



Computing Research Association

Academic Member Highlight Book

FALL 2023

UNITING INDUSTRY, ACADEMIA, AND GOVERNMENT TO ADVANCE COMPUTING RESEARCH AND CHANGE THE WORLD.



CRA

Computing Research
Association

Welcome to the 2023 CRA Academic Member Highlight Book

Since 2017, this annual publication has served as a valuable resource that provides our academic member units (departments, schools, etc.) with a stage to share the latest breakthroughs, accomplishments, and news from their faculty and students. It offers a window into the vibrant and growing world of computing research and education that I know many of you look forward to receiving each year.

As we scroll through its pages, we encounter a wealth of useful and fascinating information. Whether you are a member of the computing research community, a prospective student seeking the ideal educational path, a new PhD looking for a faculty position, or a member of the general public with a curiosity for our field, this book opens doors to knowledge about new faculty members, academic and research statistics, awards, grant funding information, and so much more.

I extend my gratitude to all the academic member units that contributed to this year's edition. Your dedication and commitment to advancing the field of computing research is truly commendable, and as an organization we're so glad to be able to provide this platform for you to showcase your achievements.

I encourage you to explore all the pages of this year's book, each of which encapsulates the dedication and innovation that characterize CRA and its academic member units. Together, we continue to drive progress in our dynamic field.

Thank you for your continued support!

All the best,



Tracy Camp

Executive Director and CEO
Computing Research Association (CRA)

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Computer Science

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Computer Science

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Computer Science

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Computer Science and Engineering

University of California, Riverside
Computer Science and Engineering

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University of Cincinnati
School of Information Technology

University of Colorado Boulder
Computer Science

University of Delaware
Computer and Information Sciences

University of Florida
Computer and Information Science and Engineering

University of Illinois Chicago
Computer Science

University of Illinois Urbana-Champaign
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University of Kansas
Electrical Engineering and Computer Science

University of Kentucky

Department of Computer Science

University of Maryland

Computer Science
College of Information Studies

University of Maryland, Baltimore County

Computer Science and Electrical Engineering
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University of Massachusetts Lowell

Richard A. Miner School of Computer and Informaiton Sciences

University of Michigan

Computer Sciences and Engineering
Electrical and Computer Engineering
School of Information

University of Michigan, Dearborn

Computer and Information Science

University of Missouri – Kansas City

Division of Computing, Analytics, and Mathematics

University of Nebraska – Lincoln

School of Computing

University of New Mexico

Department of Computer Science

University of New South Wales

School of Computer Science and Engineering

University of North Carolina at Charlotte

College of Computing and Informatics

University of North Carolina at Chapel Hill

Department of Computer Science

University of North Carolina Greensboro
Computer Science

University of North Texas
Computer Science and Engineering

University of Notre Dame
Computer Science and Engineering

University of Pennsylvania
Computer and Information Science

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Computer Science
Department of Informatics and Networked Systems

University of Rochester
Computer Science

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Computer Science and Engineering

University of Southern California
Thomas Lord Department of Computer Science
Information Sciences Institute

University of Southern Mississippi
School of Computing Sciences and Computer Engineering

University of Texas at Arlington
Computer Science and Engineering

University of Texas at Dallas
Computer Science

University of Toledo
Electrical Engineering and Computer Science

University of Toronto
Department of Computer Science
Faculty of Information

University of Utah

Scientific Computing and Imaging Institute

University of Virginia

Department of Computer Science

University of Washington

Paul G. Allen School of Computer Science and Engineering
Information School

University of Waterloo

Cheriton School of Computer Science

University of West Florida

Computer Science

University of Wisconsin-Madison

Computer Science

Vanderbilt University

Computer Science

Virginia Commonwealth University

Computer Science

Virginia Tech

Computer Science

Wake Forest University

Department of Computer Science

Washington University in Saint Louis

Computer Science and Engineering

Wayne State University

Computer Science

Wellesley College

Computer Science

West Virginia University

Lane Department of Computer Science

Yale University

Computer Science

By the numbers

Degree programs

**Computer engineering
 (computer systems):** MS, PhD

Computer science:
 BS, MCS*, MS, PhD

Computer systems engineering: BSE

**Data science, analytics and
 engineering:** PhD

Engineering management: BSE*

Industrial engineering:
 BSE, MS*, MS/MBA, PhD

Informatics: BS

**Robotics and autonomous systems
 (artificial intelligence):** MS

Software engineering: BS*, MS

**immersion and online*

Research centers

Arizona Blockchain Applied Research
 Center (AZ BARC)

ASU-Mayo Center for Innovative
 Imaging (AMCII)

Biodesign Center for Biocomputing,
 Security and Society (BSS)

Center for Accelerating Operational
 Efficiency, A Department of Homeland
 Security Center of Excellence (CAOE)

Center for Assured and Scalable Data
 Engineering (CASCADE)

Center for Cognitive Ubiquitous
 Computing (CUbiC)

Center for Cybersecurity and Trusted
 Foundations (CTF)

Center for Embedded Systems (CES)

Secured, Trusted and Assured
 Microelectronics (STAM) Center

U.S. News & World Report rankings

Graduate programs

#12 Industrial engineering,
 Online Master's Program

#18 Industrial engineering

#33 Computer engineering

#43 Computer science

Undergraduate programs

#20 Computer engineering

#23 Artificial intelligence
(computer science specialty)

#28 Cybersecurity
(computer science specialty)

#54 Computer science

Faculty

72 Tenured/tenure track
 faculty members

29 Lecturers and
 professors of practice

Fall 2022 Enrollment

11,368 total students

8,364 On-campus

3,004 Online

7,596 Undergraduate

3,473 Master's

299 Doctoral

**estimated 1st day enrollment data*

Awards

21+ early career or
 NSF CAREER awards

10+ fellows of societies
 and institutes, including the
 National Academy of Engineering

\$35M awarded FY2021

**One Regents and one
 President's Professor,**
 two of the highest honors
 awarded to ASU faculty members

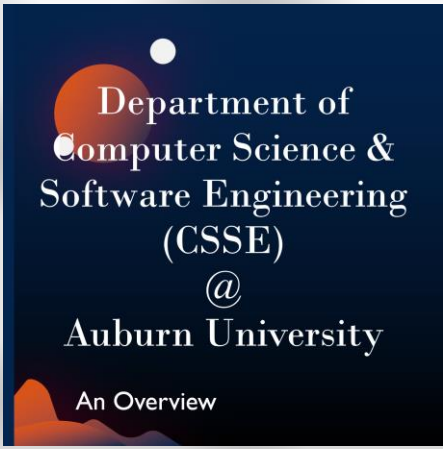
Research FY2021

\$174M proposals

\$27M expenditures

The School of Computing and Augmented Intelligence,
 part of the Ira A. Fulton Schools of Engineering, is aspiring for
 long-term targets, including:

- Establishing national research leadership with local and regional impacts with \$350 million in research.
- Fostering comprehensive partner engagement with \$50 million in philanthropic gifts.



eng.auburn.edu/csse

- Established 1984
- Highest ranked CS department in Alabama
- 4th among SEC schools & 11th in the Southeast
- Top-50 department among US public universities
- In the top 15% of public & private CS departments U.S. News World Report rankings

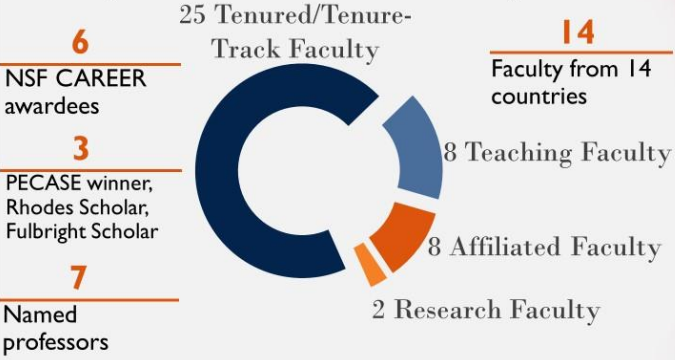
Undergraduate Degrees

- BS in Computer Science
- Bachelor of Software Engineering
- Bachelor of Computer Science Online
- 1120+ undergraduate students

Graduate Degrees

- PhD, Computer Science & Software Engineering
- MS, Computer Science & Software Engineering
- MS, Cybersecurity Engineering
- MS, Data Science & Engineering
- MS, Artificial Intelligence Engineering (Fall 2024)
- 110+ PhD students
- 120+ MS students

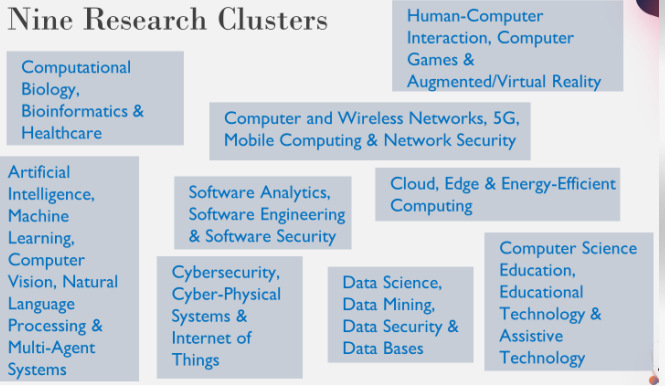
Faculty: International & Accomplished



Engaged students!

- Association for Computing Machinery (ACM) Student Chapter
- TigerDev Video Game Club
- Digital CTF Team – Ethical Hacking
- CS Makerspace Club
- ACM Programming Team
- AuburnHacks Annual Hackathon
- Undergraduate Research Fellows

Nine Research Clusters



Annual Degree Production



eng.auburn.edu/ai-au

Cybersecurity programs hold three NSA/DHS National Centers of Academic Excellence designations



Cybersecurity Research

Research Sponsors

- NSF
- NIH
- Dept. of Defense
- Dept. of Energy
- Dept. of Agriculture
- Industry
- Foundations

Illustrious Alumni

- CIO, Dept. of Health & Human Services
- Head, UX Research, Disney
- Vice Presidents, Aflac, Dell Technologies, Morgan Stanley, Visa International
- Director, Meta
- Venture Capitalists
- Startup Founders

AUGUSTA UNIVERSITY

SCHOOL OF COMPUTER AND CYBER SCIENCES



Faculty
49 **14**

Full time Adjunct

Enrollment
815

Undergrad/graduate students

Scholarship
Endowment
\$2.3M

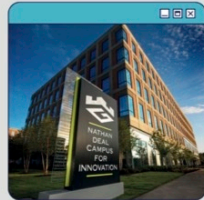
New

Rattner Endowment Computer Science Scholarship

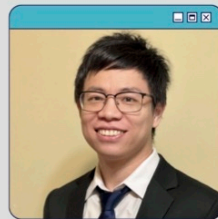
Research Highlights



Dr. Clément Aubert won a \$582,562 grant from the National Science Foundation (NSF) for his project "Concurrency in Reversible Computations". This three-year project will advance the development and adoption of reversible languages, which will allow the creation of energy-efficient systems and protocols and improve security and reliability thanks to built-in forensic capabilities.



Augusta University is the lead institution on a \$1M NSF Engines Development Award to advance cybersecurity technologies in the Central Savannah River Area (GA, SC). The project aims to pursue use-inspired research and innovation in cybersecurity, cyber-physical systems, edge computing, and the Internet of Things (IoT), foster workforce development, and transition research to practice, leading to the creation of new businesses in the area.



Dr. Shungeng Zhang has been awarded a \$175,000 NSF grant for his project entitled "An Experimental Infrastructure to Reduce Latency Long-tail in Realtime Stream Processing". The project addresses the performance challenges in web-facing applications that adversely impact online businesses and consumers. The project develops an experimental infrastructure and pursues research aimed at achieving superior performance and high resource efficiency for web-facing applications.



Dr. Weiming Xiang secured an NSF grant for a collaborative research project, entitled "Foundations of Qualitative and Quantitative Safety Assessment of Learning-enabled Systems" in the amount of \$270,913. This project is a joint effort with Dr. Dung Tran at the University of Nebraska-Lincoln, who leads the project with their own budget.

New Faculty

We proudly welcome 7 new faculty members for Fall 2023!



Hisham Daoud



Gianluca Zanella



Shiwei Fang



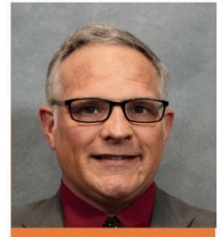
Mohamed Ibrahim



Jiejiang Zhao



Meikang Qui



Jonathan Sloan

Degrees Offered

6

Undergraduate

- Cybersecurity
- Cyber Operations
- Computer Science
- Information Technology
- Cybersecurity Engineering
- Biomedical Systems Engineering

2

Masters

- Computer Science
- Information Security Management*

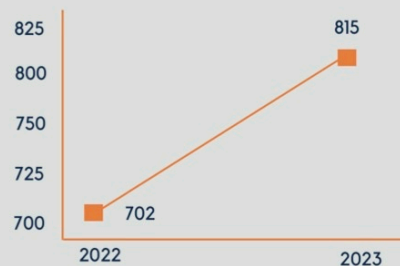
1

PhD

- Computer & Cyber Sciences

Student Growth

School of Computer and Cyber Sciences is the fastest growing college at Augusta University with 15% increase in enrollment in Fall '23.



Scholarships



*All courses of the MS-ISM program are taught online asynchronously.



SCCS is designated Center of Academic Excellence in Cyber Defense by the NSA and CISA.



Founded in 1889 and affiliated with Columbia University, Barnard College aims to provide the highest-quality liberal arts education to promising and high-achieving young women, offering the unparalleled advantages of an outstanding residential college in partnership with a major research university. With a dedicated faculty of scholars distinguished in their respective fields, Barnard is a community of accessible teachers and engaged students who participate together in intellectual risk-taking and discovery. Barnard students develop the intellectual resources to take advantage of opportunities as new fields, new ideas, and new technologies emerge. They graduate prepared to lead lives that are professionally satisfying and successful, personally fulfilling, and enriched by a love of learning.

Through Barnard’s partnership with Columbia University, Barnard students have had the opportunity to major in computer science. But Barnard did not have a program of its own until 2019 and a relatively small number of students majored in Computer Science. Computer Science at Barnard has grown dramatically since then. It is currently among the six largest majors at Barnard, and an increasing number of students of all majors take Computer Science classes.



Emily Black

Joined Fall 2023

Assistant Professor

Ph.D., Carnegie Mellon University, 2022

Antonio Moretti

Joined Fall 2022

Roman Family Teaching and Research Fellow

Ph.D., Columbia, 2020

Brian Plancher

Joined Fall 2022

Assistant Professor

Ph.D., Harvard, 2022

Mark Santolucito

Joined Fall 2020

Assistant Professor

Ph.D., Yale, 2020

Lisa Soros

Joined Fall 2022

Roman Family Teaching and Research Fellow

Ph.D., U. Central Florida, 2018

Rebecca Wright

Joined Spring 2019

Director and Druckenmiller Professor

Ph.D., Yale, 1994

Recent Highlights:

- Created a Distinguished Lectures in Computer Science series and a Computer Science Seminar series.
- Developed and ran an undergraduate Computer Science summer research program with over 50 students per year working on mentored research projects on topics across computing and its applications.
- Received funding from the National Science Foundation for projects including “Real-Time, Mixed-Integer Model Predictive Control via Learned GPU-Acceleration” and “Computing Fellows Program: Increasing Meaningful Computing Engagement Across Disciplines.”
- Co-sponsor of the DivHacks Hackathon, the annual diversity hackathon organized by Columbia’s Womxn in Computer Science club.
- The Vagelos Computational Science Center facilitates the understanding, exploration, and use of computational science and technology across disciplines through workshops and other programs.

New Tenure-Track Faculty Hires



Yincheng Jin
PhD, University at Buffalo
Research: AI-powered Mobile Computing, IoT Security, Intelligent HCI, Smart Health



Dali Ismail
PhD, Wayne State University
Research: Internet of Things, Mobile and Wireless Networks, Embedded and Real-time Systems



Zhen Xie
PhD, University of Chinese Academy of Sciences
Research: HPC, ML Algorithms, System-level Performance Optimization, Scientific ML



Eric Atkinson
(Starting Jan. 2024)
PhD, Massachusetts Institute of Technology
Research: Programming Language Tools for Uncertainty, Probabilistic PL, Nondeterministic PL, Program Analysis, Formal Verification, Reasoning about Uncertainty



Patrick H. Chen
(Starting Jan. 2024)
PhD, University of California Los Angeles
Research Areas: Model Compression for Big ML Models, Hardware Software Co-design, Reliable and Robust ML, Natural Language Processing

Our Student And Faculty By Numbers

1460
Students

694
Undergraduate Students

766
Graduate Students

574
MSCS Students

111
MSIS Students

81
PhD Students

38
Full-time Faculty

1
IEEE Fellow

2
NAI Fellows

2
SUNY Distinguished Professors

8
NSF CAREER Awardees

8
Full Professors

10
Associate Professors

11
Assistant Professors

7
Lecturers

New Research Awards

- **Jeremy Blackburn**, “SaTC: TTP: Medium: iDRAMA.cloud: A Platform for Measuring and Understanding Information Manipulation”, NSF, \$674,999, 2023-2026.
- **Jayson Boubin, Ken Chiu**. “Autonomous UAVs for Real-time Hyperspectral Phenomena Detection,” AFRL via Cornell Univ., \$100,000, 2023-2024.
- **Kyoung-Don Kang**. “CSR: Small: Enhancing Timeliness and Power-Efficiency of Real-Time Data Services”, NSF, \$599,084, 2023-2026.
- **Guanhua Yan**. “EAGER: Education DCL: Building a Capture-The-Flag Platform for 5G Network Security”. NSF, \$300,000, 2024-2025.
- **Lijun Yin**. “Machine learning based multimodal medical information disentanglement for prediction, diagnosis, and evaluation”, Massachusetts General Hospital, \$90,050, 2023-2026

More Highlights

- **\$3.5 million NSF Cybercorps® Scholarship for Service (SFS)** grant funds the second cohort of 8 new SFS scholars.
- **Masters in Information Systems (MSIS)** program successfully launched.
- **Artificial Intelligence and Cybersecurity Tracks** added to BS in Computer Science.
- **Jeremy Blackburn** won the Watson College Recognition Award for Early-Stage Distinguished Research.
- **Kartik Gopalan** won the Chancellor’s Award for Excellence in Faculty Service.
- **CS Department now has two Associate Chairs:** **Dmitry Ponomarev** for Administration and Undergraduate Programs, and **Kartik Gopalan** for Research and Graduate Programs.



bu.edu/cs



@BUCompSci



New Faculty Members



Andrea Lincoln
Assistant Professor

researches theory using networks of reductions, providing shared explanations for the complexity of specific computational problems



Sabrina Neuman
Assistant Professor

researches computer architecture design informed by explicit application-level and domain-specific insights with a focus on robotic applications



Eran Tromer
Professor

researches ways to build robust distributed computer systems for privacy & integrity and resilience of computing platforms to data theft and tampering



Nathan Mull
Lecturer



Andrew Wood
Lecturer



Preethi Narayanan
Lecturer

CS in Stats

45

faculty members

14

staff members

1500+

students

161

undergraduate minors

1316

undergraduate majors

222 of our BA candidates are joint majors.

42

BA/MS students

276

masters candidates in Computer Science (General, Data-Centric Computing, Cybersecurity) & in Artificial Intelligence

126

PhD candidates



Research Achievements

- **Renato Mancuso** received a National Science Foundation (NSF) CAREER Award, which will support his research in the Cyber-Physical Systems Lab.
- **Sharon Goldberg** and **Leo Reyzin** and their co-authors release RFC 9381 – Verifiable Random Functions (VRFs), a request for comments publication from the Internet Research Task Force.
- **Vasia Kalavri** was awarded a Computer and Network Systems NSF grant for her project, “Small: Scaling Graph Machine Learning Workloads on Modern Storage.”
- **Mark Crovella** was awarded two Collaborative Research NSF awards: “Large Scale Analysis of Configurations and Management Practices in the Domain Name System” and “MM-1C: Methods for Active Measurement of the Domain Name System.”



