

Assistant Professor
Department of Computer Science

Education: PhD, Rutgers University

What are your research interests?

My research interests are in natural language processing (language technology), cognitive science, and human computation. This includes new approaches to learning, reasoning, and planning, new theories, and techniques for multimodal communication and modeling to enable intelligent systems to perceive, understand and model human behaviors, human language, and social interactions.

In my previous research projects, I have worked on human-robot dialogue, conversational interfaces, diagram understanding, natural language generation, and common ground processes in language use.

Collaboration with other scientific and engineering disciplines motivates my research on the fundamental NLP problems of language representation and reasoning. To this end, I am especially interested in using NLP to help people and machines communicate in complex domains such as scientific discourse, health, and education.

Why did you choose to come to SCI?

Understanding language is a deep, challenging, and interdisciplinary problem. I love the broad interests at SCI and I look forward to engaging with different perspectives and interests of the faculty and students. SCI is an exciting place for a computational linguist as it provides an excellent environment for cross-disciplinary collaborations. SCI encourages looking at any problem from the perspectives of multiple disciplines in order to arrive at more comprehensive solutions. The opportunity to be part of the outstanding AI team and the Intelligent Systems Program at the University of Pittsburgh and the prospect of collaborating with the linguistics and philosophy departments, as well as the center for learning sciences and causal discoveries greatly influenced my decision to join SCI.

How does your teaching/research align with SCI's mission?

Natural Language Processing holds tremendous promise to benefit nearly all domains of society, including healthcare, education, security, the law, and even our personal activities. One of my aims is to design frameworks that allow humans to easily work with AI systems that empower them to understand and solve complex problems in these domain applications while being ethical, legal, and responsible by design.

This requires creating AI systems that work with people in intuitive and helpful ways and provide the technical infrastructure that enables users to access artifacts, and that allows the community to communicate and coordinate their collective actions to create those artifacts.



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Kate Anderson

Visiting Assistant Professor

Department of Informatics and Networked Systems

Education: PhD, University of Michigan

What are your research interests?

My background is in social science and computational modeling, and my research lives at the intersection of economics, political science, and network analysis. I use a combination of computational models and large scale data to understand how individuals fit into a larger social whole. One branch of my work uses network science to better understand the relationship between a worker's skills and their wages. This is particularly important in the context of online labor markets, where employers increasingly use algorithmic search to find job candidates with particular combinations of skills. I have also looked at the role of interdisciplinary researchers in scientific collaboration networks, and how policies encouraging interdisciplinary skills might affect the pace of innovation.

Why did you choose to come to SCI?

I chose to come to SCI because I felt that I had something important to add to the department. I often find myself at the intersection of two different worlds—computation and social science. The prospect of a place where I could have both perspectives is enormously appealing. My own research suggests that combinations of skills are often more than the sum of their parts—social science and computation make for a powerful combination.

How does your teaching/research align with SCI's mission?

My research uses computational models and network science to answer core social science questions. Computational social science is a vital part of information science, and I'm so pleased to have a group of people who share my interests and expand the landscape of questions! My teaching is in network science and entrepreneurship/innovation. I've been developing a new course with Martin Weiss in social and telecommunications networks.



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Amy Babay

Assistant Professor

Department of Informatics and Networked Systems; Department of
Computer Science

Education: PhD in Computer Science, Johns Hopkins University

What are your research interests?

My general research interests are in distributed systems and networking. Dependability is a major theme of my work: as our world grows more connected and complex, making sure that the distributed systems that power so many aspects of our lives today are always available and working as expected becomes more and more crucial. I'm especially interested in how we can ensure that the critical infrastructure systems our society relies on are resilient to failures and attacks -- one focus of my recent work has been building SCADA systems for the power grid that can continue to work correctly even after an attacker has managed to hack into the system and gain control of part of it. At the same time, I'm really excited about the performance side of things and how we can develop new network protocols to provide faster, more reliable communication and enable levels of interactivity that were never possible before, for things like immersive virtual reality collaboration with people across the globe.

Why did you choose to come to SCI?

I think SCI is an incredibly exciting place to be right now! The opportunity to be part of building up the new school and play a role in all of the exciting changes that are happening now was a big factor in my decision to come here. I love that the school takes the "making the world a better place" part of its mission seriously, and I think that the broad perspective of the SCI as a whole across the three departments makes it really well positioned to actually do that. Of course, being able to collaborate with the outstanding faculty already in the school, join an awesome cohort of energetic new faculty, and live in the great city of Pittsburgh are all plusses too!

