University of Pittsburgh

> TAKE A
LOOK AT
COMPUTING
AND INFORMATION
AT PITT

University of Pittsburgh School of Computing and Information

AT A GLANCE

The School of Computing and Information (SCI) is using data and systems to solve large-scale problems. The critical research being conducted at SCI is changing the way society does business, manages health care, provides education, and designs infrastructure.

Student Body

577 undergraduate students

568 graduate students

30 percent female and 70 percent male

33 countries

28 states

55% Pennsylvania residents

All incoming undergraduate students are in the top 15 percent of their graduating high school class.

Rankings and Reputation

Pitt has been designated a **National Center of Academic Excellence** in Information Assurance Education by the National Security Agency and the U.S. Department of Homeland Security.

SCI's Master of Library and Information Science program has been recognized as one of the **top 10 programs in the country** by *U.S. News & World Report*.

SCI's Department of Computer Science is among the **oldest in the world,** exemplifying research and teaching excellence since 1966.

History

The evolution of computing and information at Pitt

The Carnegie Library School, founded in 1901 as the Training School for Librarians, transfers from what was then the Carnegie Institute of Technology to the University of Pittsburgh.

1961

1964 The school becomes the Graduate School of Library and Information Science, and the master's degree program receives its first American Library Association accreditation.

1966 The Department of Computer Science is established, making it one of the oldest in the country.

1974 The Master of Science in Information Science degree program is established.

1979 The school name is changed to the School of Library and Information Science; the bachelor of Science in Information Science degree program is established.

1986 The Intelligent Systems Program is established.

1987 The Master of Science in Tele-communications degree program is established.

1996 The school becomes the School of Information Sciences; the Master of Library Science degree is changed to the Master of Library and Information Science degree.

2017 The school name is changed to the School of Computing and Information and merges the School of Information Sciences with the Department of Computer Science and the Intelligent Systems Program (both from the Kenneth P. Dietrich School of Arts and Sciences).

Alumni

17,000

Located in:
Pittsburgh
California
Washington, D.C.
Chicago, Ill.
India
China

Employed by:
Carnegie Museum of Art
PNC Financial Services Group, Inc.
PPG Industries, Inc.
Federated Investors, Inc.
Carnegie Mellon University
Google
The Bank of New York Mellon
UPMC Enterprises
Facebook
Amazon.com, Inc.
Library of Congress

Faculty Research Strengths

Artificial intelligence
Big data
Cybersecurity
Internet of things
Human-computer interaction
Data science
Modeling

DEPARTMENTS AND PROGRAMS

Department of Computer Science
How do you take a problem and abstract it in ways that the computer can understand it and then put the data structure and algorithms in place? The degree programs in this department aim to provide students with a deep understanding of computational thinking and the necessary research for future applications.

Department of Informatics and Networked Systems
This department looks at both the physical technology and the enabling processes to share information and keep it secure. Our graduates have the skills and knowledge essential for designing and managing information systems to meet the needs of businesses, people, and society.

Department of Information Culture and Data Stewardship
Information professionals are the human interface that connects people, information, and technology. The degree programs in this department provide strong grounding in the skills, knowledge, and ethical practices of the information professions and share insights into the broader role of information in culture and society.

Computational Modeling and Simulation Program
This integrated program combines creative and independent research, course work, and teaching. Students pursue research in diverse areas, such as computer science, engineering, math, psychology, and physics.

Intelligent Systems Program
The Intelligent Systems Program is a multidisciplinary graduate program dedicated to applied artificial intelligence (AI). Students have the opportunity to study specialized areas of AI with faculty members from across the University, including from the Schools of Medicine, Education, and Law.

PROFESSIONAL INSTITUTE

The Professional Institute at the University of Pittsburgh School of Computing and Information provides a multidisciplinary approach to continuing education that is designed to help professionals gain critical skills to advance in the workplace or take on new, high-demand career opportunities.

Our program offerings have been developed with input from industry experts to meet the needs of today's professionals. In collaboration with Pitt's School of Law; Graduate School of Public and International Affairs; and Institute for Cyber Law, Policy, and Security, these offerings provide the technical, policy, and legal knowledge necessary to tackle current and future challenges.

The Professional Institute is currently offering the Graduate Certificate in Cybersecurity, Policy, and Law and a nondegree professional education program.

Learn more at sciprofessional.pitt.edu.

DEGREES AND CERTIFICATES

Bachelor's Degrees
Bachelor of Science in Computational Biology
Bachelor of Science in Computer Science
Bachelor of Science in Digital Narrative and Interactive Design
Bachelor of Science in Information Science

Master's Degrees
Master of Library and Information Science
Master of Science in Computational Modeling and Simulation
Master of Science in Computer Science
Master of Science in Information Science
Master of Science in Intelligent Systems
Master of Science in Telecommunications

### Doctoral Degrees
Doctor of Philosophy in Computational Modeling and Simulation
Doctor of Philosophy in Computer Science
Doctor of Philosophy in Information Science
Doctor of Philosophy in Information Science with a concentration in Telecommunications
Doctor of Philosophy in Intelligent Systems
Doctor of Philosophy in Library and Information Science