Educational Innovations

- **Jonathan Appavoo** built an innovative, containerized lecture/lab education environment to teach the basics of computer science using Red Hat OpenShift.
- BU CS one of five inaugural partners selected by the CRA to participate in the new UR2PhD National Virtual Computing Research Mentor Program aimed at encouraging underrepresented minorities to consider doctoral studies. **Peter B. Golbus** and **Sabrina Neuman** are co-directing the program.



New Facilities

In January 2023, BU CS relocated to its new facility at the **BU Center for Computing and Data Sciences**. The move has equipped the department with seven floors of space, including plenty of lab space, graduate student offices, respective study lounges for masters and undergraduate students, and outdoor meeting spaces. Most importantly, there is space for the department to grow for years



Student Spotlights

- PhD student **Satchit Sivakumar** was named an Apple AI/ML scholar for his work on the foundations of privacy-preserving machine learning and its broader connections to responsible science.
- PhD student **Shlomi Hod** was invited to Washington D.C. to present a workshop on the ethical, legal, and societal implications of AI. The workshop was based on a BU course that Hod co-teaches with Tel Aviv University, the Technion and Bocconi University called “Responsible AI, Law, Ethics, and Society.”



2023's New Faculty:



Archana Venkataraman

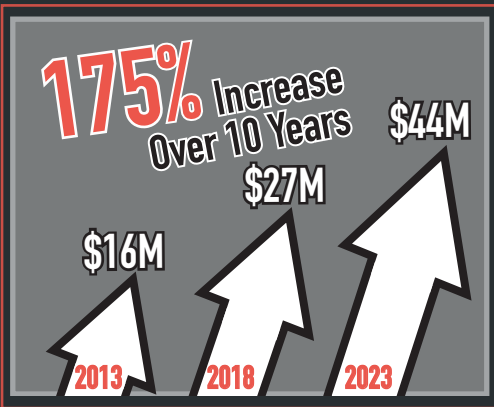
The intersection of medical imaging, AI, and clinical neuroscience.



Kayhan Batmanghelich

Medical vision, AI, probabilistic modeling, data analysis, multi-modal learning.

RESEARCH FUNDING



Recent Society Fellows:

Chen Yang
AIMBE

Siddharth Ramachandran
APS

Vivek Goyal
AAAS

Ioannis Paschalidis
IFAC

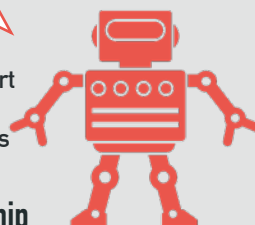
ROBOTICS AT BU: among the nation's best

ROBOTICS

and Autonomous Systems Center:
BU's Brand-New R&D Space

- State-Funded, State-of-the-Art
- Emphasis on AI in Robotics
- Soft Robotics for Medical Apps

Rated #6 in the U.S. by Analytics Insight



Master of Science

in Robotics & Autonomous Systems

+ Full-Time, Paid Internship at a Top Robotics Company in Boston

Amazon Robotics, Boston Scientific, iRobot, and more

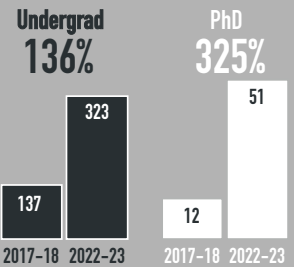
ECE at a Glance

Enrollment

474 undergraduate
178 masters
164 doctoral

Computer Engineering Program Growth

Enrollment Increase Over 10 Years:



Faculty in Numbers

31 Full Professors
13 Associate Professors
9 Assistant Professors

13% Female

10% URM

Faculty Honors

40 Average h-index

8.5K Avg # of Citations

30 Early Career Awards

50 Society Fellows

4 National Academy Members

3 current/former IEEE society presidents

Faculty Highlights

New Faculty



Aldo Pacchiano
Assistant Professor



Joshua Peterson
Assistant Professor



Lisa Wobbes
Clinical Assistant Professor



Xuezhou Zhang
Assistant Professor

Onboarded since 2020



Tanima Chatterjee
Clinical Assistant Professor



Brian Cleary
Assistant Professor



Kevin Gold
Associate Professor of the Practice



Kira Goldner
Assistant Professor



Leonidas Kontothanassis
MassMutual Professor of the Practice



Allison McDonald
Assistant Professor



Ngozi Okidegbe
Assistant Professor



Krzysztof Onak
Assistant Professor



Pawel Przytycki
Assistant Professor



Mayank Varia
Associate Professor



Langdon White
Clinical Assistant Professor

CDS Academic Programs

- Undergraduate Major in Data Science
- Undergraduate Minor in Data Science
- Graduate PhD in Computing & Data Science
- Graduate Professional MS in Data Science
- Graduate Professional MS in Bioinformatics

Wexler PhD Fellows

BU trustee Peter Wexler has made a leadership gift in support of graduate fellowships in Computing & Data Sciences at BU. The goal of the fellowship is to prepare and train students to address complex societal problems in a data-driven way and attract tenure-track faculty.

Out of a pool of 250+ applicants, three Wexler Fellows—**Wanli Cheng, Theodore Tsilvis, and Heila Preceel**—were appointed.

By the Numbers

- ### Faculty & Research
- **4** rounds of faculty searches, yielding **15** core hires: **9** tenure-track; **1** tenured; **5** teaching
 - **51** faculty members with appointments in or affiliation with CDS from **24** departments
 - **2** endowed professorships in AI and in Environmental DS and **3** endowed PhD fellowships
 - Governance transitioned in 2022 from “founding members” to **30** faculty with appointments
 - **\$4M** gift from MassMutual (**\$2M** in endowment) to set up co-Lab on Responsible Use of Data)
 - **\$3M** of grants and contracts from National Science Foundation, foundations, and industry supporting Hub for Civic Tech
 - **\$65M** endowment to support named joint professorships and pre/postdoctoral fellows

- ### Students & Curriculum
- **23** PhD students (52% women); **28** MS students registered for inaugural cohort in F'23
 - **78** inaugural matriculates in F'22 + 89 in fall 2023 (+**170** internal transfers from BU since)
 - **317** majors (40% women) in DS; **131** minors in DS from **31** different programs
 - **56** undergraduate courses in inventory; **30** offered in AY'23 (12 in F'22 + 18 in S'23)
 - **1,010** undergraduate students enrolled in S'23, up from **576** in F'22
- A = Annual Year, F = Fiscal Year, S = School Year

Experiential Learning with BU Spark!

BU Spark! is an **innovation** and **experiential learning** lab for computing, data science, and engineering projects housed at the Boston University Faculty of Computing & Data Sciences. Spark! supports **student innovation** and **engagement** in **applied research** and **real-world projects** while fostering an inclusive and interdisciplinary community.

2,848+ students **725+** semester projects **260+** innovation fellows **60+** mentors **25** student clubs **4** hackthons



Generative AI Assistance Policy

BU Faculty of Computing & Data Sciences adopted the **Generative AI Assistance Policy** in spring 2023. The policy states: Students should learn how to use AI text generators and other AI-based assistive resources (collectively, AI tools) to **enhance rather than damage** their developing abilities as writers, coders, communicators, and thinkers. Instructors should ensure **fair grading**. View the policy: bit.ly/BUGAIAIPolicy.

Our New Home

- **19** floors and **305** feet tall
- **8** green spaces, **1** pavilion
- **3** academic units and **1** research institute
- **31** geothermal wells **1,500** feet deep
- **0** fossil fuels, **0** carbon, **0** waste

COMPUTER SCIENCE

Degree Offered

- Bachelor of Science in Computer Science*
- Bachelor of Arts in Computer Science
- Bachelor of Science in Software Engineering**
- Master of Science in Computer Science

* Recently Re-accredited by Computing Accreditation Commission of ABET

** Recently Accredited by Engineering Accreditation Commission of ABET

Specializations Offered

- Digital Forensics Specialization
- Computational Data Science Specialization
- Business Systems Specialization

Interdisciplinary Program Offered

- Master of Science in Data Science
- Doctor of Philosophy in Data Science

Faculty News

- **Dr. Sankar Roy** is planning to collaborate with one of our industry partners for his faculty improvement leave. Specifically, he will be working with Digital Forensics (DF) professionals to explore the state-of-the-start DF practices and to work on development of cybersecurity tools for the community.
- **Dr. Michael Decker** has received a 3-year NSF research grant (~\$750K), titled, "Collaborative Research: CCRI: New: Syntactic Differencing Infrastructure for Software Evolution Research". The project will create a new software infrastructure, srcDiff (SouRce Code DIFFerencer) that can directly support research on how software changes and evolves over time. The core of the infrastructure is a highly scalable syntactic differencing algorithm that models a programmer's viewpoint of software change. The infrastructure also supports querying and exploration of changes and is used to determine which programming language syntactic structures change between two source code versions.

Some of Recent Publications

- "Human leukocyte antigen distributions do not share a copula across sub-populations," *Experimental Results*, 2022. (Dr. Green.)
- "Semantically-enhanced Topic Recommendation Systems for Software Projects," *Empirical Software Engineering*, 2023. (Dr. Heydarnoori)
- "GIRT-DATA: Sampling GitHub Issue Report Templates," 20th IEEE/ACM Int'l Conf. on Mining Software Repositories, 2023. (Dr. Heydarnoori)
- "An Improved Anonymous Identifier," 20th Int'l Symp. On Digital Forensics and Security, 2022 (Dr. Kresman)
- "Performance Implications of Financial Resource Allocation in New Hiring: The Case of Major League Baseball," *Management Decision*, 2023 (Dr. Lee)
- "Smart Contract Assisted Privacy-Preserving Data Aggregation and Management Scheme for Smart Grid," *IEEE Trans. On Dependable and Secure Computing*, 2023 (Dr. Li)
- "Incentive Mechanism Design for Joint Resource Allocation in Blockchain-Based Federated Learning," *IEEE Trans. On Parallel and Distributed Systems*, 2023 (Dr. Li)
- "Deep Learning for UAV Network Optimization," *Deep Learning and Its Applications for Vehicle Networks*, 2023 (Dr. Niu)
- "NoiseCAM: Explainable AI for the Boundary Between Noise and Adversarial Attacks," 2023 IEEE Int'l Conf. on Fuzzy Systems, 2023 (Dr. Niu)
- "An Onboard IoT-Based Communication System for Autonomous Vehicles," 24th Int'l Conf. on Internet of Things, 2023 (Dr. Rajaei)
- "FineObfuscator: Defeating Reverse Engineering Attacks with Context-sensitive and Cost-efficient Obfuscation for Android Apps," *IEEE Int'l Conf. on Electro Information Technology*, 2022 (Dr. Roy)
- "Grow-push-prune: Aligning deep discriminants for effective structural network compression," *Computer Vision and Image Understanding*, 2023 (Dr. Tian)

For more information

Department of Computer Science

419-372-2337 | Email: bgcs@bgsu.edu | Website: bgsu.edu/cs



DEPARTMENT OF COMPUTER SCIENCE

<https://cs.byu.edu/> @byucs



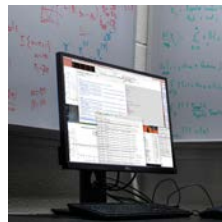
Recent Accomplishments



Dr. David Wingate and Dr. Nancy Fulda were awarded \$1M from the NSF to spearhead the construction of a high-performance GPU cluster to solve large-scale natural language processing (NLP) tasks.



Kirsten Chapman, 2023 Finalist for the CRA Outstanding Undergraduate Research Awards for her work investigating how to make social media safer for people on the autism spectrum.



The department now offers a Bachelor of Science in Machine Learning in order to prepare students for graduate research and industry positions in this field.



BYU animation students won a student Emmy for short film "Cenote". Student-produced short films have been nominated for the student Emmy 20 times in the last 21 years.

COMPUTER SCIENCE AT BUCKNELL

FACULTY HIGHLIGHTS

NEW APPOINTMENT



LILY ROMANO '20
Computer Science Lab Director and Instructor
 Supports learning and instruction in computer science courses and laboratories, teaches introductory lab courses and supports student projects.
M.S., Georgia Institute of Technology

DATA SCIENCE FELLOW



BRIAN KING
Associate Professor of Computer Science and Faculty Co-Director, Data Science Initiative, College of Engineering
Research Interests:
 Bioinformatics, data mining, machine learning, user interface design and usability, computer science education
Ph.D., State University of New York at Albany

NEW APPOINTMENT



SING CHUN LEE
Assistant Professor of Computer Science
Research Interests:
 Augmented/mixed reality, geometry processing, computer science education
Ph.D., Johns Hopkins University

ENDOWED PROFESSORSHIP



DARAKHSHAN MIR
John P. and Mary Jane Swanson Professor in Engineering and the Sciences and Associate Professor of Computer Science
Research Interests:
 Privacy, societal implications of computing, making computing education accessible
Ph.D., Rutgers University

STUDENT HIGHLIGHTS



TWITY GITONGA '24 COMPUTER SCIENCE & ENGINEERING

- Has studied a period of historical theatre performance, explored the design of artificial intelligence systems in the context of Blackness and created a new 3D ecological model of insights to show sexual assault in universities
- Co-founder of the Bucknell Advocates for Diversity student group
- Named a Fremont Scholar, a prestigious award given to international students



AMANDA AGAMBIRE '26 COMPUTER SCIENCE

- Researched if wearable sensor-based gait recognition systems that identify a person by the way they walk have a demographic bias
- Analyzed datasets and developed and trained an algorithm that detects patterns to show if certain populations are consistently mis-authenticated or misidentified
- Taught herself data-science tools, including NumPy, Pandas and Scikit-learn to conduct this research

“We have a lot of research opportunities that expose undergraduate students to industry-level problems and challenges.”

20

Our average number of students per class



Students regularly gather in our welcoming student lounge



15
Faculty



Twice a semester we hold ice cream or pancake socials, with faculty serving the students

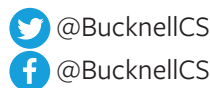
230

Declared CS Majors



CONTACT US:

Computer Science Department
 csci@bucknell.edu
 570-577-1394



Bucknell
UNIVERSITY

College of Engineering

Carleton College

Northfield, Minnesota
cs@carleton.edu
<http://cs.carleton.edu/>



Carleton College is a private, coeducational, highly selective liberal arts college with approximately 2,000 students. Carleton is located in Northfield, MN, a two-college town about 45 miles south of the Twin Cities of Minneapolis and St. Paul. Nationally recognized as a top college for undergraduate teaching, Carleton is known for its academic rigor, intellectual curiosity, and sense of humor.

Department Overview

The department has ten tenure-track full-time faculty, one lecturer, several visiting faculty members, and an experienced rock-star full-time system administrator. We welcomed Tanya Amert (real-time systems) to the department this fall, and we are recruiting an additional tenure-track faculty member. Computer Science is the largest major at Carleton; the department typically graduates over 70 majors annually. We are delighted that over 60% of all Carleton students (of all majors) take at least one course in the CS department, and many of our courses are taken by students from a wide variety of majors and have interdisciplinary themes and applications.

Many graduates go on to industry jobs, from large companies (e.g., Google, Amazon, and Target) to small startups. Significant numbers of our majors also go on to graduate programs—including current and recent Ph.D. students at Cornell, Harvard, Johns Hopkins, Michigan, Minnesota, Northwestern, Washington, and Wisconsin, among others.

Student Experiences

The department has a robust and active weekly seminar series (complete with tea!). We introduced an off-campus study program centered on the history of computing, based in Cambridge (England), in 2019. The department supports a large cohort of students in attending the Grace Hopper Celebration and Tapia Conference every year.

There are several active student groups on campus. Lovelace works to increase gender diversity in CS and technology. A Hack4Impact chapter, which connects student software developers to socially responsible entities to create tools for social change, was founded in 2020.

Research Highlights

Faculty have active research programs across a wide range of areas in computer science, often with interdisciplinary collaborators. Faculty have received external funding from the NSF (multiple grants, including a recent NSF CAREER Award), as well as from internal grants.

Students regularly collaborate with faculty on research and present their research at top quality international conferences. A number of recent students have received prestigious awards including the Goldwater Scholarship, CRA Outstanding Undergraduate Research Award, and NSF Graduate Research Fellowships.

Carleton CS Faculty, 2023–2024



Eric Alexander
data visualization



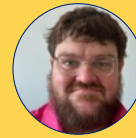
Tanya Amert
real-time systems



Amy Csizmar Dalal
HCI, networks



Josh Davis
geometry, stats, geology



Tom Finzell
CS education



Matt Lepinski
applied cryptography



David Liben-Nowell
comp'l. social science



Dave Musicant
ML, data mining



Sneha Narayan
social computing



Layla Oesper
computational biology



Jeff Ondich
NLP, security



Anna Rafferty
ML/AI, comp'l. cog. sci.



Anya Vostinar
artificial life

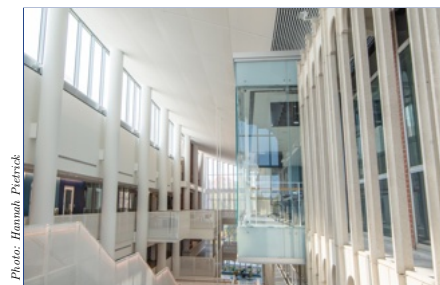


Photo: Hannah Perriek

In 2020, our department moved into significantly renovated space in Carleton's Olin Hall. This 48-seat, 24-computer teaching lab is cantilevered over the main atrium of Carleton's new integrated science complex.



It's Happening Here...

Carnegie Mellon University has led the world of computer science since the field's inception. We were instrumental in defining the scope and potential of CS, and among the first universities to offer a computer science degree. We embrace a broad view of the field, with seven degree-granting departments that focus not only on theory, but also on specific areas like robotics, language technologies and more.

TOP RANKINGS

#1 *undergraduate specialties*

U.S. News and World Report

- Artificial Intelligence
- Cybersecurity
- Mobile/Web Applications
- Software Engineering

STUDENT ENROLLMENT

2,800+

982 undergraduate

1,189 master's

708 doctorate

53% International

47% U.S.

Our Departments

- Computer Science
- Human-Computer Interaction
- Software and Societal Systems
- Computational Biology
- Machine Learning
- Robotics
- Language Technologies



Bachelor's Degrees

- Artificial Intelligence
- Computational Biology
- Computer Science
- Human-Computer Interaction
- Robotics

Ph.D. Programs

- Algorithms, Combinatorics and Optimization
- Computational Biology
- Computer Science
- Computer Science/Neural Basis of Cognition
- Human-Computer Interaction
- Language and Information Technologies
- Machine Learning
- Machine Learning and Public Policy
- Neural Computation and Machine Learning
- Pure and Applied Logic
- Robotics
- Societal Computing
- Software Engineering
- Statistics and Machine Learning

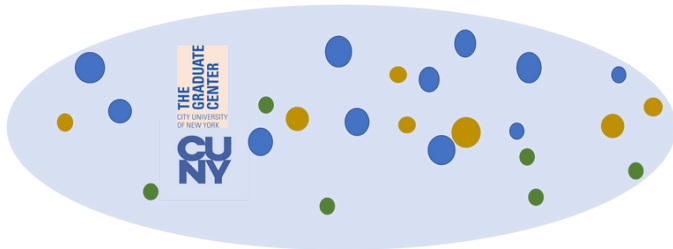
Master's Degrees

- Artificial Intelligence and Innovation
- Automated Science: Biological Experimentation
- Computational Biology
- Computational Data Science
- Computer Science
- Computer Vision
- Educational Technology and Applied Learning Science
- Human-Computer Interaction
- Information Technology - Privacy Engineering
- Intelligent Information Systems
- Language Technologies
- Machine Learning
- Product Management
- Robotics
- Robotic Systems Development
- Software Engineering
- Software Engineering - Scalable Systems
- Software Engineering - Embedded Systems

Some Notable Things That Happened Here

- Nearly half of our incoming class is female.
- We created the first artificially intelligent computer program more than 60 years ago.
- We were the first wired campus, then the first fully wireless campus.
- We're the first college to offer a bachelor's degree in artificial intelligence.
- Our Robotics Institute, Human-Computer Interaction Institute and Machine Learning Department were the first of their kind.
- Dozens of startup companies spin out of SCS each year.