How does your teaching/research align with SCI's mission?

I see my research on the dependability of complex distributed systems as very much in line with SCI's mission of making the world a better place through the science of interacting systems: I work to build practical systems that address real-world problems and to make sure that the infrastructure systems that run our society can be relied on to work as expected. On the teaching front, I'm interested in finding ways to help undergraduates learn how to use their technical skills to help address real problems in their communities; I co-created a Software for Resilient Communities class at Johns Hopkins that worked toward that, and I'd love to do something similar here at Pitt in the coming semesters.



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Jacob Biehl

Associate Professor

Department of Information Culture and Data Stewardship; Department of
Computer Science

Education: PhD in Computer Science, University of Illinois at Urbana-
Champaign

What are your research interests?

Human computer interaction, internet of things, location technologies and multi-device interaction.

Why did you choose to come to SCI?

SCI, and the University of Pittsburgh overall, presents a remarkable environment to form meaningful, cross-disciplinary collaborations. The goal – embark on a path of collaborative research that seeks to solve important and challenging problems facing society today.

How does your teaching/research align with SCI's mission?

While a powerful tool, computation alone can't solve the complex problems facing the World today. In my research, I have partnered with experts that have a deep understanding of domain's challenges. Together, we've shown how computation can bring to light new understanding that, in turn, can inspire and inform new approaches. This is a frontier that requires innovation across the disciplines involved, not just applying the teachings from one to the other. This is what inspires my scholarship, and I believe is also embedded in the mission of this School.



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Arjun Chandrasekhar

Teaching Assistant Professor

Department of Computer Science

Education: PhD in Bioinformatics and Systems Biology, University of California San Diego

What are your research interests?

I completed my PhD at the Salk Institute at UCSD, under the supervision of [Dr. Saket Navlakha](#). My research focuses on the emerging field of biological distributed algorithms. Nature abounds with examples of biological systems, such as insect colonies, networks of neurons, slime molds, and bacteria swarms, that manage to overcome environmental obstacles and challenges in a distributed manner. Rather than relying on a centralized processor to direct control flow, the systems use limited local communication to produce complex collective behavior. Not only are these systems quite elegant in their emergent properties; the challenges they overcome often have direct analogues to problems in computer science and combinatorial optimization. How do these systems succeed under limited constraints? It is often said that necessity is the mother of invention. Biological systems without the luxury of central control have had the opportunity to innovate and refine methods on evolutionary time-scales. It thus stands to reason that if we can understand how these systems behave, we will arrive at a new, and perhaps improved, understanding of distributed computing. My research seeks to understand how these systems operate, and reverse-engineer efficient distributed optimization algorithms. To this point I have focused on two particular systems: ant colonies, and individual neural arbors.

Why did you choose to come to SCI?

The honest answer is that long-term, teaching-track faculty appointments at good schools in desirable cities are few and far between! But I also am excited to teach at a school with a demonstrated commitment to excellent teaching. The investment in full-time teaching faculty is impressive enough, and I really liked that both the job listing and all of my interviewers emphasized the university's emphasis on a polymathic approach to education. I am also excited for the opportunity to teach in a department with a strong long-term vision for an expanded, interdisciplinary information science curriculum.

How does your teaching/research align with SCI's mission?

I have taken courses on and taught a wide variety of disciplines, including: computer programming and data structures, discrete math, theory of computation, algorithm design, bioinformatics, statistics, data science, and distributed computation. All of these subjects have been essential to my research. As such, my academic journey has prepared me well for SCI's interdisciplinary vision for the future of the curriculum. My firm grounding in the fundamentals of computer science will fortify the quality of undergraduate computer science instruction at Pitt. Furthermore, my background in statistics, data science, and bioinformatics will be useful for expanding our undergraduate and graduate course offerings in information science. Finally my unique research interests and collaborations will allow me to develop a course on biologically-inspired algorithms that will differentiate the SCI curriculum from the curricula at many other engineering departments.



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Morgan Frank

Assistant Professor

Department of Informatics and Networked Systems

Education: PhD, MIT's Media Lab

What are your research interests?

Complex Systems; Computational Social Science; Artificial Intelligence; Science of Science; Future of Work.

Why did you choose to come to SCI?