Certificates
Certificate of Advanced Study in Big Data Analytics
Certificate of Advanced Study in Information Science
Certificate of Advanced Study in Telecommunications
Graduate Certificate in Cybersecurity, Policy, and Law
Graduate Certificate in Information and Network Security
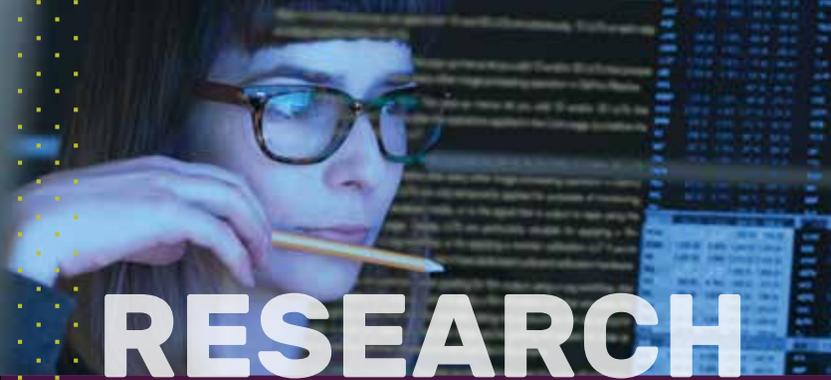
RESEARCH

Research Project Spotlight

Our faculty are experts in the fields of computer science, data science, artificial intelligence, data storage and retrieval, cybersecurity, and more. Together with students, they are exploring how to build smart cities, the potential of social computing to change communities, the power of decision making in business, and how to deliver personalized health care.

Descriptions of some current research projects:

Pitt Smart Living: Building a Smart City Economy and Information Ecosystem to Motivate Prosocial Transportation Behavior

SCI faculty involved: Alexandros Labrinidis, professor; Adam Lee, associate professor; Yu-Ru Lin, associate professor; and Konstantinos Pelechrinis, associate professor
Funding source: National Science Foundation

Pitt Smart Living aims to design, develop, deploy, and evaluate a system that provides users with real-time information on public transit—buses, shuttles, subways, and bicycles—as well as build a marketplace centered around multimodal mobility. This system has the potential not only to improve the overall ridership experience by balancing use across public transportation networks but also to optimize customer flows in local businesses.

TRIBAL: A Tripartite Model for Group Bias Analytics

SCI faculty involved: Rebecca Hwa, associate professor, and Yu-Ru Lin, associate professor
Funding source: Defense Advanced Research Projects Agency (DARPA)

This project, part of DARPA's Understanding Group Biases program, aims to develop and advance a reproducible approach to revealing biases of different groups or cultures by analyzing social media data with cutting-edge methods of natural language processing and machine learning. The proposed framework will be driven by social theories on how groups' cultural mind-sets are shaped across three theoretically grounded facets: value, emotion, and context.

Diversity by Design: Scaling and Fostering Diverse and Inclusive Intergenerational Communities of Practice

SCI faculty involved: Kayla Booth, research assistant professor
Funding source: Institute of Museum and Library Services

This project aims to explore how students from underrepresented groups develop and maintain a sense of community and belonging within cohort-based recruitment programs and how these experiences compare to participants' sense of community in their graduate programs and workplaces. The project also will provide recommendations for how the community developed in recruitment programs can be extended and scaled to a model of lifelong learning and support.

Learn more at sci.pitt.edu/faculty-and-research/ areas-of-research.

MOMACS

The Modeling and Managing Complicated Systems (momacs) institute at SCI aims to develop a network of stakeholders—including in government, industry, foundations, and academia—who have a common interest in using artificial intelligence and machine learning to solve society's greatest challenges.

Our affiliates come from universities around the world and are experts in either modeling or in developing the tools and technologies to enable modelers. In building these tools and leveraging these experts, we are able to work with clients in areas such as the environment, business, finance, and government to design interventions that address large-scale issues like poverty, climate change, and the opioid epidemic.

Learn more at momacs.pitt.edu.

Labs and Facilities

The School of Computing and Information has more than 15 research labs where students and faculty are conducting high-caliber research on topics such as artificial intelligence in education, radio spectrum sharing, big data, and developing smart cities.

Descriptions of some of our labs:

Advanced Data Management Technologies Laboratory

The Advanced Data Management Technologies Laboratory conducts research that is targeted toward network-centric data management applications (for example, mobile data management, sensor networks, and web databases), and the approach taken is user centric. Emphasis is placed on Quality of Service (QoS) and Quality of Data (QoD) returned to users, and on controlling the trade-off between QoS and QoD in a way that is prescribed by users.

Laboratory for Education and Research on Security Assured Information Systems (LERSAIS)

LERSAIS provides a framework for the long-term goals of establishing a premier research program that focuses on the diverse problems related to security and survivable information systems, networks, and infrastructures and developing and supporting high-quality education in security and information assurance. The University of Pittsburgh has been designated a National Center of Academic Excellence in Information Assurance Education since 2004 by the National Security Agency and the U.S. Department of Homeland Security. LERSAIS is Pitt's representative Center of Academic Excellence (CAE) and also has been designated as CAE-Research.

Personalized Adaptive Web Systems (PAWS) Research Lab

The PAWS Lab was established in 2004 with support from the National Science Foundation (NSF) and SCI. The goal of PAWS is to develop and evaluate innovative user- and group-adaptive web-based technologies, systems, and architectures. PAWS currently explores a range of user modeling, adaptation, and personalization technologies. This work is supported by NSF and DARPA funding.

**Learn more at
sci.pitt.edu/faculty-and-research/
labs-centers-and-institutes.**

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