Computer Science Consortia @ City University of New York

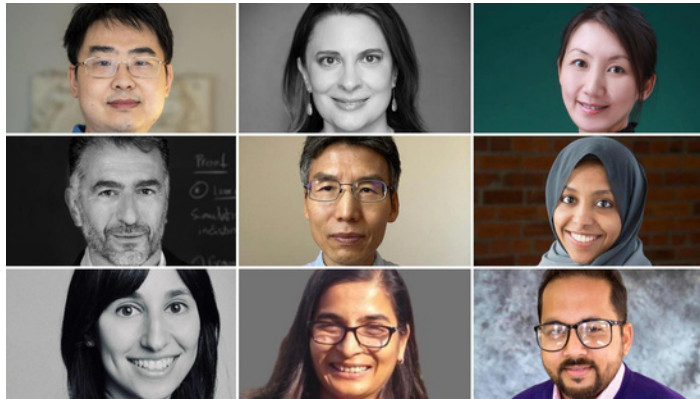


11 senior colleges, 7 community colleges,
6 professional schools, and the **Graduate Center**

The City University of New York (CUNY) is the largest urban university system in the US.

25 institutions: including 11 senior, 7 community and 6 professional schools + **Ph.D. granting CUNY Graduate Center**
> 220K degree-seeking & >200K cont. ed students
> 20% of students from each of ethnic groups of Black, White, Hispanic and Asian/Pacific Islander!
~ 50% undergrad from household < \$30,000 in income

The Computer Science Consortia of CUNY includes more than **90** faculty from **11** CUNY campuses across five boros of NYC, with a Computer Science Doctoral Program at CUNY Graduate Center, and offers state-of-the-art research and educational opportunities in both Computer Science and Data Science in the heart of Manhattan. Faculty research area of CUNY CS include Artificial Intelligence, Big Data Analysis, Computer Networks, Network Security, Multimedia Systems, Cloud Computing, Programming Languages, Computational Biology, Signal/Image Processing, Computer Vision, Logic, Machine Learning, Natural Language Processing, Algorithms and Theory, and many more.



Google x CUNY CyberNYC

Google recently invests **\$3M** in CUNY for Cybersecurity Research; First year funding for **7** projects of **9** faculty from **6** CUNY campuses, in topics of cryptography, ethical network monitoring and forensics, misinformation detection, software security, quantum system, etc. The awardees are Professors S. Debroy, N. Fazio, R. Gennaro, S. Jain, P. Ji, S. Levitan, S. Saeed, X. Zhang, L. Zhao.

Distinguished GC faculty



Dr. Sergei Artemov

Distinguished Professor, interested in Logic, automated deduction and verification

Dr. Lev Manovich

Professor, interested in social and cultural computing, data visualization, computers & society

Executive Officer: Dr. Ping Ji
email: compsci@gc.cuny.edu

Recent Faculty Activities

- Dr. Lei Xie has been awarded five-year NIH funding to develop AI methods for multi-omics data integration and drug discovery of Alzheimer's disease and exceptional longevity.
- Dr. Alexey Ovchinnikov received NSF CCF grant with the topic of Validated Soft Approaches to Parametric ODE Solving



Dr. Susan Epstein is a member of the ACM/IEEE/AAAI Steering committee. Her project, "Robots in the Garden: Artificial Intelligence and Adaptive Landscapes," received the Best Paper Award 2023 for *scientific excellence* from the Journal of Digital Landscape Architecture.



Dr. Anita Raja was elected AAAI 2023 Senior member. She was also invited by the NSF to serve on the NSF Computer and Information Science and Engineering (CISE) Committee of Visitors (COV).

Scan this QR code (or click [here](#)) to find out more about Computer Science at CUNY's Graduate Center!



Support CUNY GC CS



SCHOOL OF COMPUTING CLEMSON UNIVERSITY

FALL 2023

FACULTY AND SCHOOL HIGHLIGHTS



McQueen Quattlebaum



Virtual Reality Research

- Nathan McNeese was named the new McQueen Quattlebaum Assistant Professor. This professorship helps recognize and reward outstanding scholars and teachers.
- Seven faculty members were promoted: Kelly Caine and Jacob Sorber were promoted to Professor, Guo Freeman, Nathan McNeese and Andrew Robb were promoted to Associate Professor, Nicolas Widman was promoted to Senior Lecturer, and Shuangshuang Jin received tenure.
- Brian Dean has been promoted to the C. Tycho Howle Chair of the School of Computing.
- Research led by Guo Freeman is among the world's first detailed glimpses into how people collaborate in virtual reality through mass-market virtual reality headsets.
- Feng Luo, the Marvin J. Pinson, Jr. '46 Distinguished Professor, helped develop an algorithm used in an international effort to sequence the human reference genome. This was reported in the journal Nature.

STUDENT HIGHLIGHTS



Drummer to SpaceX



Fullbright Scholar

- PhD student Jessica Baron received a \$20,000 Scholar Award from the Philanthropic Educational Organization Sisterhood, which provides educational opportunities for women.
- Carter Janse, who recently graduated with a B.S. in Computer Science, has won a Fulbright Scholarship. He is headed to Valencia, Spain, where he plans to teach English and help students get excited about STEM.
- At 72, Dan Roberts is receiving his master's degree from Clemson University exactly 50 years to the day after receiving his bachelor's degree from the same institution. Roberts plans to stay at Clemson for a few more years to pursue a Ph.D. in human-centered computing.
- Justin Cromer, a former session drummer in Nashville, won the Outstanding Senior in the School of Computing award. Justin is set to graduate with a B.S. in Computer Science this December and has already landed a job with SpaceX.

6 New Faculty Members



Andy Duan

Professor
Ph.D., SUNY Stony Brook



Ryan Patrick

Senior Lecturer
M.S., University of Central Florida



Matias Volonte

Assistant Professor
Ph.D., Clemson University



Siyu Huang

Assistant Professor
Ph.D., Zhejiang University



Matthew Re

Lecturer
M.S., Clemson University



Ran Xu

Lecturer
Ph.D., Graduate University of Chinese Academy of Sciences

DEGREES OFFERED

3



8

Undergraduate

BS Computer Science

BA Computer Science

BS Computer Info Systems

Graduate

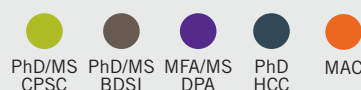
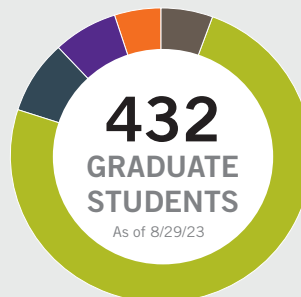
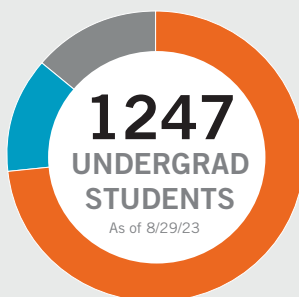
PhD/MS Computer Science

PhD/MS Biomedical Data Science & Informatics

MFA/MS Digital Production Arts

PhD Human-Centered Computing

Master of Applied Computing



FACULTY

55
Total

37
Tenure/
Tenure Track

Department of Computer Science

New Assistant Professors

- **Forrest Davis** is interested in exploring what humans and machines know about language, how they learn language, and how they process it. In particular, his research focuses on cross-linguistic comparisons and systematic gaps between experience with language and knowledge of language.
- **Georgiana Haldeman** studies pedagogical tools, both automated and non-automated, for teaching students important and difficult concepts and skills in computer science.



Forrest Davis



Georgiana Haldeman

Accomplishments

- The groundbreaking for the Benton Center for Creativity and Innovation marked the beginning of construction of the new home for the Department of Computer Science.
- Prof. Grusha Prasad was awarded the Gibson/Fedorenko Young Scholar Prize for her presentation “Studying relative clause representations: a novel parsing model and priming paradigm” at the 36th Annual Conference on Human Sentence Processing (HSP 2023).
- A map of US long-haul fiber-optic infrastructure included in Prof. Joel Sommers’ 2015 paper InterTubes: A study of the US long-haul fiber-optic infrastructure is included in the “Cellphone: Unseen Connections” exhibit which opened in June at the Smithsonian Museum of Natural History.

61

Computer science majors in
the class of 2023

185

Students enrolled in
Introduction to Computing I in
AY 22-2023 (~6% of the Colgate
student body)

10

Tenure-stream faculty
members



@CSatCofC
compsci.cofc.edu



COLLEGE of CHARLESTON

COMPUTER SCIENCE

New Faculty Welcomed

Michael Levet, PhD
Assistant Professor



Yaqin (Mia) Wang, PhD
Assistant Professor



Shashi Bhushan Jha, PhD
Visiting Assistant Professor

CS at CofC: By the Numbers

- 3 floors of classroom, collaboration and research space directly on the Charleston Harbor
- 500+ undergraduate & graduate students
- 1 and only Computing in the Arts program in the state of South Carolina
- 32% female student population
- 6 undergrad degree programs
- 2 graduate degree programs
- 15 faculty members
- 8 research labs

Degrees offered

- | | |
|---------------------------------|--|
| BS Computer Science | BS Data Science |
| BA Computer Science | MS Data Science and Analytics |
| BS Software Engineering | MS Computer & Information Sciences (joint program) |
| BA Computing in the Arts | |
| BS Computer Information Systems | |

Research clusters

- Software Security
- AR/VR Simulation
- Game Design
- Cybersecurity and Blockchain
- Critical Art and Technology
- Isomorphism Testing
- Data Mining and IoT Connectivity
- AI, Music and Interaction
- Computing Education Research
- Machine Learning and Data Science
- UAV Detection and Classification



Academic Snapshot

Faculty

- 32% female faculty
- 23 tenured and tenure-eligible faculty
 - 7 professors
 - 5 associate professors
 - 11 assistant professors
- 4 teaching faculty
 - 2 teaching professors
 - 1 associate teaching professor
 - 1 assistant teaching professor

Students

- Undergraduate - 336 declared majors as of Spring 2023
 - 45% Students of Color (including international students)
 - 31% female
 - 18% Pell grant recipients
 - 14% first-generation
- Graduate - 107 students as of Fall 2023
 - 26% female
 - 34 MS students
 - 73 PHD students

Degrees

- BS/BA in Computer Science
- MS in Computer Science
- PhD in Computer Science



2022-2023 Highlights

Faculty Highlights

- **Gang Zhou** named IEEE Fellow
- **Denys Poshvanyk** named Chancellor Professor
- **Adwait Nadkarni** named W&M Class of 1953 Distinguished Associate Professor

Student/Alumni Highlights

- W&M's Society of Women in Computing wins the student chapter ACM award for outstanding community service for the third time
- W&M students win third place in NSWCDD Artificial Intelligence (AI) and Machine Learning (ML) Innovation Challenge
- PhD Alumnus **Kevin Moran** wins the MobileSoft 2023 Rising Star Award
- PhD Alumna **Lishan Yang** wins the SPEC Kaivalya Dixit Distinguished Dissertation Award 2022

2022-2023 NSF CAREER Award Recipients



Adwait Nadkarni has received support from the National Science Foundation to assist with his project on security compliance for smart products.



Dmitry Evtushkin has received support from the National Science Foundation to advance his study of vulnerabilities in computer microarchitecture.



Oscar Chaparro has received support from the National Science Foundation to develop a theory of how developers make code change decisions.

All faculty hired since 2004 have received a prestigious CAREER Award

ACM & IEEE Honorifics, 3 IEEE fellows Editorships in ACM, IEEE, SIAM journals Flagship conference leadership Best papers yearly

Research Areas

- Security and Privacy
- Software Engineering
- Systems & HPC
- Sensor Networks, Wearable Computing
- Machine Learning/Data Mining
- Graphics
- Computational Sciences/Data Analytics
- Edge Computing
- Health Informatics
- Human-Computing Interaction

2023-2024 New Faculty



Matthew Chapman

Cyber Operations, International Cyber Capacity Building

Ph.D., University of Hawaii



Ye "Ashley" Gao

Domain Generalization, Transfer Learning, Cyber-Physical System Applications

Ph.D., University of Virginia



Sidi Lu

Edge Computing, Emerging Mobility, Applied AI, Data Science

Ph.D., Wayne State University



Yanfu Zhang

Machine Learning, Data Mining, Computer Vision

Ph.D., University of Pittsburgh



Yixuan "Janice" Zhang

HCI, VIS, Equitable Computing, Crisis and Health Informatics

Ph.D., Georgia Tech

Preparing tomorrow's leaders to bring the computational power and thinking of computer science to all fields of science, engineering, business, medicine and beyond.

At Colorado School of Mines, the Department of Computer Science is not only the fastest growing department at our institution, we are the second largest after our 7 short years of existence. This is exciting! Our faculty is passionate about innovative teaching and together we are leading in the research and development of computing for the future.

Our Department

- In the fall of 2023, we have just over 1,300 undergraduate and graduate students enrolled as computer science majors. Our graduate student population has grown by 74% since 2020 and more than doubled since 2018.
- CS@Mines currently has 26 faculty, including 9 tenured, 7 tenure-track and 10 teaching faculty. We have 5 new hires this academic year and we're looking to hire several more open rank T/TT faculty and teaching faculty in 2024!

26 Faculty	34 PhDs	147 Masters Students
1,159 Undergrads	27% Female Faculty	30% Female Undergrads

Our Research

- CS@Mines has a strong emphasis on research, both within the department and collaboratively with other departments, universities, government organizations and industry partners. This year we are collaborating with the Mines Department of Physics to hire faculty in the area of quantum computing.
- Primary research areas: Computing systems, Machine Learning/AI, Theory, Cybersecurity, Robotics and Human-Computer Interaction.

Our Student and Partner Success

- PhD student Sihui Li was recently accepted to the RSS Pioneers workshop, a competitive program that selects the top 30 PhD's in robotics worldwide!
- Qi Li was selected as a participant of the 2023 CPS Rising Star program, the most honorable award PhD students and postdocs in cyber-physical systems research can receive.
- Mines students had an amazing finish again at this year's 2023 ICPC (International Collegiate Programming Contest) North American Championship. Overall they finished in the top half of all competing schools.
- CS@Mines team placed 3rd in the RMCCDC (Cyber Defense) finals this year.
- Students advised by Tom Williams won this year's 2023 Robotics Challenge, presenting a scenario for human robotic interaction.
- In partnership with the Gordon Foundation over the summer, Mines hosted {CodeDenver} to immerse high school students from underrepresented and underserved communities in key elements of cutting-edge technology and STEM-based career opportunities.
- The Computing Mines Affiliates Partnership Program (C-MAPP) continues to thrive. This year we've partnered with 27 companies from industry, which have funded a total of 98 student scholarships!



FACULTY HIGHLIGHTS

Awards

- Dr. Iris Bahar, Department Head and Professor, has been awarded the 2024 IEEE field medal in Undergraduate Teaching
- Dr. Dong Chen received the National Science Foundation CAREER Award for research that aims to give users of smart home devices more control over their data privacy
- Dr. Jeff Paone was honored with the 2022-23 Mines Teaching Award for Teaching Faculty

Promotions

- Dr. Hua Wang was promoted to Professor
- Dr. Neil Dantam was promoted to Associate Professor
- Dr. Wendy Fisher was promoted to Teaching Professor

NEW FACULTY



Kaveh Fathian
Assistant Professor



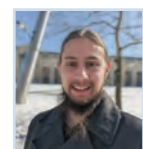
Kelsey Fulton
Assistant Professor



Guannan Liu
Assistant Professor



Christine Liebe
Professor of Practice



Micah Corah
Assistant Professor
(starting in Jan 2024)

WE'RE HIRING!

We invite applications for open rank tenured/tenure-track faculty and teaching faculty. **Info/Apply:**

mines.edu/human-resources/faculty-positions



COMPUTER SCIENCE

COLORADO STATE UNIVERSITY



Bruce Draper
Chair



DEPARTMENT HIGHLIGHTS

- Welcomed CSU Professor Bruce Draper as new department chair.
- Partnered in \$20M NSF AI Institute for Climate-Land Interactions, Mitigation, Adaptation, Tradeoffs and Economy (AI-CLIMATE).
- Named a National Security Agency Center of Academic Excellence in Cyber Defense.
- Awarded multiple faculty NSF CAREER Awards, Francisco R. Ortega and Vinayak Prabhu.
- Launched Riviera High Performance Computing System in collaboration with CSU Data Science Research Institute.
- Record number of first-generation and racially minoritized students.
- Undergraduate enrollment increased 143% in the past decade.

RESEARCH HIGHLIGHTS

- CAREER: HCC: Microgesture and Multimodal Interaction Techniques for Augmented Reality (NSF)
- CAREER: Designing Robust Cyber-Physical Systems: Logics, Automata, Optimization, and Heuristic Methods (NSF)
- CPS: Medium: Making Every Drop Count: Accounting for Spatiotemporal Variability of Water Needs for Proactive Scheduling of Variable Rate Irrigation Systems (NSF)
- A deep learning predictive analytics platform for plant genomics (DOE)
- Protecting Cyber Physical Systems using NIST Next Generation Access Control (NIST)
- An AI Tutoring System for Pollinator Conservation Community Science Training (NSF)



FACULTY AND STUDENT HIGHLIGHTS



- **Graduate Research Fellowship** NSF, Rachel Masters
- **Professor Laureate** CSU College of Natural Sciences, Indrakshi Ray
- **Best Interactive Event Award** AIED, Nikhil Krishnaswamy
- **Outstanding Achievement Award** CSU Classified Personnel Council, Kim Chacon
- **Faculty Excellence in Undergraduate Teaching and Mentoring** CSU College of Natural Sciences, Dave Matthews
- **Best Dissertation Award, Honorable Mention** ICAPS, Sarath Sreedharan
- **Spirit of Philanthropy Award** CSU, Elaine Regelson and Jim Sites
- **First Place** WiCyS Colorado Virtual CTF, Elita Danilyuk, Paige Hansen, Kristine Wiggins, Lauren Schick, Tristan Truxal, Corentin Ferry

31

Tenure-track and
Instructional Faculty

1187

Undergraduates

191

Graduate Students

20%

Women
Undergraduates

\$13M

Research Funding

Department of Computer Science
279 Computer Science Building
1873 Campus Delivery
Fort Collins, Colorado 80523-1873

Telephone: 970-491-5792

compsci.colostate.edu

@csucomputerscience



CS@CU By The Numbers (2022 - 2023)



Student Population: 3,061

1,783	1,072	206
BA & BS	MS	PhD

Degrees Granted: 1,084

506	566	12
BA & BS	MS	PhD

Student Statistics:

1,631	45%	17,108
majors	of majors are women	class enrollments

Fellowships:

5 NSFGRFP Fellows	1 Google Fellow
2 DoD NDSEG Fellows	1 Rhodes Scholar
2 Churchill Scholars (2023-2024)	(2023-2024)

Faculty Achievements

65 Faculty

- 1 ACM A.M. Turing Award Winner
- 10 Elected to National Academy of Engineering
- 4 Elected to National Academy of Sciences
- 7 Elected to American Academy of Arts and Sciences
- 2 Elected to American Philosophical Society
- 3 Elected to National Academy of Inventors
 - 1 Harvey Prize
- 3 IEEE John von Neumann Medal Winners
- 2 ACM/IEEE Knuth Prize Winners
 - 3 AAAI Fellows
 - 5 AAAS Fellows
 - 3 ACL Fellows
- 4 Guggenheim Fellows
- 20 ACM Fellows
- 17 IEEE Fellows
- 1 Elected to Internet Hall of Fame
- 3 Packard Foundation Fellowships
- 19 Alfred P. Sloan Foundation Fellows
 - NSF Awards: 4 PECASE,
 - 39 CAREER, 2 NYI, 4 PYI

Major Faculty Awards



Test of Time Award



Perceptual Issues in Augmented Reality Revisited (2010)
ISMAR 2022

Authors: Ernst Kruijff, J. Edward Swan, and Steven Feiner

Best Paper Awards



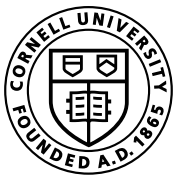
CARGO: AI-Guided Dependency Analysis for Migrating Monolithic Applications to Microservices Architecture ASE 2022

Authors: Vikram Nitin, Shubhi Asthana, Baishakhi Ray, and Rahul Krishna




XRP: In-Kernel Storage Functions with eBPF OSDI 2022

Authors: Yuhong Zhong, Haoyu Li, Yu Jian Wu, Ioannis Zarkadas, Jeffrey Tao, Evan Mesterhazy, Michael Makris, Junfeng Yang, Amy Tai, Ryan Stutsman, and Asaf Cidon




10 new faculty to join Cornell Bowers CIS's Department of Computer Science

Joined Fall 2023




Alex Conway, Cornell Tech
data structures with
application systems




Sainyam Galhotra
databases, data science


Joining in 2024




Saikat Dutta
software engineering and ML




Kuan Fang
robotics




Tanya Goyal
NLP




Michael P. Kim
theory, responsible ML



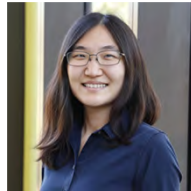
Wei-Chiu Ma
computer vision, robotics



Kristina Monakhova
computational imaging




Nick Spooner
quantum and cryptography




Jennifer Sun
AI for scientific discovery

Who we are



The Department of Computer Science in the Cornell Ann S. Bowers College of Computing and Information Science is among the best-ranked programs in the world, distinguished by its interdisciplinary spirit, contributions to core challenges in the field, and history of pioneering emerging fields. With an academic footprint spanning the Ithaca campus and the Cornell Tech campus in New York City, the college creates a unique and powerful technology ecosystem.