I chose SCI because SCI is a melting pot for thinkers with a diverse range of backgrounds. For example, social scientists from across Pitt come to SCI to collaborate on data-intensive projects, and, on the other hand, SCI researchers work with researchers across Pitt to tackle important domain questions.

How does your teaching/research align with SCI's mission?

My research combines principles of complex systems and data science to test the boundaries of labor economics and to better understand the social and societal consequences of technological change.



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Chelsea Gunn

Teaching Assistant Professor

Department of Information Culture and Data Stewardship

Education: PhD, University of Pittsburgh School of Computing and Information

What are your research interests?

My research interests are largely centered around personal archives – both the ways in which individuals create and tend to their own records and the ways archival institutions acquire, preserve, and provide access to the records of private individuals. I am particularly interested in the intersection of personal archives and commercial technological infrastructure. How do the socio-technical systems that support record creation and use, including social media and cloud storage, affect long-term access to personal records? How does this infrastructure, in turn, impact or alter documentary heritage and collective memory? I consider these questions from a technological perspective, exploring digital preservation strategies, as well as through an ethical, personal, and community-focused lens.

Why did you choose to come to SCI?

Having been a doctoral student at SCI through its formation and first three years in operation, I have been closely following, and at times involved in, the planning and development of the school and, in particular, the redesigned Master of Library and Information Science program. Archival education at Pitt, in particular, has a long and impactful history that I am excited to be a part of. I have a great deal of respect and admiration for the faculty I was able to work with as a graduate student, and was eager to both continue working with them and contribute to the recently relaunched MLIS in a greater capacity as a member of that faculty.

How does your teaching/research align with SCI's mission?

The skills of information professionals seem to be more vital and relevant now than ever. My approach to both teaching and research is informed by my own experiences working in a variety of institutions, from local historical societies to public libraries to government agencies. As an educator, I hope to prepare students for work in a range of organizational environments, and to emphasize the transdisciplinary, versatile potential of information work. And because my research considers the impact of socio-technical systems on archives and memory, the opportunity to work alongside people who are engaged in the development of socio-technical systems, and who engage in this work from other perspectives, is an exciting prospect. SCI's emphasis on a polymathic education aligns with my goal of pursuing collaborative, interdisciplinary work, both within the school and throughout the university more broadly.



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Seong Jae Hwang

Assistant Professor

Department of Computer Science

Education: PhD in Computer Science, University of Wisconsin- Madison

What are your research interests?

Understanding the complex mechanisms of neurodegenerative diseases is crucial for discovering methods of prevention and treatment, and this often needs complex models that can properly leverage and analyze the underlying information from modern data. My research focuses on developing statistical machine learning and deep neural network methods for analyzing complex data in machine learning, computer vision, and medical imaging. Currently, one of the main topics of interest is in characterizing the development of Alzheimer's disease with neuroimaging data and related pathologies such as amyloid.

Why did you choose to come to SCI?

There are multiple reasons. After I visited Pitt and met people at SCI, I was certain that if I come to SCI I would be working with good, genuine people. Also, as I learned more about SCI, it became evident that SCI highly encouraged collaborative and interdisciplinary research, and a school with such a view on computer science was exactly what I sought for.

How does your teaching/research align with SCI's mission?

As a computer scientist with interdisciplinary research topics broadly ranging from neuroimaging to computer vision, I often look for answers to real-world problems that are extremely difficult without polymathic efforts with related fields such as neuroscience. Thus, I see my research well aligning with the school's mission, but I also want students to realize how they can also be a part of the mission as well. My goal is to help students learn more about interesting problems beyond classical computer science and realize how SCI could become a crucial part of practically anything.



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Ahmed Ibrahim

Assistant Professor

Department of Informatics and Networked Systems

Education: PhD in Computer Science, University of Kentucky

What are your research interests?

My research interests are in the area of security and privacy. I conducted research on e-voting security for the Egyptian parliamentary elections, which involved designing a protocol that allows for voter privacy while remaining verifiable. I am currently researching secure health information exchange by providing healthcare organizations the capability of mutual authentication and patient authentication and ensuring the privacy, integrity, and auditability of exchanged medical information.

Why did you choose to come to SCI?

I chose to join SCI because it has a commitment to excellence in education and a diverse group of professors and students. I am looking forward to working with colleagues to help students advance their knowledge, learn by doing, and acquire useful skills which they can use in the future.

How does your teaching/research align with SCI's mission and goals?