News and Highlights



Cornell Bowers CIS breaks ground on new 135,000 SF building
Expected to open in 2025, the building will support new instructional and research spaces — including robotics, builder, and research labs, a design studio, and active learning classrooms.



For more news

CS By the Numbers

- 1,350+** undergraduate majors
- 36%** of majors are women
- 16%** are underrepresented minorities
- 150+** M.Eng. and master's students
- 235+** Ph.D. students
- 62** faculty (56 tenure track)

Google, Cornell partner in online security initiative

Cornell researchers join the Google Cyber NYC Institutional Research Program, a Google-funded initiative to improve standards of online privacy, safety, and security, and to establish New York City as the leader of cybersecurity research.



AI-CLIMATE institute aims to curb emissions, boost economy

NSF and USDA's AI Institute for Climate-Land Interactions, Mitigation, Adaptation, Tradeoffs, and Economy (AI-CLIMATE) will create more climate-smart practices that will curb greenhouse gas emissions while boosting the agriculture and forestry industries.



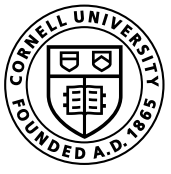
Cornell joins Schmidt AI in Science postdoc research initiative

Cornell was selected to join the Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship, a program of Schmidt Futures, to accelerate the next scientific revolution by applying artificial intelligence to research in science, technology, engineering, and mathematics.



Faculty Accolades

- | | |
|--|---|
| Robin Milner Young Researcher Award:
<i>Nate Foster</i> | SIGecom Mid-Career Award:
<i>Robert Kleinberg</i> |
| Knuth Prize:
<i>Éva Tardos</i> | IACR Fellow:
<i>Rafael Pass</i> |
| NSF Faculty Early Career Development Award: <i>Tapomayukh Bhattacharjee, Immanuel Trummer</i> | ACM CIKM Test of Time Award:
<i>Jon Kleinberg</i> |
| Sloan Research Fellow:
<i>Eshan Chattopadhyay</i> | CSF Test of Time Award:
<i>Michael Clarkson, Fred Schneider</i> |
| Intel Rising Star Faculty Award:
<i>Owolabi Legunson</i> | AAAS Fellow:
<i>Haym Hirsh</i> |
| Brower Medal:
<i>Éva Tardos</i> | NSA Best Scientific Cybersecurity Paper:
<i>Fred Schneider</i> |



Cornell Bowers CIS Information Science

infosci.cornell.edu



For more news

News and Highlights

Cornell Bowers CIS breaks ground on new 135,000 sq. ft. building

Set to open in 2025, the building will support critically needed growth of the college's innovative, cross-disciplinary research and teaching. The building will provide new instructional and research spaces — including robotics, builder, and research labs, a design studio, and active learning classrooms.



27 affiliated papers, two faculty members recognized at CHI 2023



In addition to the CHI Academic and Societal Impact awards, 27 affiliated papers – including a Best Paper and three Honorable Mentions – highlight Cornell's impact at the 2023 ACM CHI Conference on Human Factors in Computing Systems.

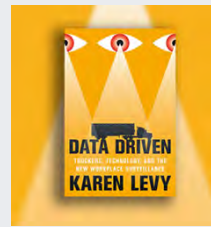


David Mimno named next department chair

Associate Professor Mimno will succeed David Williamson as department chair in January 2024.

Monitoring invades truckers' privacy without improving safety

Associate Professor Karen Levy's book, Data Driven: Truckers, Technology, and the New Workplace Surveillance, offers a behind-the-scenes look at how surveillance and automation are affecting the trucking way of life. The book received many awards, including: Best Book Award by ASA Section on Communications, Information Technology, and Media Sociology; Best Information Science Book Award from ASIS&T; and a McGannon Book Award.



Faculty Accolades

- **René Kizilcec** and **Cheng Zhang** receive NSF CAREER awards
- **Phoebe Sengers** named to CHI Academy
- **Nicola Dell** receives SIGCHI Societal Impact Award
- **Allison Koenecke** named Forbes 30 Under 30: Science
- **Shiri Azenkot** receives 10-year Impact Award from MobileHCI

Daniel Susser among 11 new faculty to join Cornell Bowers CIS



Daniel Susser
Associate Professor

Susser's research brings philosophical tools to bear on problems in technology governance, exploring normative issues raised by new and emerging data-driven technologies, and clarifying conceptual issues that stand in the way of addressing them.

Learn about the other faculty joining Cornell Bowers CIS



Info Sci By the Numbers

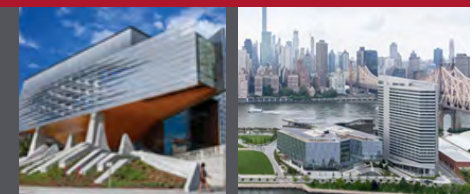
- 630+** undergraduate majors
- 55%** of majors are women
- 20%** are underrepresented minorities
- 90+** MPS students
- 120+** Ph.D. students
- 46** faculty in Ithaca and NYC (42 tenure track)

Who we are

The Department of Information Science in the Cornell Ann S. Bowers College of Computing and Information Science brings together leading scholars from across the university's Ithaca and New York City campuses to study the interplay between humans and digital technology.

Bolstered by Cornell's historic, cross-disciplinary strength in computer science and social science, the department has rapidly grown to a position of global leadership in exploring technology through the lenses of law, sociology, policy, economics, design, and more.

Areas of distinction include: human-computer interaction; computational social science; science and technology studies; ethics, law, and policy; interaction and critical design; network analysis; market and mechanism design; and machine learning and natural language processing. In recent years, the department has added new emphases in digital humanities, accessibility, human-robot interaction, algorithmic fairness, accountability and transparency, information and communication technologies for development (ICTD), and learning analytics.



Ithaca, N.Y. Campus

Cornell Tech Campus, NYC



ABOUT THE FACULTY OF COMPUTER SCIENCE

Dalhousie University is located in Halifax, Nova Scotia, and is a top-ranked Canadian research institution with a history of over 200 years of excellence. Dalhousie University belongs to the prestigious U15 group of Canadian Universities that focus on education, research, and innovation.

The Faculty of Computer Science offers undergraduate Bachelor of Computer Science (BCS) and Bachelor of Applied Computer Science (BACS) degrees, a research Masters of Computer Science (MCS), a professional Masters of Applied Computer Science (MACS), an interdisciplinary Masters of Digital Innovation (MDI), and a PhD degree. In addition to a commitment to teaching and research, the Faculty continues to build interdisciplinary strength at the digital intersection of computer science and other fields, from oceans and agriculture to healthcare and the arts.

THE DETAILS

UNDERGRADUATE			
1,300+ BCS STUDENTS	400+ BACS STUDENTS	16,000+ COURSE ENROLMENTS	
GRADUATE			
90+ PHD STUDENTS	100+ MCS STUDENTS	400+ MACS STUDENTS	100+ MDI STUDENTS
COMPUTER SCIENCE AT DAL			
5 RESEARCH CLUSTERS	62 FACULTY MEMBERS	#2 CITY IN CANADA FOR TECH DIVERSITY AND WAGE GROWTH	115+ COUNTRIES REPRESENTED AT DAL

FACULTY RESEARCH CLUSTERS

- Artificial Intelligence, Machine Learning & Big Data Analytics
- Human-Computer Interaction, Visualization & Graphics
- Systems, Software Engineering & Networking
- Algorithms, Bioinformatics & Digital Health
- Computer Science Education



NEW FACULTY



Dr. Alexander Brandt
Assistant Professor



Dr. Lizbeth Escobedo
Assistant Professor



Dr. Samer Lahoud
Associate Professor



Dr. Manuel Mattheisen
Associate Professor



Dr. Frank Rudzicz
Associate Professor



Dr. Hassan Sajjad
Associate Professor



Dr. Yujie Tang
Assistant Professor



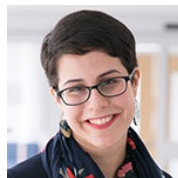
Dr. Ga Wu
Assistant Professor

[HERE WE CODE]

Here We Code unites industry, social organizations, schools, and universities in a campaign to make Nova Scotia one of North America's most attractive jurisdictions for digital talent and companies.

Learn more at herewecode.ca

NEW FACULTY MEMBERS



Pardis Emami-Naeini
Asst. Prof.
(2022) Security, HCI



Kate O'Hanlon
Lecturer
(2023) Education



Jian Pei
Professor, Chair
(2022) Data Science



Songdechakraiwut
Asst. Research Prof.
(2023) Educ/Data Sci



Alex Steiger
Asst. Research Prof.
(2023) Educ/Algorithms



Yesenia Velasco
Lecturer
(2023) Education



Anru Zhang
Assoc. Professor
(2023) Statistics



Danfeng Zhang
Assoc. Research Prof.
(2023) PL/Security

CS: The Biggest Major @Duke 2023

432
CS Majors
graduated in 2023

31%
Women
among 2023
graduates

67%
All Duke
graduates
took CS courses

Curricular Updates

Flexible Pathways:

- Major concentrations — AI/ML, Software Systems, and more
- Interdepartmental majors — Data Science Math/Statistics, Linguistics + CS, Computational Media
- Minors — CS, Computational Biology
- 4+1 Program — Earn MScS in 5 years at Duke

RECENT STUDENT HIGHLIGHTS

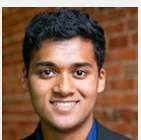
Undergraduate Awards 2021-2023:



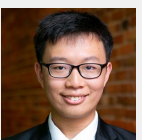
Eisenhower:
Swathi
Ramprasad



Goldwater & Marshall:
Yasa Baig



Goldwater:
Aditya Paul

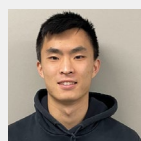


Rhodes:
Qi Xuan Koo

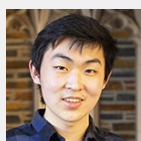


Knight-Hennessy:
Sydney Hunt

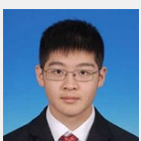
Computing Research Association (CRA) Awards for Outstanding Undergraduate Research 2022-2023:



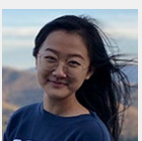
William He



Jerry Liu



Zeyu Shen

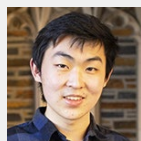


Norah Tan



Rui Xin

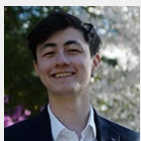
Recent Graduate Fellowships:



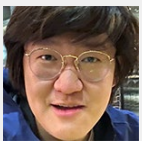
DOE & NSF GRF:
Jerry Liu



Facebook Finalist:
Hanrui Zhang



NSF GRF:
Alex Oesterling



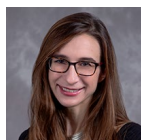
NSF GRF:
Andy Zhang



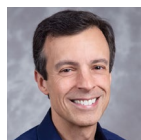
NSF GRF:
Jack Goffinet

RECENT FACULTY AWARDS

- **AAAI Fellow and Guggenheim Fellow:** Cynthia Rudin (2022)
- **AAAI Fellow:** Ronald Parr (2023)
- **ACM SIGCSE Award for Outstanding Contribution to CS Education:** Susan Rodger (2023)
- **Amazon Research Award:** Carlo Tomasi (2023)
- **American Academy of Arts & Sciences Member:** Robert Calderbank (2022)
- **National Academy of Engineering Member:** Guillermo Sapiro (2022)
- **NSF CAREER Awards:** Kartik Nayak and Danyang Zhuo (2023)
- **Tweedie Award, Institute of Mathematical Statistics:** Anru Zhang (2022)
- **Very Large Databases (VLDB) Early Career Award:** Sudeepa Roy (2022)



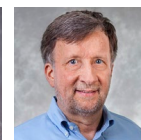
Cynthia Rudin



Ronald Parr



Susan Rodger



Carlo Tomasi



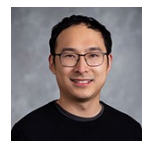
Robert Calderbank



Guillermo Sapiro



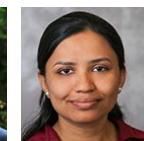
Kartik Nayak



Danyang Zhuo



Anru Zhang



Sudeepa Roy

ACADEMIC PLACEMENTS

Postdoctoral associates and PhDs who recently accepted faculty positions:



Johes Bater:
Tufts (2022)



Yu Cheng:
Brown (2022)



Amir Gilad:
Hebrew U (2023)



Xiao Hu:
UWaterloo



Zhengjie Miao:
SFU (2023)



Marco Morucci:
NYU (2021)



Stavros Sintos:
UIC (2022)



Kevin Sun:
UNC-CH (2023)



Chenghong Wang:
Indiana (2023)



Tianyu Wang:
Fudan U (2021)



DEPARTMENT SUMMARY

- 19 Tenured/Tenure Track faculty (and growing!)
• 5 Faculty on Continuous Teaching Track
• Six NSF and NIH Early Career Awards
• Faculty & Student research funded by NSF, NIH, PCORI, AFOSR, DOE, IARPA, various corporations, agencies, and foundations \$3.7MM in FY 2023
• Major Research Areas: AI, HCI, NLP, Information Retrieval, Graph/Data Mining, Machine Learning, High End Computing /Storage, Security and Privacy.

UNDERGRADUATE PROGRAMS

- BS and BA degrees in Computer Science
• Joint majors with Math, Econ, QTM
• New interdisciplinary AI courses and programs
• 327 majors, 97 degrees in 2023, 9 honors theses
• ~2400 student enrollments in CS each year
• New Undergraduate AI Minor accessible to students from all disciplines

GRADUATE PROGRAMS

- Interdisciplinary PhD & MS programs in Computer Science and Informatics (CS, BMI, Biostatistics)
• Currently 83 PhD, 44 MS students
• 13 PhD, 4 MS (Covid reduced) awarded 2022
• Recent graduate placements include UofT, USC, UCSD, UNC, Amazon, Meta, Google, Microsoft, IBM

STUDENT ACTIVITIES

- Vibrant and engaged student community



- Emory CS sponsors GHC attendance, local GWC, undergraduate ProgramHers, Robotics, and CS clubs, BPC and Women in Computing endeavors
• Student recognitions include: Covid Innovation Award for Teaching & Research; Silver medal at ICPC Programming Contest; KDD Health Day best paper; Alexa competition finalist; Google fellowship

NEW FACULTY

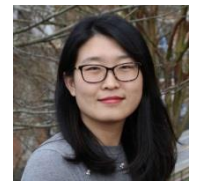
- Three new faculty members join Emory in AY 23-24



Wei Jin
Asst. Professor



Yolanda Rankin
Assoc. Professor



Ting Li
Asst. T. Prof

FACULTY HONORS

- Promotion, Career Award, Racial Justice Award



Liang Zhao
Assoc Prof w Tenure NIH K Award



Carl Yang



Emily Wall
Racial Justice Awd

SELECTED HIGHLIGHTS

- Faculty Distinctions
- Li Xiong elected IEEE Fellow
- Dorian Arnold is SC23 General Chair
- Jinho Choi and Emora (a caring chatbot) featured in Atlanta Journal-Constitution
• Recent Grants
- Yolanda Rankin: NSF CAREER – Black Feminist Epistemologies: Building a Sisterhood in Computing
- Carl Yang: NSF – Dynamic Brain Graph Mining
- Emily Wall: NSF – Modeling and Mitigating Confirmation Bias in Visual Data Analysis
- Fei Liu: NSF CAREER – Neural Transcript Summarization and Induction of Document Structure
- Kristin Williams: Halle Institute for Global Research – Issues in Environmental Stewardship
- Liang Zhao: Department of Homeland Security – Cross Platform Cybercrime Detection
- Andreas Zufle & Li Xiong: NSF-CSIRO – Understanding Bias in AI Models
- Joyce Ho: NSF – Aequitas: Comprehensive ML Frameworks to Decode Health Disparities
- Li Xiong: NIH – Sensor HW and Intelligent Tools for Assessing Health Effects of Heat Exposure
- Liang Zhao & Andreas Zufle: Homeland Security – Cross-Platform Cybercrime Detection on Interconnected Heterogeneous Networks

NEW DIRECTOR



Jason Liu
Endowed Computer Science Professor

NEW FACULTY



Sumit Jha
Professor



Selcuk Uluagac
Professor



Rehan Akbar
Assoc. Teach. Prof.



Juan Mancilla
Assist. Teach. Prof.



Abdul Rehman
Assist. Teach. Prof.



Kemal Akkaya
Professor



Wenbin Zhang
Assistant Professor



Hafiz Malik
Assist. Teach. Prof.



Mustafa Ocal
Assist. Teach. Prof.



Samira Zad
Assist. Teach. Prof.

NEW ASSOC. DIRECTOR



Trevor Cickovski
Associate Director & Assoc. Teaching Professor



School Highlights

- WSJ ranks FIU #29 in the nation and #4 among public universities
- 46% growth at KFSCIS since Fall 2020 with more than 4,300 students in CS, IT and Cybersecurity
- MS programs grew by 77% and PhD by 40% over Fall 2022
- 7 NSF CAREER Award Winners
- 1 DOE CAREER Award Winner
- 1 DARPA Young Faculty Award Winner
- 10 Faculty Members Recognized as Fellows of NAE, IEEE, ACM, AAAS, NAI, AIMBE, and Others
- 4 Faculty Members Recognized as ACM Distinguished Scientists

Degrees Offered

Undergraduate

- B.S. / B.A. Computer Science
- B.S. Cybersecurity
- B.S. / B.A. Information Technology

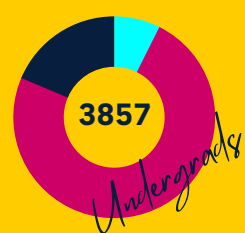
Graduate

- Ph.D. / M.S. Computer Science
- M.S. Cybersecurity
- M.S. Data Science
- M.S. Information Technology
- M.S. Telecommunications and Networking

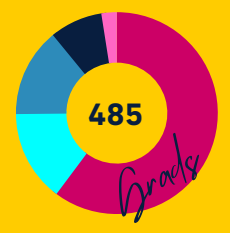
Student Highlights

- Upsilon Pi Epsilon (UPE Chapter) Wins National Continuing Excellence Award
- INIT – New student organization to advance technology for minority students
- Women in Cyber Security (WyCyS) wins National Leadership Award
- Women in Computer Science Host Women in Technology Conference
- Shell Hacks Recognized as Florida's Largest Hackathon with More Than 1000 Participants

KFSCIS by the Numbers



- BS/BA-CS
- BS/BA-IT
- BS-CY



- PhD/MS-CS
- MS-CY
- MS-IT
- MS-DS
- MS-TN

New Hires

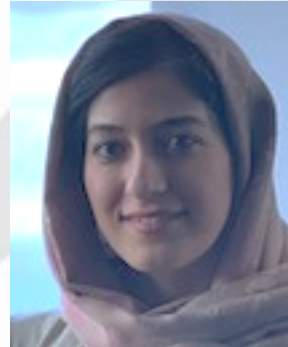
The Department of Computer Science proudly welcomes our 8 newest faculty members, bringing our total faculty strength to 57 tenured/tenure-track and 27 teaching-track faculty.



Cem
Evrendilek



Sapna
Gambhir



Parastoo
Kamranfar



Judy
Luo



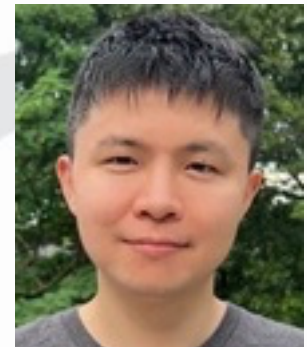
Andrian
Marcus



Radu
Negulescu



Michael
Reep



Keren
Zhou

FAST FACTS

Degree Programs

- 2 BS Computer Science, BS Applied Computer Science
- 1 Graduate Certificate in Foundations of Computing
- 3 MS Computer Science, MS Information Systems, MS Software Engineering
- 1 PhD Computer Science

Enrollment Fall 2023

Undergraduate **2,415** Masters **1144** PhD **207**

Degrees Conferred

2022-23 BS 382, MS 320, PhD 15

2021-22 BS 383, MS 121, PhD 11

Department News

- Department of Computer Science ranked #33 in CSRankings.org, and #30 on a five-year basis
- Dr. ThanhVu Nguyen was awarded the National Science Foundation (NSF) CAREER Award for his project *NeuralSAT: A Constraint-Solving Framework for Verifying Deep Neural Networks*
- Dr. Jinwei Ye was awarded the National Science Foundation (NSF) CAREER Award for her project *Towards Polarimetric Visual Understanding*, bringing the total number of CS faculty receiving a CAREER award to 26



By the Numbers (FY 2023)

- **Tenure-Track Faculty: 23 Full-time; 5 Joint Appointments**
- **CSE Ph.D. Students: 81 (Male: 70, Female: 11)**
- **CSE M.S. Students: 141 (Male: 105, Female: 36)**
- **School of CSE CS/ML Ph.D. Students: 41 (Male: 35, Female: 6)**
- **School of CSE M.S. Analytics Students: 78 (Male: 54, Female: 24)**

Organization News and Facts

School of CSE chaired by Regents' Professor **Haesun Park**; Professor **Edmond Chow** and Associate Professor **Elizabeth Cherry** serve as associate chairs.

School hosts two chaired faculty positions: Edenfield Early-Career Professorship (**Nisha Chandramoorthy**), and J.Z. Liang Early-Career Professorship (**Xiuwei Zhang**)

Full-time, tenure-track faculty grows to highest point in School history at 23 with new hires of Assistant Professors **Bo Dai**, **Raphaël Pestourie**, **Kai Wang**, and **Helen Xu**.

12 Schools across Georgia Tech participate in CSE graduate programs as home units, and School of CSE offers five Ph.D. degrees and eight M.S. degrees.

Located on 13th floor of the recently constructed Coda building at Tech Square, complete with data center that hosts the Hive, Phoenix, and ICE clusters.

Research Highlights

A School of CSE-based research team were finalists of the 2022 Gordon Bell Prize, which included alumni **Ramki Kannan** (Ph.D. CS 2016), **Piyush Sao** (Ph.D. CSE 2018), Professor **Rich Vuduc**, and Ph.D. student **Vijay Thakkar**.

Associate Professor **B. Aditya Prakash** is principal investigator of a \$1 million NSF grant toward formation of a multidisciplinary team for epidemic outbreak prevention research.

Faculty News

Professor **Edmond Chow** co-chaired the 2022 SIAM annual meeting and was selected as program director for SIAG CSE.

Assistant Professor **Srijan Kumar** received the National Science Foundation CAREER award. Kumar was also selected as a Kavli Fellow by the National Academy of Sciences for back-to-back years in 2022 and 2023.

Assistant Professor **Anqi Wu** was selected as a Sloan Research Fellow by the Alfred P. Sloan Foundation. Wu was also selected as a DARPA Riser.

Assistant Professor **Yunan Luo** received the Amazon Research Award (ARA) in the AWS AI area.

Regents' Professor **C. David Sherrill** received the 2023 Charles H. Herty award, presented by the Georgia Section of the American Chemical Society.

Student News

Ph.D. student **Gaurav Verma** was selected as a J.P. Morgan Chase AI Research Ph.D. Fellow and a Snap Research Fellow. Verma completed an internship with Microsoft Research in Summer 2023.

Ph.D. student **Zijie (Jay) Wang** received the Apple Scholars in AI/ML Ph.D. Fellowship.

Ph.D. candidate **Haekyu Park** was named a Rising Star at EECS 2022.

Ph.D. student **Mikhail Isaev** received the Dr. Sudhakar "Sudha" Yalamanchili Award at ModSim 2022.



Harvey Mudd College offers a computer science program that provides students with a strong background blending experimentation, theory and design. Computer science majors are exposed to a balance of foundational theory and practice that includes collaborative, hands-on student-faculty research experiences. Through its internationally recognized Clinic Program, students conduct advanced research for industry, government and nonprofit clients. Well-prepared HMC graduates go on to prominent PhD programs and innovative jobs with top companies.

906 HMC undergrads

50/50 Overall gender diversity

No. 1 Liberal Arts College
Washington Monthly

\$112,500 Median grad salary (2023)

No. 29 Computer Science Program
(highest-ranked undergrad-only college)
U.S. News & World Report

CS majors at HMC: 49%

Percent female in CS majors:
54% CS **40%** CS/math
30% CS/physics **67%** math-comp-bio

DEPARTMENT NEWS

NEW Joint Major in CS and Physics

The Harvey Mudd College faculty recently approved a new joint major in computer science and physics. The new major will serve students whose interests lie at the intersection of physics and computer science, particularly those excited about new discoveries in complex physical systems enabled by high-performance computing and/or machine learning and quantum computing and quantum information science.

“Student interest in exploring the intersection of physics and computing has grown recently, says Jim Boerkoel, computer science professor and department chair. “This new major will allow students to explore the latest advances in both fields as a coherent, compelling program of study.”

NSF Funds Intelligent Systems Research

A National Science Foundation Research Experiences for Undergraduates (REU) grant supports 10 students per summer for the next three years on projects with the theme “Exploring the Limits of Intelligent Systems.”

Faculty Mentoring Award

Professor Yi-Chieh (Jessica) Wu received the 2023 CRA Undergraduate Research Faculty Mentoring Award. She was lauded for her exceptional mentorship, contributions to undergraduate research experiences and guidance on admission and matriculation of students in research-focused graduate programs.

SELECTED 2022-2023 CLINIC PROJECTS

The HMC CS Clinic Program brings together sponsor organizations with problems to solve and student teams who have the skills to solve them. bit.ly/HMCcsclinics

DirectTV – DIRECTV aims to automate generation of personalized football highlight reels, so fans who miss a game should be able to keep up-to-date with their favorite teams and players in real-time without the need for manually curated content. To achieve this, the Clinic team created a dataset, which pairs a full-length game with highlight scenes, and applied machine learning models to label football plays as either highlight or non-highlight.

Memorial Sloan Kettering Cancer Center – Within MSKCC, the Dana Pe'er Lab has developed a novel single-cell analysis tool called SPECTRA for identifying meaningful biological factors in a single-cell RNA-seq data. This project, in collaboration with the SAIL (Single-Cell Analytics Innovation Lab) at MSKCC (directed by Dana Pe'er), intends to create a graphical user interface for SPECTRA, modify the source code to support GPU computation and explore potential integration with other single-cell analytics tools.

Unite Here – A labor union representing 300,000 U.S. and Canadian workers sought improved data infrastructure to strengthen the decision-making processes of labor campaigns. The HMC Clinic team developed a centralized, accessible data visualization tool for data-informed decision making.



Kirabo

Padmanabhan

Wloka

MEET OUR NEW FACULTY MEMBERS

Lynn Kirabo, assistant professor; joint appointment with the Hixon Center for Climate and the Environment. Her focus is human-computer interaction research at the intersection of accessibility, public transit and the global south.

Arthi Padmanabhan, assistant professor. Her research focus is on building systems that enable scalable machine learning on real-time video data.

Calden Wloka, assistant professor. He studies visual perception from the perspective of both artificial and biological systems.

Degree Programs

Bachelors

- Artificial Intelligence
- Computer Science
- Computer Information Systems
- Data Science

Masters

- Artificial Intelligence
- Computer Science
- Cybersecurity
- Data Science
- Computational Decision Science and Operations Research

PhD

- Computer Science

By the Numbers

Fall 2023 Enrollment

- 728 Undergraduate students
- 1,471 Master's students
- 69 PhD students

Faculty

- 19 Tenured/tenure-track
- 13 Teaching faculty

Ranking

- 83rd in 2023 US News & World Report

Faculty Awards

- 6 NSF CAREER awards
- 5 Fellows of societies (ACM, IEEE, NAI)

Fall 2023 Research Funding

- \$16M active awards (lead PI is from CS)

Welcome New Faculty



Farzaneh Derakhshan
Assistant Professor



Mark Miller
Assistant Professor



Farshad Ghanei
Teaching Professor



Shovik Roy
Teaching Professor



Xiaolang Wang
Teaching Professor

Some Highlights

- Binghui Wan received NSF CRII Award.
- Binghui Wan received NSF TRIPODS Phase II Award.
- Binghui Wan received CISCO Research Award.
- Binghui Wan received Global Top 50 Chinese Rising Stars in AI + X, by Baidu Scholar.
- Cynthia Hood received Fulbright Scholars Award.
- Cynthia Hood chaired National Academies of Science, Engineering, and Medicine Panel on Review of NIST's Communications Technology Lab.
- Kyle Hale received the NSF CAREER Award.
- Kyle Hale received NSF CSR Medium Award.
- Mustafa Bilgic received NIH-NIDDK grant.
- Nik Sultana received URA fellowship.
- Sanjiv Kapoor was inducted a AAIA fellow.
- Sanjiv Kapoor was inducted an NAI fellow.
- Stefan Muller's student, Francis Renaldi, received 3rd place at the ICFP Student Research Competition.



Recent CAREER Awards



Kahyun Choi

Information & Library Science

IMLS Junior Career Award: Unbiased AI for Poetry Analysis: Toward Equitable and Diverse Digital Libraries



Luyi Xing

Computer Science

CAREER: Foundations for IoT Cloud Security



Patrick Shih

Informatics

CAREER: Co-designing a Service Exchange Model for Sustaining Community-based Respite Care



Alexander Gummenick

Intelligent Systems Engineering

CAREER: Liquid-Phase Processing of Fiber-Based Electronic and Photonic Materials and Devices



Dingwen Tao

Intelligent Systems Engineering

CAREER: A Highly Effective, Usable, Performant, Scalable Data Reduction Framework for HPC Systems and Applications

Recent Grants



Sparsitute: A Mathematical Institute for Sparse Computations in Science and Engineering



Human Reference Atlas a comprehensive, high-resolution, three-dimensional atlas of all the cells in a healthy body



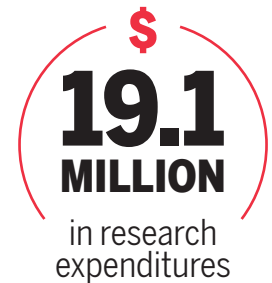
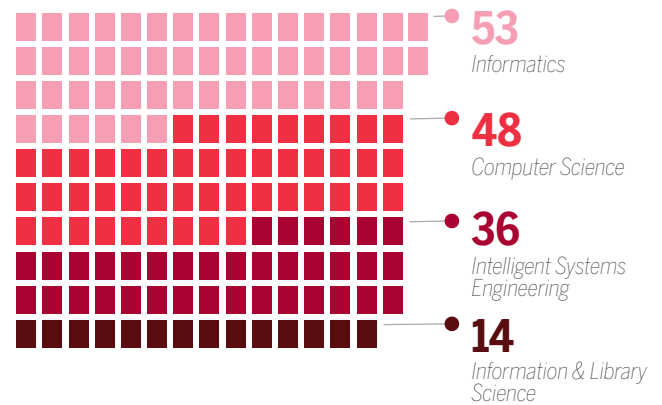
RI: Small: Approximate Interference for Planning and Reinforcement Learning



AGILE: Advanced Graphic Intelligence Logical Computing Environment

Luddy by the numbers

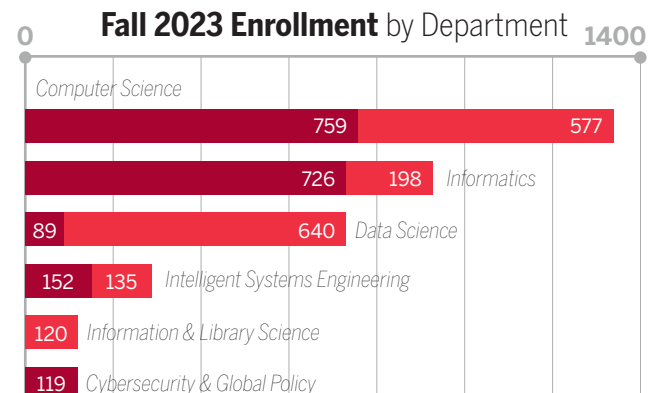
151 total faculty



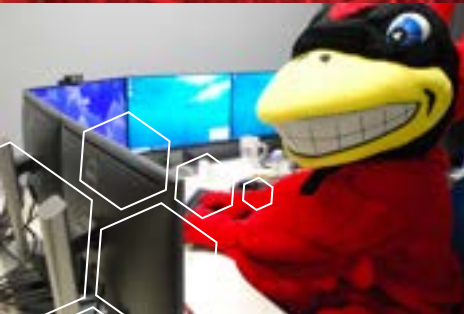
3,813 total students

2,143 undergraduates

1,670 graduates



DEPARTMENTAL OVERVIEW



1,600*
undergraduate
students

*938 Computer
Science, 662 Software
Engineering

240*
graduate
students

*50 M.S. in CS,
20 M.S. in AI,
170 Ph.D.

307*
female
students

*51 M.S. & Ph.D.
139 Undergraduates
117 Software Engineering

5-YEAR GROWTH TRENDS

44%
increase in
undergraduate student
enrollment

57%
increase in
female
enrollment

37%
increase in
grant
funding

MULTIPLE NEW DEGREE PROGRAMS

M.S. in AI

B.A. in
Computer
Science

B.S. in
Data
Science

2022-2032 STRATEGIC PLAN

We are thrilled to share with you the strategic plan for the next ten years, which acts as a compass for our department; guiding us into the next decade toward a brighter future. The Strategic Plan was the culmination of planning and development accomplished by the Strategic Plan Committee.



FULL STRATEGIC PLAN

NSF CAREER AWARD RECIPIENTS

This award is given to promising early-career faculty members who demonstrate the potential to become influential academic role models in both research and education.



MYRA COHEN



YAN-BIN JIA



WEI LE



QI LI



ANDREW MINER



HRIDESH RAJAN



WALLAPAK
TAVANAPONG



JIN TIAN



NOK
WONGPIROMSARN

NEW FACULTY SINCE FALL 2022



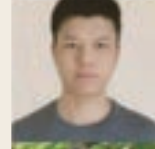
MENGDH HUAI
Assistant Professor
Data Mining and
Machine Learning



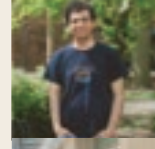
LIYI LI
Assistant Professor
Quantum Computation
and Software
Engineering



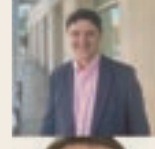
YANG LI
Assistant Professor
Computer
Architecture and
Computer Systems



CHENGLIN MIAO
Assistant Professor
Internet of Things,
Security and Privacy



MEISAM
MOHAMMADY
Assistant Professor
Differential Privacy and
Responsible AI



CLAY STEVENS
Assistant Professor
Machine Learning and
Probabilistic Models



ABRAHAM ALDACO
Assistant Teaching
Professor
Machine Learning and
Data Science



MATTHEW HOLMAN
Assistant Teaching
Professor
Programming
Languages



SHAKIL AHMED
Lecturer
Wireless
Communications and
Networking

RESEARCH CLUSTERS

- AI, machine learning, and data science
- Bioinformatics and computational biology
- Human computer interaction
- Robotics and autonomous systems
- Software engineering and programming languages
- Systems and networking
- Theoretical foundations



Highlights

- The department started a **new bachelor's degree in cybersecurity** in Fall 2022. The new program had 23 majors in its first semester and will be undergoing accreditation by ABET during the 2023-2024 school year.
- Pavithra Prabhakar, Peggy and Gary Edwards Chair in Engineering, received the **Distinguished Young Alumnus Award** from the National Institute of Technology in India.
- Pascal Hitzler, Lloyd T. Smith creativity in engineering chair, **published a book on neurosymbolic artificial intelligence** entitled "Compendium of Neurosymbolic Artificial Intelligence."
- Arslan Munir, the Daniel and Judi Burk - Carl and Mary Ice Keystone research scholar, was **awarded a \$1 million grant** from the U.S. Department of Agriculture National Institute of Food and Agriculture to develop a fog-assisted framework designed to fill the gaps in contemporary smart agriculture technologies.
- Eugene Vasserman, Joshua Weese, Nathan Bean, and Russ Feldhausen **received a \$300 thousand National Science Foundation grant** to broaden rural access to computing education across the state of Kansas.
- The department has **established a new Advancing Learning & Teaching in Computer Science lab** focused on computer science education. Joshua Weese, Nathan Bean, and Russ Feldhausen are co-directors.
- Scott DeLoach was awarded the **Kansas State University 2021 Presidential Award** for Outstanding Department Head.

Graduates



- 105 B.S. degrees awarded
- 14 M.S. degrees awarded
- 10 Ph.D.'s awarded
- 4-year graduation rate — 55.6%
- 6-year graduation rate — 67.5%

CSRankings.org



- #18 — Embedded & Real-Time Systems
- #31 — Logic & Verification
- #78 — Design Automation
- #83 — Software Engineering
- #84 — Robotics
- #84 — Theory
- #94 — Web & Information Retrieval

Research



- AI and Data Science
- Cyber-Physical Systems
- High-Assurance Software
- Cybersecurity
- Computer Science Education

ABET Accredited Degrees

- Computer Science (B.S., M.S., Ph.D.)
- Computer Science — Cybersecurity (B.S.)
- Computer Science — Entrepreneurship (B.S.)
- Computer Science B.S. & M.B.A.
- Computer Science B.S. & M.S.

Faculty

- 16 tenure-track faculty
- 8 instructional faculty
- 16 named/endowed positions
- 7 NSF career awards
- 1 ONR young investigator awards

Students

- 469 B.S. students
- 33 M.S. students
- 46 Ph.D. students

KEAN UNIVERSITY DEPARTMENT OF COMPUTER SCIENCE & TECHNOLOGY

The Dorothy and George Hennings College of Science, Mathematics and Technology

New
Faculty



>>> Bin Hu
Ph.D, Rutgers University
Mobile Sensing and
Pervasive Computing,
Cybersecurity and Privacy,
Efficient Deep Learning



>>> JoAnna Steiner
M.S. Fairleigh Dickinson University
Computer Architecture,
Programming Languages,
Cybersecurity



>>> Meng Xu
Ph.D, Utah State University
Computer Vision, Deep Learning,
and Medical Image Analysis

- Artificial Intelligence
- Artificial Reality
- Computer Science Education
- Computer Vision
- Cybersecurity
- Data Science
- Human Computing Interaction
- Machine Learning
- Virtual Reality

Select New Grants

**Socially Informed Traffic Signal Control
for Improving Near Roadway Air Quality**
NSF, \$201,312

**Fostering Communities of Practice
Through Research and Peer Mentoring**
NSF, \$2,997,851

Research Areas



News Highlights

Department of Computer Science and
Technology named a recipient of the 2023
INSIGHT Into Diversity Inspiring Programs in
STEM Award

This award recognizes important work through
mentoring and teaching, research, and other efforts
worthy of national recognition.