I think of learning as an essential element in one's life, as important as eating and drinking. My best moments are when I learn something new or help someone learn something new. I engage in educating students through delivering university-level courses, advising student projects, mentoring students, assisting students in learning activities outside the classroom, creating and enhancing educational material, and participating in K-12 educational events.



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Xiaowei Jia

Assistant Professor

Department of Computer Science

Education: PhD, University of Minnesota

What are your research interests?

My research interests include physics-guided data science, spatio-temporal data mining, deep learning and remote sensing.

Why did you choose to come to SCI?

I chose SCI because of its great research atmosphere. Faculty members in SCI are making a lot of progress in their own research domain and also I can see a clear potential for collaboration with other faculty members.

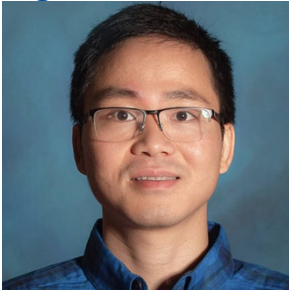
How does your teaching/research align with SCI's mission and goals?

One major aspect of my research is to develop a new generation of data-driven methods for modeling physical systems by capturing underlying processes that are evolving and interacting at different spatial and temporal scales, thus providing better predictive accuracy, generalizability and scientific interpretability. This can directly contribute to SCI's mission of modeling complex and interacting natural and engineered systems.



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Stephen Lee

Assistant Professor

Department of Computer Science

Education: PhD in Computer Science, University of Wisconsin- Madison

What are your research interests?

I am an experimental systems researcher interested in modeling and building systems in the areas of distributed systems, Internet of things (IoT), and cyber-physical systems with a focus on sustainability. My work involves using principled approaches from distributed systems, machine learning, and optimization to build more scalable, energy-efficient, and dependable systems. I am particularly excited about research problems that span multiple domains, including smart grids and buildings, complex computing systems, among others.

Why did you choose to come to SCI?

One of the main reasons for choosing SCI is its commitment to interdisciplinary research. With numerous institutes (e.g., momacs, Pitt Cyber, Energy Innovation Center) and industry partners, I believe that SCI is uniquely positioned to become the leaders in modeling systems, one of the main focus of my research area. My interactions with other faculty members, both within and outside of the department, has only reinforced this belief.

How does your teaching/research align with SCI's mission and goals?

In many emerging scenarios, CPS/IoT systems provide significant potential to permeate and transform many aspects of our society, supporting critical infrastructures as well as consumer-facing systems. My research goal is to explore, analyze, model, and build tools that will help towards an understanding of these complex systems.



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Eleanor “Nora” Mattern

Teaching Assistant Professor

Department of Information Culture and Data Stewardship

Education: PhD in Library and Information Sciences, University of Pittsburgh

What are your research interest?

Broadly speaking, my research focuses on digital stewardship and preservation, information policy and ethics, and civic engagement and information. Much of my work currently focuses on information about our communities and, namely, the roles of public and academic libraries in civic data initiatives. Additionally, I am interested in data practices in community-based research and strategies for developing equitable data practices and sharing agreements between university researchers and community organizations.

Why did you choose to come to SCI?

I completed a PhD in Library and Information Sciences at the University of Pittsburgh’s School of Information Sciences in 2014 and subsequently had the opportunity to hold a joint visiting faculty position in the University Library System and SCI. With the reimagining of the Master in Library and Information program and the growing polymathic undergraduate curriculum, I knew that SCI would offer a vibrant environment for teaching. In addition, I recognized that SCI would provide a space for me to pursue the scholarly and community-focused research activities that drive me.

How does your research/teaching align with SCI’s mission?

SCI’s commitment to polymathic education and experiential learning resonates deeply with my own teaching philosophy and approach. Moreover, my teaching and research critically examine the ways that information and technologies affect our communities and the ethical implications of our work as technologists and information stewards. These are important and necessary considerations in systems-oriented research and I am glad to be engaged in this work at SCI.



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Rebecca Morris

Teaching Associate Professor

Department of Information Culture and Data Stewardship

Education: PhD, University of Pittsburgh

What are your research interests?

Over my career as a teacher, librarian, and researcher, I have been curious to participate, observe, and understand how school librarians contribute “today” to student learning and the community of the school, and how the capacities and relationships of a school librarian might evolve and innovate to better serve students and families, teachers, and school priorities. Some areas of research interest are the professional development of librarians and educators, and digital tools for storytelling and engaging with information.

My scholarship encompasses publications and presentations for audiences of researchers, educators, and library science practitioners, a reflection of the particular context and needs of the interdisciplinary school and youth librarianship. An example of scholarship that speaks to stakeholders invested in, and adjacent to, the library profession is my 2015 book, *School Libraries and Student Learning: A Guide for School Leaders* (Harvard Education Publishing). This book aims to foster school library growth through the engagement of school principals and administrators.

I’m curious to do more to involve young people, librarians, and educators more directly and intentionally in research projects. Toward this goal, in January 2020, I participated in a summit entitled CLASS (Causality: School Libraries and Student Success) Research Practitioner Partnerships (RPPs) in School Library Research, offered by the American Association of School Librarians. And at 2019’s iConference, I co-presented a session called, *Playing Around: Informing, Including, and Inspiring Youth-Centered Information Researchers*.

Related to my research activities are my current roles on the Editorial Board of *School Library Research* and service in the Community of Scholars, part of the AASL Educators of School Librarians Section. I am also starting my sixth year as Co-Editor of *School Library Connection*, a print publication and digital platform published by ABC-CLIO. As editor, I recruit faculty and practicing librarians and educators to write for themed issues, support their submissions, write an editorial, and contribute professional development segments for video workshops, webinars, and interactives.

Why did you choose to come to SCI?

As the School of Computing and Information enters its fourth year, I am so excited and honored to be a part of the rich tradition of library and information science education here in Pittsburgh. I hope that my experience as a professor of LIS and leader in professional organizations will serve as an asset to SCI, particularly in the implementation of the newly redesigned MLIS program. As an alumna of the (former) School of Information Sciences MLIS and PhD programs myself, I am looking forward to



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joining the University community, meeting the students as classes and activities begin this Fall, and learning from new colleagues.

How does your research and/ or teaching align with the mission or goals of the school?

As a member of the SCI faculty, I am looking forward to contributing to the School's mission, especially in the area of building interdisciplinary partnerships. This summer, I have begun to meet faculty across the School through preparations for Flex @ Pitt. We have been sharing and discussing strategies for effective online and hybrid teaching, and it's so interesting to see how we can draw inspiration from one another across diverse teaching topics and courses, on everything from assessment to creating instructional videos to building community in a class.

My field of Library and Information Science is interdisciplinary by nature, and within the classroom, one of my favorite aspects of teaching in LIS is the diverse professional and academic backgrounds of my graduate students. Seldom does a person have an undergraduate degree in LIS, so the content is new for just about everyone— yet adult learners bring a range of experiences to the class community, as well as the intersection of diverse groups they may represent. I try to support students' leadership growth and confidence in a field that is new to them by drawing upon their diverse academic, professional, and personal backgrounds, incorporating and examining authentic problems and questions, and providing flexibility and personalized learning in process and product. I hope that this philosophy, and my experience teaching online in varying formats, courses, and learning management systems, will be a helpful foundation for implementing Flex @ Pitt this year.



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Luis de Oliveira

Visiting Lecturer

Department of Computer Science

Education: PhD, University of Porto

What are your research interests?

My main research interests are on real-time communications for distributed embedded systems and in reproducibility of computational-driven experiments. For the former, my research focuses mainly on managing the communications of dynamic teams of mobile agents that need to collaborate in order to perform their tasks. Applications range from autonomous and automatic vehicles (e.g., coordinate to avoid an accident) to teams of robots that need to efficiently search and rescue (e.g., distribute over the search area uniformly). For the latter, I have been working on tools to improve the repeatability and reusability of scientific software artifacts (e.g., simulators) that have specific execution requirements. As scientists increasingly rely on computer-based experiments and simulations to drive their research and publish their conclusions, it is vital that their experiments can be repeated. Otherwise, they cannot be validated and used to create new knowledge.

Why did you choose to come to SCI?

I joined the CS department of the University of Pittsburgh in 2016 for a post-doc opportunity, not knowing much about the place I was heading to. Then, during the 3 years I developed my research in SCI, I learned how the University of Pittsburgh is one of the world's most innovative universities, and how the City of Pittsburgh is quickly growing to be a thriving and vibrant technological center. The prospect of conducting my research, and of developing and applying my knowledge towards teaching the next generation of leading computer scientists in this unique location compelled me to join SCI.

How does your research and/ or teaching align with the mission or goals of the school?