- Two Kean University students were awarded first and second place in the Graduate & Undergraduate Research Posters — Computing category at the 2022 GMIS Conference.
- Xavier Amparo, was selected from among more than 800 applicants for the 2022 GMIS Outstanding Student Leadership Award for Undergraduates in the Sciences.
- Eric Ponte, Computer science Senior was named a 2022 GMIS STEM Scholar.
- Eric Landaverde, Computer science student delivered more than 20 research presentations as an undergraduate student at Kean, leading him to being named Kean's Student Researcher of the Year. Eric was also named a CAHSI (Computing Alliance of Hispanic-Serving Institutions) Student Scholar.
- Over 275 incoming first-year students were welcomed to the department in fall, the largest incoming class.
- 40+ students will participate in AI4ALL this year.
- Over 55+ co-authored students publications have been published this past year.
- 50+ undergraduates participated in REUs this past summer.
- 60+ HS students and educators in computing were acknowledged in the 9th annual NCWIT Aspirations Award Ceremony hosted at Kean on April 2023.
- 65+ students participate annually in the Grace Hopper, Tapia, National Conference on Undergraduate Research & Great Minds In STEM conferences.
- Department chair and professor, Patricia Morreale, Ph.D., was named as the 2023 Joanne McGrath Cohoon Service Award Recipient by the National Center for Women & Information (NCWIT).



CS & T By The Numbers

691
275
966
69%
50%

- Computer Science Majors
(5 Tracks)
- Information Technology Majors
(3 Tracks)
- Total Undergraduate
Students
- Population
of Diverse Students
- Female Faculty Members



Departmental Statistics

\$94,036

Mean Salary for Lehigh CS Majors (2022)

\$102,478

Mean Salary for Lehigh CSB Majors (2022)

29

Full-time tenure-track and teaching faculty

>550

Undergraduate majors (the largest at Lehigh) across four bachelor's degrees in computer science

224

Students taking our popular minors in computer science and data science

76

Graduate students

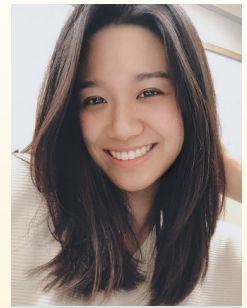
Welcoming New Faculty:



Vinod Namboodiri
Professor



Elroy Sturdivant
Professor of Practice



Jialiang Tan
Teaching Assistant Professor

Award and Grant Winners:

Assistant Professor Yu Yang was awarded a new NSF grant for broadening participation of minorities under a research project focusing on improving near-road air quality through socially-informed traffic signal control.



4 CSE students awarded prestigious fellowships and scholarships:

- Kirsten Sjoberg '24** Goldwater Scholarship
- Nada Stojanović '25** Ruhr Fellowship
- Andrew Koerner '24** DAAD Rise Scholarship
- Amir Jemal '24** Benjamin A. Gilman International Scholarship

Profile: Daniel Lopresti

Dr. Lopresti, Lehigh professor, is currently the **Chair of the Computing Research Association's Computing Community Consortium (CCC)** and a former interim dean of our college. Here his expertise on AI is featured in a four-part news series, "[AI in the Lehigh Valley](#)".



Profile: Dominic DiFranzo

Lehigh assistant professor **Dominic DiFranzo** is developing tools to fight online disinformation, encourage social media users to act prosocially, and better the online environment. [Read here about a recent project.](#)



Office of Sustainability News: The *Hungry Hawks* mobile app and web interface, developed by CSB students, allows hosts of Lehigh meetings and events to advertise the availability of leftover Lehigh-catered food, reducing waste and fighting food insecurity. [Read about it here.](#)





Faculty

- 21 Tenure-track/Tenured
- 3 Instructional Track

New Faculty

- Serein Al-Ratrout, Assistant Teaching Professor
- Ye Duan, Professor
- Wenbin Zhang, Assistant Professor

New Degree Programs

- MS in Applied Computer Science
- BS in Data Science

Fall '22 Enrollment

Computer Science

- BS 438
- MS 26
- PhD 29

Software Engineering

- BS 118

Cybersecurity

- MS 7

Data Science

- MS 39

Student Highlights

Fall 2022 NCL cybersecurity competition - Michigan Tech team ranked 8th in the nation

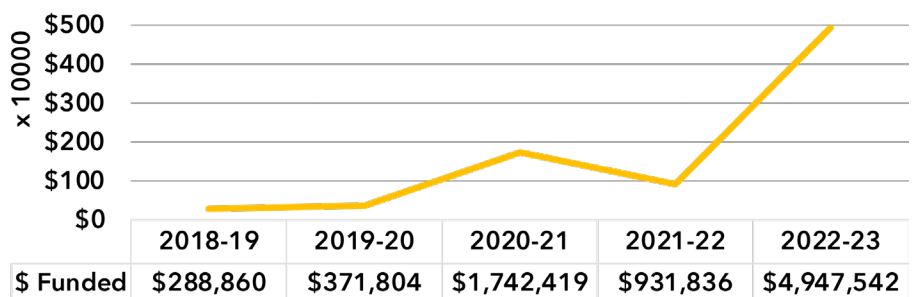
Faculty Recognition

- Michigan Tech recognized as National Center for Academic Excellence in Cyber Defense
- Bo Chen: Distinguished Member, European Alliance for Innovation, Class of 2022
- Keith Vertanen: Dave House Associate Professor of Computer Science
- Briana Bettin: Lead author of the best paper at the 27th ACM Conference- on Innovation and Technology in Computer Science Education
- Zhenlin Wang: Co-author of the best paper at the 2023 ACM International Conference on Supercomputing

Funding Highlights

- Chen, B., Wang, Z., SaTC: CORE: Small: Hardware-assisted Self-repairing in Decentralized Cloud Storage against Malicious Attacks, NSF
- Nekritch, Y., AF: Small: Fundamental Geometric Data Structures, NSF
- Mayo, J., Phase II STTR: MDA20-T002 Non-Real-Time Hardware-Assisted Computer-System Simulation, DoD
- Onder, S., Collaborative Research: SHF: Medium: Vectorized Instruction Space (VIS), NSF
- Havens, T., Enabling the Future of Great Lakes Biological Resource Assessment, DoI
- Dukka, K., Wang, Z., Brown, L., MRI: Acquisition of a GPU-accelerated cluster for research training and outreach, NSF
- Havens, T., SAR Signature Management, DoD
- Dukka, K., Deep learning based approaches for protein post-translational modification site prediction, NSF

External Funding (\$)



Meet New Faculty



New CS Dept. Chair:
Dr. Seung-Jong Park



New Associate Professor:
Dr. Satish Puri



New Assistant Professor:
Dr. Suman Maity



New Assistant Professor:
Dr. Huiyuan Yang

GROW WITH US

Find our open positions on ACM, IEEE, and CRA:

4 Assistant/Associate Professor

1 Full Professor

1 Assistant/Associate Teaching Professor



Ranked **#1**
Public University for
Engineering in MO

CS Department population
1,000
Students

Research Highlight

Satish Puri received a collaborative grant from NSF titled "Approximate Nearest Neighbor Similarity Search for Large Polygonal and Trajectory Datasets". The award amount is \$235,000 for up to 2026. In 2022, he got an NSF CAREER Award. This \$511,000 grant (2022-2027) supports research in high performance computing for geospatial analytics on heterogeneous platforms.

A research paper co-authored by Satish received the Best Paper Finalist (in Top 4) position in IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID) in May 2023.

Paper Title: "Efficient PRAM and Practical GPU Algorithms for Large Polygon Clipping with Degenerate Cases"

Summer NSF REU Program



Gianforte School of Computing

Montana State University

<https://www.cs.montana.edu/>

Faculty Opportunities in 2023-2024

- 1 Endowed Professorship – the Hambly Chair
- 2 Assistant Professor Positions
- More information: <https://www.cs.montana.edu/opportunities.html>

Highlights

- There will be a groundbreaking for a \$50M building gifted by the Gianforte Family Foundation this coming summer. The building is projected to open in 2026.
- We are searching for the inaugural Hambly Chair.
- **Dr. Matthew Revelle** joined as an Assistant Professor in fall 2023.
- **Dr. Fangtian Zhong** joined as an Assistant Professor in fall 2023.
- Our research expenditures rose to an all-time high of \$2,266K in fiscal year 2023.
- **Dr. Clemente Izurieta** and **Dr. Ann Marie Reinhold** secured a 3-year \$4.469M DHS award.
- **Dr. Brittany Fasy** and **Dr. John Sheppard** are working on a \$420K NSF grant to diagnose cancer.
- **Dr. John Sheppard** helped secure a statewide, 5-year \$20M NSF EPSCoR grant.
- **Dr. Sean Yaw**, **Dr. Brendan Mumey** and **Dr. Binhai Zhu** were awarded a \$324K NSF REU site.
- **Dr. Laura Stanley** helped secure a \$429K Murdoch Trust grant.
- **Dr. Clemente Izurieta** gave the Provost's Distinguished Lecture in September 2023.
- **Dr. Mary Ann Cummings** received the 2023 PKP Fridley Award for Distinguished Teaching

Student Numbers

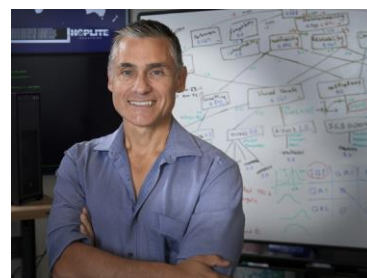
- 577 students in Fall 2023 (includes B.S., M.S. and Ph.D. students)
- 568 students in Fall 2022 (includes B.S., M.S. and Ph.D. students)
- Awarded 5 Ph.D. degrees, 10 M.S. degrees and 108 B.S. degrees in AY 2022-23.



Dr. Matt Revelle



Dr. Fangtian Zhong



Dr. Clemente Izurieta



MOREHOUSE

Software Engineering Program

Morehouse College

Academic Program Director

Kinnis Gosha, PhD | Hortenius I. Chenault Endowed Professor of Computer Science



Select Grant Awards

Gosha, K. (2023) Planning: HBCU-UP: OPEN: **Planning the Use of Strategic Partnerships to Build Pipelines for CHIPS through Morehouse College.** National Science Foundation. Amount: \$100,000 (Morehouse Share: \$100,000). Award: #2332411

Gosha, K., Haynes, L. S. (2023) Collaborative Research: **CISE-MSI: RCBP-ED: CCRI: TechHouse Partnership to Increase the Computer Engineering Research Expansion at Morehouse College.** National Science Foundation. Amount: \$383,532 (Morehouse Share: \$285,290). (Recommended for Funding as of 8/26/23)

Gosha, K., Gilbert, J., Seals, C., Ballenger, J., Salter, A. (2022) **BPC-AE: Collaborative: Evolution of the Institute for African Americans in Computing Sciences (IAAMCS).** National Science Foundation. Amount: \$2,274,000 (Morehouse Share: \$1,402,924). Award #2216622

Hodge, M., Muldrow, L., Gosha, K., Blumer, L. (2020) **HBCU STEM Undergraduate Success Research Center.** National Science Foundation. Amount: \$8,999,937. Award Date: 08/18/2020. Award #2010676 (Original CoPI).

Select Publications

Osho, O., Kennedy, C., Knijnenburg, B., Kraemer, E., Washington, G., Porter III, J., Sexton, S. and Gosha, K. (2023) **Societal Factors that Impact Retention and Graduation of Underrepresented Computer Science Undergraduates.** In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2023). Association for Computing Machinery, New York, NY, USA, 1399. <https://doi.org/10.1145/3545947.3576343>

Mackroy, K., Nelson, W., Gosha, K. (2022) **The Impact of Program Cost on Minority Participation.** ACM Special Interest Group in Computer Science Education (SIGCSE) Technical Symposium 2022. Providence, RI, USA. <https://dl.acm.org/doi/10.1145/3478432.3499128>

Clarke, N., Mondisa, J.L., & Gosha, K. (2021). **The Role of E-Mentoring in the African American Higher Education Experience (Work in Progress)** in Proceedings of the Annual American Society of Engineering Education (ASEE) Conference, July 26-29, 2021, Virtual Due to COVID-19. <https://peer.asee.org/37891>

YWCC is pleased to welcome six new faculty members for the 2023-2024 academic year:

Computer Science



Kasthuri Jayarajah

Data Science



Akshay Rangamani

Informatics



Nathan Malkin



Zhihao Yao



Shuai Zhang



Alisha Pradhan

13 additional members will serve as Senior University Lecturers and University Lecturers

AWARDS AND RECOGNITIONS

Jing Li, assistant professor of computer science, was awarded the Department of Energy Early Career Award for her research on "Towards Intelligent Scheduling for Adaptive Scientific Computing with Heterogeneity."

Guiling "Grace" Wang, distinguished professor of computer science, and IEEE Fellow, has won the IEEE Vehicular Technology Society 2023 Best Land Transportation Paper Award 4 years after publication, for its impact and high citation numbers.

Craig Gotsman, distinguished professor and ACM Fellow, was awarded a patent for an invention which uniquely describes a user's location while protecting their privacy.

Associate Professor Hai Phan and Ph.D. Candidate Kim Phung Lai's work, "XRand: Differentially Private Defense Against Explanation-Guided Attacks," earned one of 12 Distinguished Paper awards out of 8,777 submissions at the 2023 Association for the Advancement of Artificial Intelligence annual conference.

Suresh U. Kumar, senior university lecturer and director of entrepreneurial programs in NJIT's YWCC, has been elected by the Board of Directors of The Indus Entrepreneurs (TiE) as the next president of the New Jersey chapter, effective July 1, 2023.

2023 – 2024 Rankings and Recognition

#2 Public University in the U.S.

– Wall Street Journal/College Pulse

#4 Best Master's in Cybersecurity Degrees

– Fortune

#5 Online M.S. in Computer Science

– Fortune

#14 Online M.S. in Computer Science

– UniversityHQ

INDUSTRY RESEARCH COLLABORATIONS

Cristian Borcea, professor of computer science and associate dean for strategic initiatives, and AT&T recently published a paper on an AI model for cellular traffic prediction, known as STGCN-HO, which was presented at the 17th Annual IEEE International Conference on Sensing, Communication and Networking (SECON). They have also worked to deliver Enhanced 9-1-1 services by implementing advanced call routing techniques using AI and machine learning. Borcea furthermore collaborated with **Hai Phan, associate professor of data science**, and Qualcomm Technologies to invent Federated Learning System (FLSys) and Zone Federated Learning (ZoneFL), the first end-to-end, mobile-cloud federated learning (FL) systems that work effectively on smart phones.

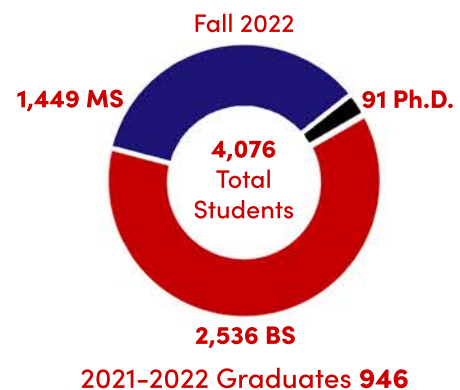
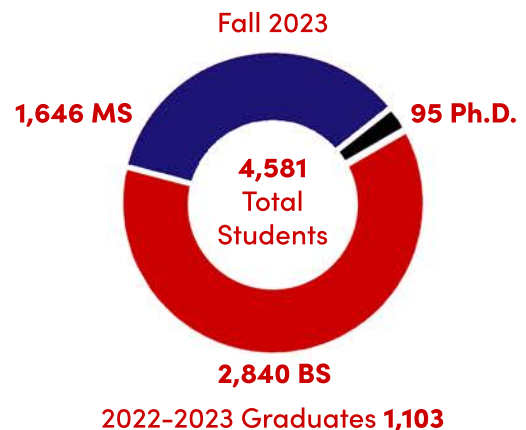
NJIT's Institute for Data Science, led by Distinguished Professor David Bader, ACM Fellow, is collaborating with Accenture to develop methods to mitigate risks arising in the use of open-source components in the software supply chain. The research applies knowledge graphs to model the connections between next-generation software bills of materials (SBOM) and the traceability of the software supply chain to identify security threats.

THE STRATEGIC GROWTH AREAS

Department of Data Science officially launched new **Ph.D. in Data Science and M.S. in Artificial Intelligence (AI)** programs in summer 2023.

YWCC awarded 1,103 degrees at all levels during the 2022-2023 academic year, marking a **14% increase in graduating students over the previous year.**

The Master's Pathway (3+1+1) Program, a partnership between NJIT and Fulbright University, Vietnam (FUV), welcomed its first class in fall 2023. The program allows FUV students to complete their fourth and final year of undergraduate study at NJIT, with an option to pursue an NJIT master's degree in Computer Science, Data Science or Software Engineering. Undergraduate credits earned will be applied to their FUV bachelor's degree.



At **Northeastern's Khoury College Of Computer Sciences**, we are resolute that computer science is for everyone, and that everyone should benefit from computer science. As a community, we are driven to use the power of computing to improve all aspects of life for all communities, ensuring equitable access to innovation that empowers and safeguards all people.

KHOURY COLLEGE EXPANDS TO NINE LOCATIONS

Khoury College has grown its global network of campuses with locations in Boston; Arlington, VA; London; Miami; Oakland, CA; Portland, ME; Silicon Valley; Seattle; Vancouver; and online.

RESEARCH HIGHLIGHTS
BEST PAPER AWARDS (2018-2023)

Khoury College faculty and students won best paper/test of time awards at the following conferences, forums and workshops: AAMAS, ACL, ACM, AISec, ANRW, CCS, CHI, COSN, DSN, EAPLS, EDBT, FPF, FDG, FAST, HRI, IEEE, IEEE CNS, ICDM, ISWC, KDD, NDSS, PETS, SecDev, SIGACCESS, SIGCOMM, SIGSOFT, SoSyM, TACAS, UNENIX Security, VEE, WiSec.

CAREER, YOUNG INVESTIGATOR AND SLOAN FELLOWSHIP AWARDS

From 2018-2023, the following members were awarded the Sloan Research Fellowship, Young Investigator, ASA, NSF CAREER, or DARPA Young Faculty Awards:

Christopher Amato, Jonathan Bell, David Choffnes, Seth Cooper, Cody Dunne, Ehsan Elhamifar, Paul Hand, Huy Le Nguyen, Lace Padilla, Robert Platt, Aanjan Ranganathan, Chang Tam, Jonathan Ullman, Jan-Willem Van De Meent, Byron Wallace, Daniel Wicks, Christo Wilson.

CONFERENCE GENERAL OR CO-CHAIRS (2018-2022)

Khoury College faculty have been general chair or co-chair for the following conferences:

AAAI, ACM AFT, ACM CI, DSAA, ECOOP, ITC, ICML, IMC, IEEE S&P, ISMB, IVA, KDD, NetSci, OOPSLA.

LATEST TENURED/TENURE-TRACK AND TEACHING FACULTY HIRES FOR 2023

- **196** full-time faculty
- **106%** increase in seven years
- **88** faculty outside of Boston

NEW FACULTY AT KHOURY COLLEGE 2023



INSTITUTES AND CENTERS

Led by Usama Fayyad, the **Institute for Experiential AI** solves core research problems centered on building real solutions in real contexts to make reliable and responsible AI that works effectively and cooperatively with humans.

Led by Olga Vitek, the Raymond Bradford Bradstreet Professor, the **Barnett Institute for Chemical and Biological Analysis** is a center of excellence in the development and application of technologies for biopharmaceutical characterization, proteomics, and systems biology.

The **Center for Inclusive Computing** was launched in 2019 with a goal to increase women in computing programs across the country

The **Cybersecurity and Privacy Institute**, which is housed in Khoury College, and lead by Executive Director and Associate Professor of Computer Science David Choffnes, is dedicated to safeguarding critical technology through research and education in collaboration with industry experts, government agencies, and global academic partners worldwide.

The **Network Science Institute (NetSI)** at Northeastern University is a multidisciplinary research community that supports innovative research and education in network science. NetSI brings together faculty, researchers, and students from diverse disciplinary backgrounds including physics, computer sciences, political sciences, business, communication, economics, and health sciences.

COOPERATIVE EDUCATION

Cooperative Education (co-op) is a cornerstone of our MS and undergraduate programs. Khoury College placed 2508 students in co-ops at 962 companies last academic year.