SCI's approach to making the world a better place through an interdisciplinary approach resonates very much with my research and teaching agendas. Computer systems are ubiquitous in modern society, and that means that they are no longer only interacting amongst themselves, but also with the physical world. In order to understand all the implications of this change in paradigm, we need to study and understand these systems and their interactions in a pluri-disciplinary fashion. Both technological, ethical, and societal.



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Vinicius Petrucci

Lecturer

Department of Computer Science

Education: PhD in Computer Science, Fluminense Federal University, Rio de Janeiro

What are your research interests?

My primary research interests concentrate on computer systems with emphasis on improving resource efficiency while delivering real-time performance guarantees. Energy consumption, for instance, is a big and growing problem for large-scale server systems, smartphones, and wearable devices. In particular, I have focused on understanding the tradeoffs of energy (e.g. save energy by running a bit slower) and performance (e.g. need to meet user expectations, always!) and exploring this knowledge to design better dynamic resource management approaches.

Why did you choose to come to SCI?

What attracted me most to SCI is to work at an international forefront institution where I can carry out world-class research and develop innovative teaching and learning practices to ensure the students who will bear the future achieve academic excellence. SCI is located in a culturally and academically vibrant city, known as a place that is rebuilding its history betting on new technologies and in the excellence of education. I feel that SCI (as well as Pitt and Pittsburgh) has a sort of magnet that attracts great people to do great work.

How does your research/teaching align with SCI's mission?

Both my teaching and research agendas fit in well with the School mission and vision addressing interdisciplinary and holistic aspects of computing and information. With the ubiquity of software applications, new models and management policies and mechanisms are required to tackle very dynamic, connected, and complex computing systems. Improving resource efficiency is critical to enable sustainable and scalable systems, which in turn calls for systems-oriented research and education, as promoted by the School of Computing and Information.



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Marcia Rapchak

Teaching Assistant Professor

Department of Information Culture and Data Stewardship

Education: EdH, Duquesne University

What are your research interests?

My research interests include information literacy education in higher education, online learning in higher education and, most recently, critical librarianship. With regard to information literacy education in higher education, I have explored how academic librarians can partner with other disciplines to help students develop ways of thinking needed to understand the contextual and situatedness of different research activities. Typically, information literacy instruction involves classes of students visiting the library and receiving fifty minutes of demonstrations on how to use databases. Academic librarians know that this is not the most effective method of instruction, and, as an academic librarian for over seven years, I knew the importance of partnering with other faculty to find more meaningful ways to integrate information literacy instruction. I was able to research the impact of such partnerships while also integrating my findings into the information literacy program at my previous institution.

Why did you choose to come to SCI?

I came to Pitt very recently – September of 2018 – because I wanted to be a part of the redesign of the Master of Library and Information Science, housed in the Information Culture and Data Stewardship department. I have experience teaching students in writing composition, public speaking, and library research methods (also known as information literacy), but now there exists a strong connection between my research and teaching, which I think will improve both.

How does your research/teaching align with SCI's mission?

I have been interested in online learning for nine years, but I did not start researching this until I began teaching regularly online in 2012. I became very interested in how to create a sense of community in an online environment, and decided to pursue my doctorate in instructional technology. My dissertation research evolved to explore how social metacognitive awareness compared in online groups and face-to-face groups in a freshman information literacy course. Face-to-face groups had significantly higher levels of social metacognitive awareness and felt that their group experience was more successful than online groups. Metacognitive awareness between online and face-to-face students was not significantly different, but even when taking metacognitive awareness scores into account, the social metacognitive awareness scores were still significantly different. This research shows that if students are working in groups online, more must be done to make sure they understand the cognitive abilities of the group and how to regulate the group process to succeed. I am now collaborating on a project to see if including metacognitive and social metacognitive prompts in an online learning environment improves the quality of a group project and increases social metacognitive activity. In my own online teaching, I put into practice what I've learned through my research and through exploring the literature to scaffold, create opportunities for reflection, guide group activities, and use brain-based strategies to improve learning in the online environment.



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Xulong Tang

Assistant Professor

Department of Computer Science

Education: MS in Computer Science, University of Science and Technology of China; BS in Computer Science, Harbin Institute of Technology

What are your research interest?

My research interests lie in the fields of high-performance computing and parallel computer architectures and systems. In particular, I am interested in effective and efficient system support/optimization for complicated real-world applications (e.g., deep learning, graph analytics, and scientific applications)

Why did you choose to come to SCI?

I decided to join SCI because the school vision is appealing to me especially as a computer system/architecture researcher. The evolution of computer system nowadays is experiencing a transition from homogeneous systems to heterogeneous systems. This is driven by the ever-growing complexity of applications in different domains spanning from biological analysis, medical science, economy forecast, and personal entertainment. To better support these challenging applications, the systems really need to understand the essential characteristics and needs of these applications. As a system researcher in SCI, I am encouraged to conduct interdisciplinary and multidisciplinary researches, which provide us opportunities to understand the real needs from applications and design better systems.

How does your research/teaching align with SCI's mission?

Our school mission is "To make the world a better place through polymathic education and the science of interacting systems." To accomplish this mission, endeavors sitting along the spectrum from software to hardware are required. Using AI as an example, it is so successful not only because of many efficient AI algorithm have been proposed, but also because of efficient system/platform support for fast execution (e.g., Google TPU). As a system researcher, I believe we can create a real polymathic education environment and deliver end-to-end systems in SCI together with other faculties who are experts in algorithms, databases, security, etc.



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Erin Walker

Associate Professor

Department of Computer Science

Education: PhD in Human Computer Interaction, Carnegie Mellon University; BS in Computer Science and Psychology, University of Manitoba

What are your research interests?

My research uses interdisciplinary methods to improve the design and implementation of educational technology, and to understand when and why it is effective. I am particularly pursuing projects that incorporate social and contextual adaptation into learning environments, including implementing a teachable robot for mathematics learning, using technology to support peers in giving help across different platforms, and developing an intelligent tutoring system to help parents and children read together. A second line of my work relates to the careful design of technology to facilitate the development of a finer-grained understanding of learning processes. For example, one project looks at how brain data and log data can be combined to infer a learner's cognitive and motivational state. Overall, my work spans questions related to intelligent tutoring systems, computer-supported collaborative learning, human-robot interaction, and brain-computer interaction.

Why did you choose to come to SCI?

I think a school combining Computer Science, Information Science, and Library Science has the collective deep expertise needed to attack important real-world problems related to domains such as education, health, and sustainability. I am enjoying being part of a new, dynamic, and growing school, and to have the opportunity to shape the vision of the school. I have a joint appointment in the Learning Research and Development Center, and am also excited to be part of the bridge between the learning research happening at Pitt and the computing research.

How does your teaching/research align with SCI's mission and goals?

Much of my research relates to modeling, from designing digital environments that facilitate the modeling of learning processes to using artificial intelligence to assess these processes and provide adaptive support. Thus, I am very much in line with SCI's vision of modeling the world. My deep expertise is in Human-Computer Interaction, which is a field that also spans Computer Science, Information Science, and Library Science. I excited to contribute to SCI's multidisciplinary course offerings in that area.



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Lingfei Wu

Assistant Professor
Department

Education: PhD in Communication, City University of Hong Kong; M.A. in Communication, Peking University

What are your research interests?

I am a computational social scientist interested in understanding the geometry of thinking and applying it to design the future of research, education, and employment in the knowledge economy.

Why did you choose to come to SCI?

The vision of SCI of "computing with a context" was very inspiring. I think this vision is ahead of time and position SCI as a leading institution for the expanding global interest in modeling and understanding complicated systems.

How does your teaching/research align with SCI's mission and goals?

The vision of SCI of "computing with a context" is relevant to my career identity as a computational social scientist. I see my teaching on data visualization and my research on modeling the national talent system - the supply and demand of knowledge and skills fit perfectly into the goals of SCI and I am exciting for the career possibilities.



University of
Pittsburgh

School of Computing
and Information



Joseph Yurko

Teaching Assistant Professor

Education: PhD in Nuclear Engineering, MIT

What are your research interest?

I am interested in applying Bayesian models to optimize complex systems in the presence of uncertainty.

Why did you choose to come to SCI?

SCI is focused on solving challenging problems with modern computational tools. The school has expertise in all areas of the complete life cycle of a data related project. From collecting, processing, and storing data to transforming data into knowledge, and ultimately making decisions based on that knowledge. I wanted to contribute to that mission.

How does your research/teaching align with SCI's mission?

I am very excited to be teaching machine learning and data analytics courses. Those areas contribute to learning from data. Algorithms find patterns and trends in data, and humans interpret those results. My teaching is focused on helping students understand how the assumptions behind the algorithms impact the conclusions they draw from those algorithms