BY THE NUMBERS

- **94 TT/T faculty** - (31% interdisciplinary with another college)
- **4,089 undergraduate students**
- **39% of incoming undergraduate students identify as women or nonbinary**
- **2360 Align MS students, 55% identify as women or nonbinary**
- **48 combined undergraduate majors** across seven colleges
- **58% of undergraduate students enrolled in combined majors**
- **4 PhD programs** - computer science, cybersecurity, personal health informatics, network science
- **311 PhD Students, 55 incoming in 2023**

- Malihe Alikhani** | Assistant Professor | PhD, Rutgers University
- Laura Edelson** | Assistant Professor | PhD, New York University
- Mai ElSherief** | Assistant Professor | PhD, University of California, Santa Barbara
- Zhengzhong Jin** | Assistant Professor | PhD, Johns Hopkins University
- Tianshi Li** | Assistant Professor | PhD, Carnegie Mellon University
- Zhi Tan** | Assistant Professor | PhD, Carnegie Mellon University
- Xiao Yang** | Assistant Professor | PhD, Pennsylvania State University
- Elettra Bietti** | Assistant Professor |SJD, Harvard Law School
- Michael Ann DeVito** | Assistant Professor | PhD, Northwestern University
- Benjamin Gyori** | Assistant Professor |PhD, National University of Singapore
- Lace Padilla** | Assistant Professor |PhD, University of Utah
- Weiyan Shi** | Assistant Professor |PhD, Columbia University|California, Irvine
- Ildar Akhmetov** | Assistant Teaching Professor | PhD, Baikal State University
- Tehmina Amjad** | Assistant Teaching Professor | PhD, International Islamic University
- Akram Bayat** | Assistant Teaching Professor | PhD, University of Massachusetts Boston
- Ryan Bockmon** | Assistant Teaching Professor |PhD, University of Nebraska-Lincoln
- Richard Cobbe** | Assistant Teaching Professor | PhD, Northeastern University
- Brianna Dym** | Assistant Teaching Professor | PhD, University of Colorado Boulder
- Miguel Fuentes-Cabrera** | Assistant Teaching Professor | PhD, University of La Laguna
- Ariel Hamlin** | Part-time Lecturer |PhD, Northeastern University
- Youna Jung** | Associate Teaching Professor | PhD, Ajou University
- Jaydeep Mitra** | Assistant Teaching Faculty | PhD, Kansas State University
- Nadim Saad** | Assistant Teaching Professor | PhD, Stanford University
- Katherine Socha** | Associate Teaching Professor |PhD, University of Texas at Austin
- Shanu Sushmita** | Assistant Teaching Professor | PhD, Glasgow University
- Iraklis Tsekourakis** | Assistant Teaching Professor | PhD, Stevens Institute of Technology
- Rajagopal Venkat** | Assistant Teaching Professor | PhD, Washington University in St. Louis
- Chieh Wu** | Assistant Teaching Professor | PhD, Northeastern University
- Xiaoyi Yang** | Assistant Teaching Professor | PhD, Carnegie Mellon University
- Michael Correll** | Associate Research Professor | PhD, University of Wisconsin-Madison
- Christopher Le Dantec** | Professor of the Practice and Director of Digital Civics | PhD, Georgia Institute of Technology
- Juancho Buchanan** | Professor of the Practice | PhD, University of British Columbia

SCA School by the Numbers

Faculty:

- 37 full-time faculty, including 9 Full Professors, 8 Associate Professor, 10 Assistant Professors, 2 Professors of Practice, and 8 Lecturers.

Students:

- Over 1,100 current majors.
- 4 Years average time to degree.
- 75% of students stay in Northern Kentucky/Greater-Cincinnati region after graduation.

Current Programs

Undergraduate Majors

- [Applied Software Engineering](#)
- [Business Information Systems](#)
- [Computer Information Technology](#)
- [Computer Science](#)
- [Cybersecurity](#)
- [Data Science](#)
- [Health Informatics](#)
- [Library Informatics](#)

Graduate Degree Programs

- [Business Informatics](#)
- [Cybersecurity](#)
- [Health Informatics](#)

School News

- **A Center of Excellence:** NKU has had the NSA NCAE-C designation since 2015.
 - The Bachelor of Science in Business Information Systems and Master of Science in Business Informatics have their **AACSB accreditation** renewed in June 2021.
 - **ABET-accredited BS in Data Science program** (the first ABET-accredited DS program in the world) in the School of Computing and Analytics facilitates easy collaboration on cyber data analysis, AI, etc.
 - **K-12 teacher outreach:** NSA/NSF GenCyber grants to train HS teachers in cybersecurity, 2021-23. 25 teachers participating in 2023.
 - **K-12 student outreach:** 2023 CINSAM Cyber Academy for HS students covers topics from threat modeling to ethics. Co-led by HS teachers from the 2021 GenCyber program.
 - **16 years hosting the NKY Cybersecurity Symposium** for IT and legal professionals, co-organized with NKU Chase College of Law. Average annual attendance 400-500; numerous local and national corporate sponsorships.
 - **Active student cyber defense team** and NKCyber Club, placing in the top 2 for most of past 12 years in the Collegiate Cyber Defense Competition in a nine-state region which includes KY and OH.
 - Northern Kentucky University tops in Kentucky for **awarding computer science degrees to women**. NKU ranked 40th nationally, awarding 171 degrees in Computer Science with 21.1 percent going to women.
-

Technical excellence. Whole-brain thinking. Highly interdisciplinary work.

We are driven to push the boundaries of the field with exceptional work in programming languages, machine learning, robotics, network security, computer science theory, artificial intelligence, computational imaging, human-computer interaction, high-performance computing, networking, algorithms, mechanism design, and computer science education.

New Faculty

Core Tenure-track CS Faculty



Karan Ahuja
sensing and interaction techniques



Manling Li
multimodal information extraction



Kate Smith
quantum computing

Faculty of Instruction



David Demeter
artificial intelligence



Anastasia Kurdia
novel pedagogic methods

By the Numbers

Faculty: 43 tenure track, 12 faculty of instruction, one clinical faculty member, one senior lecturer, and 24 affiliated faculty

Undergraduate Students: 948 majors, 160 minors

Graduate Students: 155 PhD and 253 MS

MBAi: 43 students

MSAI: 44 students

Enrollment: 10,163 (AY 2022-23)

CS+X Connections



Our interdisciplinary community explores diverse areas of scientific and intellectual inquiry, including HCI, learning sciences, medicine, and statistics. Our faculty are leaders in the emerging fields of [CS+Economics](#) and [CS+Law](#).

Research Institutes

In collaboration with the UL Research Institutes' Digital Safety Research Institute, the [Center for Advancing Safety of Machine Intelligence \(CASMI\)](#) is establishing best practices for the evaluation, design, and development of machine intelligence that is safe, equitable, and beneficial.

The [Institute for Data, Econometrics, Algorithms, and Learning \(IDEAL\)](#) received a five-year, \$10 million NSF Phase II award to advance the theoretical foundations of data science.

Diversity Initiatives

Northwestern CS and the YWCA Evanston/North Shore were awarded a **2023 Racial Equity and Community Partnership grant** to support the [YW Tech Lab](#) economic empowerment training program.

In 2023, we provided support for 40 Northwestern CS students to attend the **Grace Hopper Celebration of Women in Computing**, and 19 students to attend the **Richard Tapia Celebration of Diversity in Computing Conference**.

Undergraduate Program

The student-led [Tech Ethics Initiative](#) guided by [Avery Keare](#), [Victoria C. Chávez](#), and [Natalie Araujo Melo](#) aims to prioritize the ethical dimensions of computer science and to embed ethics throughout the Northwestern CS curriculum.

Our new [Research Track](#) is designed to provide second-year students majoring in computer science with a structured and mentored introduction to the research process.

The [Design, Technology, and Research \(DTR\) program](#) is a fast-paced, multiple-quarter course structured around self-directed student research projects.

Awards

The Northwestern CS community is [recognized](#) for their accomplishments in research, education, and mentorship.

Brenna Argall was inducted into the AIMBE College of Fellows.

Christos Dimoulas and **Xiao Wang** received NSF CAREER awards.

Amil Dravid ('23) was named a finalist in the CRA 2023 Outstanding Undergraduate Researcher Awards.

PhD students **Lily Ge** and **Mara Ulloa** were awarded NSF Graduate Research Fellowships.

Kristian Hammond was elected as a 2023 AAAI Fellow.

Samir Khuller has been elevated to an ACM Fellow and was elected to the CRA Board of Directors.

PhD students **David Krasowska** and **Kirill Nagaitsev** received DOE Computational Science Graduate Fellowships.

Sam Kriegman was named a Schmidt Futures AI2050 Early Career Fellow.

PhD student **Vaidehi Srinivas** won a Northwestern Presidential Fellowship.

Xiao Wang received a 2023 Google Research Scholar Program Award and a J.P. Morgan AI Faculty Research Award.

PhD student **Chenkai Weng** received a J.P. Morgan AI Research Fellowship.

Industry Partnerships

Through the generous support of research partners, including Adobe Research and Dolby Labs, our faculty members and students collaborate with industry experts on innovative technologies.

At a Glance

R1 Status (Very High Research Activity)

FY 23-24 Research Funding: \$3.825M

Total Enrollment: 557

Master's Students: 83; PhD students: 28

Full Time Employees: 38

Highlights for 2023

- Two new UG programs in Cybersecurity and Artificial Intelligence were approved
- Hiring six new tenure-track faculty in '23-24
- Prof. Jadwisienczak appointed EiC of the Journal of Electronic Materials
- CS student awarded the NSF GRFP fellowship



Michael Braasch, Thomas Professor of Engineering, joins the 2023 class of Fellows in the Institute of Electrical and Electronics Engineers (IEEE). He earned his BS, MS and Ph.D. in Electrical Engineering at Ohio University and has been performing research with the Ohio University Avionics Engineering Center since 1985. He is internationally recognized for his work in characterizing GPS multipath and is one of the originators of the integrated multipath-limiting antenna for GPS. He has given invited lectures in Australia, Canada, China, France, New Zealand, Russia, Turkey and Ukraine.



OHIO's Union Green will soon be home to the newly named Russ Research Opportunity Center was officially approved by the Ohio University Board of Trustees during its August 2023 meeting and pays homage to the generous gift that made the building a reality and better distinguishes its research-focused mission. It will open this fall.



Intel awarded \$3 million to OHIO to serve as the lead institution for the Appalachian Semiconductor Education and Technical (ASCENT) Ecosystem. Led by the Director of OHIO's School of EECS, Avinash Karanth, and the chair of OHIO's Department of Physics and Astronomy, Eric Stinaff, this program will create an inclusive workforce development and training program to cultivate the next generation of skilled professionals for Ohio's emerging semiconductor industry.

Student Successes

- Electrical engineering graduate Seana McNeal (BSEE '06) received the Professional Achievement in Government award at the 2022 Women of Color in STEM conference.
- Computer science seniors Justin Garey, Liam Speakman, Kane Louderback and Alexander Nemecek, working with "Fostering My Journey", designed an app to help children in foster care.
- Computer science students participated in HACK OHI/O and organized BlossomHack, a regional competition.
- Electrical engineering grad student receives an "Ohio University Student Enhancement Award" for "Exploration of Novel Europium-doped Red Phosphor with Magnetically Tunable Chromaticity".

Meet Our New Faculty



Animesh Yadav

Assistant Professor

6G and beyond networks, non-terrestrial networks (NTN), and radar signal processing



Patricia Lindner

INVITE Assistant Professor of Instruction



Kevin Plis

Visiting Assistant Professor of Instruction

At a Glance

Old Dominion University's (ODU) Computer Science (CS) Department has grown in faculty, students, and quality.

The Bachelor of Science in CS program tied for 192nd out of 554 undergraduate CS programs in the nation, and grew in enrollment by about 45% since 2014. The Master of Science in CS program about doubled in enrollment since 2016. In terms of R&D expenditures, ODU CS is among the top 25% of among CS departments nationwide.

Degree Programs

Undergraduate:

- Bachelor of Science in Computer Science
- Bachelor of Science in Computer Science, Teaching Licensure

Graduate:

- Master of Science in Computer Science
- Master of Science in Computer Science with a Concentration in Information & Communications Technology
- Linked BSCS & MS in Computer Science
- PhD in Computer Science

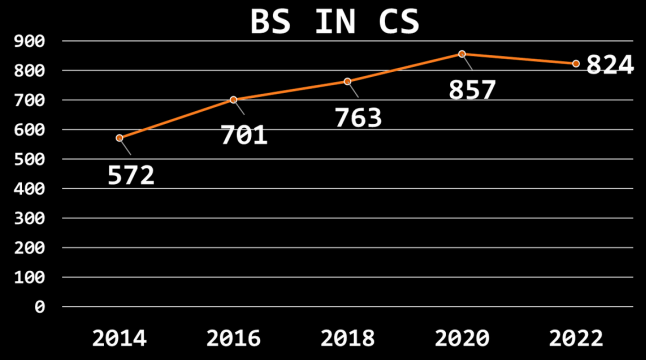


Learn more at www.cs.odu.edu

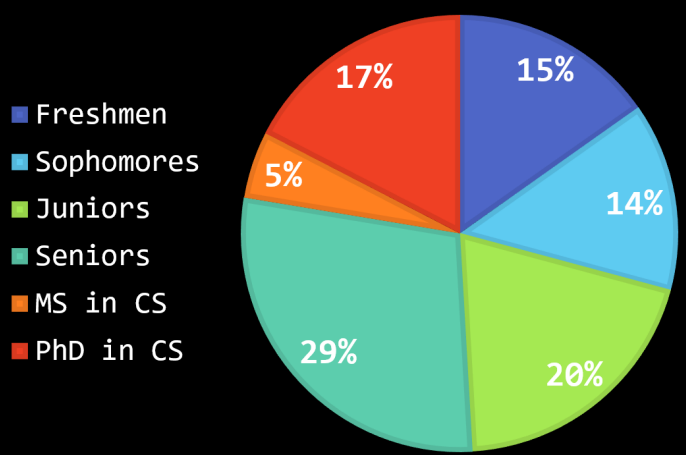
News & Events

- **CS4MS summer workshop with The Center of Educational Partnerships (TCEP):** This summer, ODU CS collaborated with TCEP to help inform local middle school teachers about ways to integrate CS skills into their classrooms.
- **Collaboration with Thomas Jefferson National Accelerator Facility (Jefferson Lab):** Dr. Nikos Chrisochoides (Richard T. Cheng Endowed Professor and Eminent Scholar in ODU CS) and his Center for Real-Time Computing (CRTC) group worked with Jefferson Lab staff scientist, Dr. Gagik Gavilian, to use AI in nuclear physics data analysis, potentially saving the lab millions of dollars per year.
- **Research Experiences for Undergraduates (REU) program:** This summer, ODU CS faculty mentored 7 REU students from other universities to foster development of their skills as researchers.
- **New faculty members:** ODU CS welcomes Ms. Nisha Polawar (Lecturer), Dr. Ashok Kumar Veerasamy (Lecturer), Ms. Nasreen Muhammad Arif (Lecturer), Dr. Bikalpa Neupane (Adjunct Assistant Professor), Mr. Karthik Navuluri (Adjunct Instructor), Dr. Frank Liu (Professor and Director of the School of Data Sciences).

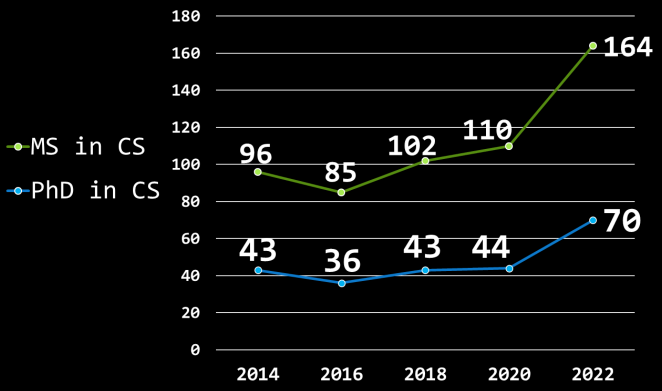
DEGREE PROGRAM GROWTH



SPRING 2023 CS HEADCOUNT



GRADUATE ENROLLMENTS IN CS



Faculty

- 104 Academic faculty
- 2 Members of the National Academy of Engineering
- 23 Professional society fellows
- 28 Young investigator/CAREER awards

Research

- \$17.1M in research expenditures (2022–2023)

Programs and Students

- Electrical and computer engineering (B.S., M.S., MEng, Ph.D.)
- Computer science (B.S., M.S., MEng, Ph.D.)
- Robotics (M.S., Ph.D.)
- Artificial intelligence (M.S., Ph.D.)
- Online postbaccalaureate degree in computer science (B.S.)
- Online 4-year degree in computer science (B.S.)
- Enrollment (Fall 2022)
 - 4,846 undergraduate students
 - 301 master's students
 - 204 doctoral students
- Degrees awarded (2021–2022)

	Bachelor's	Master's	Doctoral
ECE	114	48	16
AI	--	4	0
CS	877*	88	20

**Top in the nation (inside engineering), ASEE*



Jen-Hsun and Lori Huang Collaborative Innovation Complex

Harnessing one of the nation's most powerful supercomputers, Oregon State University faculty and students will solve the world's greatest challenges. The \$200 million complex — including a \$50 million gift from NVIDIA founder and CEO Jen-Hsun Huang and his spouse, Lori — will increase OSU's support for the semiconductor and technology industry in Oregon and beyond. The Huangs are OSU College of Engineering graduates.

The Jen-Hsun and Lori Huang Collaborative Innovation Complex will be a dynamic team-based transdisciplinary research and teaching center. In the complex, creative, driven faculty and students will come together to solve critical challenges facing the world in areas such as climate science, oceanography, sustainability, and water resources. The complex will harness one of the nation's most powerful supercomputers, a cleanroom and advance research and learning in artificial intelligence, robotics and materials science.

The complex underpins OSU's research and education efforts supporting the semiconductor and broader microelectronics industry. The complex also will support innovation, entrepreneurship, and partnerships with industry, while helping to prepare bachelor through Ph.D. degree graduates for Oregon's workforce and beyond. The three-story, 150,000 square-foot complex is being designed and is planned to open in 2025.

The Oregon Research and Teaching Security

Operations Center aims to address the shortage of trained cybersecurity professionals while serving the security needs of regional underserved entities — such as small local government agencies, K-12 schools, and nonprofit organizations — who struggle to meet their cybersecurity needs.

Oregon State University received \$4.8 million from the National Science Foundation's CyberCorps: Scholarship for Service program to fund scholarships for cybersecurity students and to support ORTSOC.

Studies have shown that to best prepare students for careers in cybersecurity, experiential learning is the key, and ORTSOC is a **“teaching hospital”** for cybersecurity operations.



NEW FACULTY 2023



ASSISTANT PROFESSOR

SOOYEON JEONG

Research Area: Human-Computer Interaction

Assistant Professor Sooyeon Jeong's research focuses on designing and deploying interactive AI agents that can improve people's lives by providing personalized support based on each user's needs, traits, and behaviors. Jeong earned her MSc and PhD in Media Arts and Science from MIT Media Lab. Prior to that she received her BS and MEng from the Department of Electrical Engineering and Computer Science (EECS) at MIT. Before joining the faculty at Purdue, she spent a year as a National Research Service Award (NRSA) T32 Postdoctoral Fellow at the Center for Behavioral Intervention Technologies at Feinberg School of Medicine at Northwestern University.

US NEWS RANKS PURDUE

#18	#20
OVERALL UNDERGRAD	OVERALL GRADUATE
#6	#8
CYBERSECURITY	SOFTWARE ENG
#13	#15
SYSTEMS	DATA ANALYTICS

CSRANKINGS.ORG RANKS PURDUE

#14	OVERALL	
#2	#3	#8
SECURITY	SOFTWARE ENG PROGRAMMING LANGUAGES	SYSTEMS
#11	#16	
CRYPTOGRAPHY COMPUTATIONAL BIO	THEORY GRAPHICS & VISUALIZATION	

FACULTY MEMBERS

74
TENURED /
TENURE TRACK

7
PROFESSORS
OF PRACTICE

DEGREES AWARDED
2021-22

544 BS | 139 MS | 48 PhD

AWARDS AND PROMOTIONS



NSF CAREER AWARD

Simina Brânzei received an NSF CAREER award in 2023 for her project titled, "Dynamics of Searching for Equilibria."

DONGYAN XU Z. BERKAY CELIK ANIKET KATE

// Purdue selected as partner on University Transport Center focused on cybersecurity and funded by DOT.

DONGYAN XU ELISA BERTION Z. BERKAY CELIK NINGHUI LI MING YIN

// NSF sponsored Institute for Agent-based Cyber Threat Intelligence and Operation (ACTION).

SUNIL PRABHAKAR

// Named Vice Provost of Faculty Affairs at Purdue University

ANTONIO BIANCHI

// 2022 Google ASPIRE Award

Z. BERKAY CELIK

// 2022 Google ASPIRE Award

PURDUE CS 60TH

// April 26, 1963, Purdue University dedicated its new high-speed IBM 7090 digital computer – and used the occasion to celebrate having launched the nation's first academic computer science department a few months earlier.

ALEX PSOMAS

// Google AI for Social Good Award

NINGHUI LI

// Outstanding Contributions Award from ACM SIGSAC

PATRICK WOLFE

// Named provost and executive vice president for academic affairs and diversity

BEDRICH BENES

// Named named editor-in-chief of Graphical Models

ALEX POTHEN

// Named Fellow of the ACM

MUHAMMAD SHAHBAZ

// Part of the multi-university ACE Center for Evolvable Computing. A JUMP 2.0 center funded by by Semiconductor Research Corporation (SRC) and DARPA, Semiconductor Research Corporation (SRC) and DARPA

\$16
MILLION

RESEARCH
EXPENDITURES

FY2022

3 UNDERGRADUATE DEGREES

Computer Science | Data Science | Artificial Intelligence

AN ERA OF GROWTH

205% Increase growth in undergrad population over 10 years (2013-2023)

2,494 CS Majors (9 Tracks)

477 DS Majors (program began 2017)

68 AI Majors (program new in 2023)

UNDERGRADUATE WOMEN POPULATION

Undergraduates – 23%

SUPPORT

171 RAs | 219 TAs | 9 Fellowships

GRADUATE STUDENTS

568 MS and PhD Students

107% Increase growth in grad population over 10 years



Computer and Cyber Sciences

At Regis University, Anderson College of Business and Computing, we believe in empowering students to expertly design and implement computational and cybersecurity solutions using the strategic thinking needed to solve the world's most challenging problems in a socially just manner.



Degrees

- Computer Science
- Cybersecurity
- Data Science
- Information Technology
- Software Engineering



Program formats

Traditional campus & online CS,
Accelerated Online Degrees



Professional credentials
Certificates to sharpen skills

Leading the way

First online **BSCS program accredited by the Computing Commission of ABET.**

Designated a **National Center of Academic Excellence in Cyber Defense** by the NSA and DHS

Annual host of the **Rocky Mountain Collegian Cyber Defense Competition**

Common Good Network a business focused technology ecosystem that creates pathways for innovation, thereby transforming and improving society

Faculty Highlights

Hugo Bergier, Associate Professor with Sorbonne Center InterPARES logic-based AI ontologies grant recipient.

Pam Smallwood, Associate Professor Completed NSF Award to author CS Computer Architecture POGIL concepts.

Doug Hart, Professor
Mike Busch, Associated Professor
Recipients of a Small Business Technology Transfer award to provide a reinforcement learning-based decision support system for battlefield medics.

Richard Blumenthal, Professor
CS2023, *Steering Committee*
ACM Committee on Professional Ethics, *Executive Board*
ACM Computers and Society, *Editor-in-Chief*

Department Chair



Richard Blumenthal, Ph.D.

rblument@regis.edu

303.458.4304



Rensselaer Polytechnic Institute Computer Science Department

<https://science.rpi.edu/computer-science>

Quick Facts

LOCATION

The 275-acre Rensselaer campus is located on a hill in a beautiful park-like setting, with a striking combination of traditional ivy-covered buildings and modern facilities. The campus overlooks historic downtown Troy, New York, which is located on the Hudson River.

FACULTY

- 25 Tenure Track Faculty
- 8 Teaching Faculty
- 2 ACM Fellows
- 4 IEEE Fellows
- 3 AAAS Fellows
- 2 AAI Fellows
- 9 NSF CAREER Award winners

FUTURE OF COMPUTING INSTITUTE

The Future of Computing Institute brings together engineers, scientists, business leaders, and humanities experts to collaborate on research addressing challenges facing national and global security including energy, water, and food; climate; human health; and economy and prosperity. New computing paradigms, infrastructure, languages, and software services are developed to define the next generation of composable internet technologies, with special attention to the potential ethical, policy, economic, and social impacts.

For general inquiries, information, or questions, contact:

Tracy Hoffman

Graduate Program Administrator
(518) 276-8419
morizt@rpi.edu

<https://www.cs.rpi.edu>

Students in Computer Science are exposed to rich and varied areas such as AI, Machine Learning, Data Mining, Network Science, Semantic Web, Computer Vision, Graphics, High Performance Computing, Distributed Computing, Programming Languages, Information Trust, Privacy, Safe Autonomy, Blockchains, Computational Economics, Bioinformatics, and so on.

DEGREES OFFERED

Computer Science B.S., M.S., Ph.D.

1,291 B.S., 113 M.S., and 50 Ph.D. degrees awarded over the last four years

AREAS OF GRADUATE RESEARCH

- Algorithms and theory
- Artificial intelligence and Machine Learning
- Autonomous systems
- Bioinformatics
- Computational finance
- Computer vision; biomedical image analysis
- Concurrent programming and cloud computing
- Data mining
- Decentralized systems (Blockchains)
- Distributed and large-scale simulation
- Distributed algorithms and systems
- Economics and computation
- Edge and cloud-computing, and IoT
- Graphics and visualization
- Information trust
- Knowledge graphs and ontologies
- Network science
- Privacy and security
- Program analysis and verification
- Quantum computing
- Semantic web and web science

AFFILIATED RESEARCH CENTERS

- Center for Computational Innovation
- Data Science Research Center
- Institute for Data Exploration and Applications
- Network Science and Technology Center
- Rensselaer-IBM Artificial Intelligence Research Collaboration
- Tetherless World Constellation

NEW FACULTY HIRES

Tianfan Fu (Spring'24)
PhD, Georgia Tech

AI for drug discovery, healthcare and science.



Ziniu Hu (Spring'24)
PhD, UCLA

Neuro-symbolic reasoning, knowledge graphs, natural language processing.



Radoslav Ivanov
PhD, U. Penn

Safe and secure autonomous systems, neural network verification, cyber-physical system security, sensor fusion.



Yao Ma
PhD, Michigan State

Machine learning with graphs, trustworthy and data-centric AI.



Mohammad M. Amiri
PhD, Imperial College London

Collective intelligence, machine learning, data science, information theory, privacy.



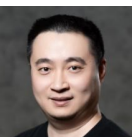
Oshani Seneviratne
PhD, MIT

Decentralized systems (web and blockchain), knowledge graphs, artificial intelligence, and health informatics.



Lei Yu
PhD, Georgia Tech

Security and privacy, trustworthy AI, machine learning systems, Cloud and mobile computing





1570

CS students
(BS/MS/PhD)
Fall 2023

98%

Average BS/MS
Employment
Rate

58

Peer-reviewed
Publications in
2022

#63

Undergraduate
Computer Science
US News & World Report

#5

University Co-op
Program

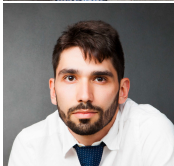


Recent awards

Weijie Zhao, Toward Secure and Trustworthy Tree Models



Leon Reznik, SMORES: Smarter Microbial Observatories for Realtime Experiments



Arthur Azevedo de Amorim, Mechanized Cryptographic Reasoning in Separation Logic

New Tenure-Track Faculty



Richard Lange
Cognitive Science
and Brain-Inspired
Computing
Ph.D., U Rochester

Student highlights

- ★ RIT is home to the AWARE-AI National Research Traineeship Program, in which CS-affiliated PhD students **Justin Namba**, **William Gebhardt**, and **Michael Peechatt** have been awarded funded traineeships.
- ★ **Zohair Hassan**, PhD student, won the Best Student Paper award at the 2023 Fundamentals of Computation Theory conference.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING PROGRAM

ECE BY THE NUMBERS

104 PHD
107 MS
806 UNDERGRAD

36 FACULTY MEMBERS

STUDENT BODY



18% FEMALE
64% GRADUATE INTERNATIONAL STUDENTS

POST-GRADUATE EMPLOYMENT

Meta IBM
Marvel Procter & Gamble
Barclays Oracle
CellGain Revature
AT&T & more!

#11 NATIONAL RANKING OF ACADEMIC SUBJECTS

DEGREE OPTIONS

PHD
MS
Thesis or Non-Thesis
BS/MS
CERTIFICATE
UNDERGRADUATE

MACHINE LEARNING

PhD, MS, and Certificate only

DEPARTMENT HIGHLIGHTS

- NEW Machine Learning Concentration For MS Students
- Three Graduate Certificate Programs including Socially Cognizant Robotics Certificate with SOCRATES program and the Cybersecurity and Machine Learning Certificate Programs
- Eight New Faculty Members including Dr. Sasan Haghani, Dr. Shirin Jalali, Dr. Daniel Burbano Lombana, Dr. Shriram Ramanathan, Dr. Guosong Yang, Dr. Dov Kruger, Dr. Demetrios Lambropoulos, and Dr. Zhao Zang

Data driven decision making is integral to the world's most influential industries. Our mission is to enable students to real-world engineering problems.

\$10M NEW RESEARCH GRANTS

RESEARCH HIGHLIGHTS

- NSF Grant for Design of MIMO Radar with Sparse Linear Arrays
- DARPA Grant for Development of Smart Bandages
- NSF Grant for Hardware-accelerated Trustworthy Deep Learning
- NSF National Research Traineeship (NRT) Grant for Socially Cognizant Robotics
- Emina Soljanin receives NSF Grant for Advancing Quantum Key Distribution

FACULTY AND STUDENT HIGHLIGHTS

- The ECE Department RECEIVED the 2023 Scholarship Award from the **7x24 Exchange Metro New York Chapter** for its participation in the University Challenge Competition.
- The National Academy of Inventors (NAI) has named Professor **Dr. Mehdi Javanmard** one of 95 members of the 2023 senior class.
- The N2Women Awards Board selected **Dr. Yingying (Jennifer) Chen** to receive the N2Women Stars in Networking and Communications Award.
- **Dr. Laleh Najafzadeh** is the recipient of a new NIH award for a project entitled "Augmenting Implanted Neuroprosthetic with Targeted Health Monitoring for Spinal Cord Injury - the lifeline."
- **ECE/Winlab faculty team** awarded \$1M grant from the national science foundation (NSF) for NSF Rings Project on real-time machine learning in distributed edge cloud environments

2023 UNDERGRAD CAPSTONE

- 71 teams (247 students)
- 60 judges from industry and academia selected top 10 teams
- Best in Research, Best in Impact, Best in Commercialization
- 3 Calbiati Entrepreneurial awards



APPLY NOW for FALL 2024!



NEW FACULTY



HADI AKBARPOUR, PH.D.

Assistant Professor

Artificial Intelligence, Computer Vision, Autonomous Systems, Remote Sensing and Robotics



QINGLEI CAO, PH.D.

Assistant Professor

High-performance Computing (HPC) and Artificial Intelligence (AI)



NAN CEN, PH.D.

Assistant Professor

Wireless Networks, Intelligent Networking Control, Wireless Optical Networks, Software Defined Networks and Digital Twin



MICHAEL LILJGREN, M.S.

Instructor

Computer Organization and Architecture

ABOUT SLU™

Founded in 1818, Saint Louis University is one of the nation's oldest and most prestigious Catholic institutions. Rooted in Jesuit values and its pioneering history as the first university west of the Mississippi River, SLU offers more than 13,500 students a rigorous, transformative education of the whole person. At the core of the University's diverse community of scholars is SLU's service-focused mission, which challenges and prepares students to make the world a better, more just place.

13,546

STUDENTS FROM ALL 50 STATES AND 87 COUNTRIES

2,022

FACULTY MEMBERS

\$58 Million

EXTERNAL RESEARCH EXPENDITURES

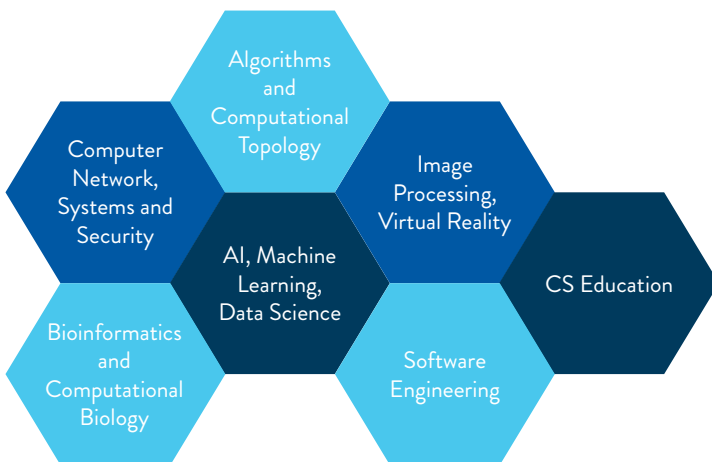
\$1.4 Billion

UNIVERSITY ENDOWMENT

630+

UNDERGRADUATE AND GRADUATE STUDENTS IN CS PROGRAMS

RESEARCH CLUSTERS





Stony Brook
University

Department of
Computer Science
www.cs.stonybrook.edu

New Faculty Hires in Fall 23

- Ting Wang – Cybersecurity
- Mohammad Javad Amiri – Database management
- Abid Malik – High-performance computing

Faculty Awards and Leadership

- Three new NSF CAREER Awards – Shubham Jain, Stanley Bak, Shuai Mu
- Haibin Ling – IEEE Fellow
- Michael Bender – EATCS Fellow
- Allen Tannenbaum – IFAC Fellow
- Erez Zadok – Editor-in-Chief of ACM Trans. on Storage

PhD Student Success

- Several PhD student and faculty teams won best paper awards in major CS conferences – best paper award at SYSTOR'23, honorable mention at CHI'23, best student paper award ICLP'23, Influential Paper Award in ASPLOS'23 and Distinguished paper award in ASPLOS'23.

Rankings

- Stony Brook Computer Science ranks #23 overall in CSrankings.org with two individual subfields, *computer vision* and *visualization*, ranked within the top-10 and five other subfields – *Security*, *Mobile Computing*, *Measurement & Performance Analysis*, *Web & IR* and *Logic & Verification* ranked within top-20.
- US News and World Report ranks the graduate program top #46 in the country.

New Programs

- A new graduate program in Data Science started in Fall'23 jointly offered by two departments - Computer Science and Applied Math & Stat.

By the Numbers Fall 2023

1400+ Undergraduates

400+ Masters students

240+ PhD students

48 Tenure stream faculty

12 Teaching faculty

\$15M+ Annual research spending

ANNOUNCING OUR NEW DEAN



Andrew Sears

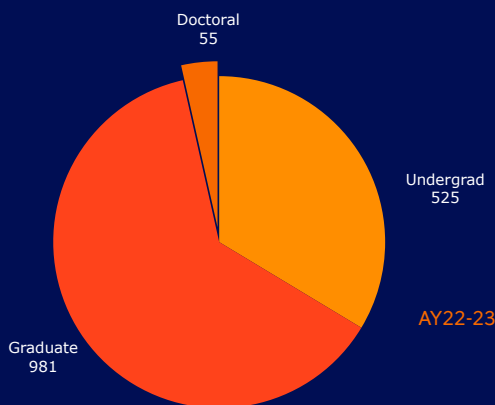
Dr. Andrew Sears began his tenure as Dean on Aug. 1, 2023. Coming to the iSchool from Penn State, Sears' research explores issues related to human-centered computing and accessibility.

1,576
STUDENTS

24
COUNTRIES
REPRESENTED

43 FULL-TIME
FACULTY

13,000+ ALUMNI



RESEARCH AND AWARD HIGHLIGHTS

Rachel Clarke received an IMLS grant to investigate barriers to entrance, retention, and advancement in the library workforce, and develop initiatives that reduce equity gaps and address issues of diversity, equity, and inclusion.

Sevgi Erdogan is Co-PI with the University of Maryland Center for Environmental Science on an NSF grant to develop a model to predict how social, economic and policy changes impact water quality, and how changes in water quality influence human behavior and decision-making.

Carlos Caicedo received an NSF grant to investigate ways to share the electromagnetic (radio-frequency) spectrum using an automatic spectrum management system with the potential for order-of-magnitude gains over current static allocation practices.

Kevin Crowston and Carsten Oesterlund are collaborating on an NSF grant that will build our understanding of how to enable non-expert volunteers in a citizen-science project to contribute to analyses of large volumes of data.

LaVerne Gray was honored with the 2023 ALISE/Norman Horrocks Leadership Award.

Sebastian Modrow received the 2023 ASIST 2nd place best short paper award.

Beth Patin received the ALISE Excellence in Teaching: Early Career Award as well as the ALISE Best Paper Award in 2022 and 2023.

Steve Sawyer has an NSF grant to examine the ways in which online labor platforms are reshaping work, with a focus on how they sustain their market-making roles, and how workers and employers adapt to these changes.

NEW FACULTY



Jaime Banks
Associate Professor



Renate Chancellor
Associate Professor and Associate Dean for DEIA



Eunjeong Cheon
Assistant Professor



Christopher Dunham
Assistant Teaching Professor



Sevgi Erdogan
Associate Professor



Laurie Feger
Assistant Teaching Professor



Kelvin King
Assistant Professor



Yiqi Li
Assistant Professor



Sebastian Modrow
Assistant Professor



Christopher Perrello
Assistant Teaching Professor



Computer Science

TENNESSEE TECH

BY THE NUMBERS FALL 2023

- #1** FALL 2023
COMPUTER SCIENCE HAS ASCENDED TO TENNESSEE TECH'S NUMBER ONE UNDERGRADUATE DEGREE PROGRAM BY ENROLLMENT.
- ↑12%** INCREASED B.S., M.S. AND PH.D. DEGREES CONFERRED TO 157
- ↑** INCREASED ENROLLMENT OF FIRST-TIME FRESHMEN TO 173
- ↑4.3%** INCREASED FIRST-TIME FRESHMEN RETENTION TO 83.2%
- ↑14%** INCREASED UNDERGRADUATE MAJORS TO 722
- ↑41%** INCREASED DATA SCIENCE AND ARTIFICIAL INTELLIGENCE CONCENTRATION ENROLLMENT TO 103

FISCAL YEAR 2023 RESEARCH

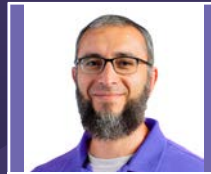
- PROPOSALS **\$8,910,411**
- AWARDS **\$2,526,227**
- ACTIVATIONS **\$3,204,367**

OUR MISSION IS TO BE WIDELY RECOGNIZED FOR ENABLING STUDENTS TO HAVE GLOBAL IMPACT THROUGH INNOVATIVE, QUALITY PROGRAMS AND RESEARCH THAT EMPHASIZES COLLABORATIVE PARTNERSHIPS AND THE SUCCESS OF A DIVERSE STUDENT, FACULTY AND ALUMNI COMMUNITY.



PROFESSOR

ANTHONY SKJELLUM, PH.D.



ASSOCIATE PROFESSOR

AMR HILAL, PH.D.



ASSISTANT PROFESSOR

AMANI ALTARAWNEH, PH.D.



ASSISTANT PROFESSOR

ZULKAR NINE, PH.D.



ASSISTANT PROFESSOR

MIR PRITOM, PH.D.



SENIOR LECTURER

ERIC BROWN



LECTURER

BENJAMIN BURCHFIELD



INSTRUCTOR

RAJESH MANICAVASAGAM



LECTURER

JACOB STRICKLER

2023

INCREASED FACULTY BY NINE MEMBERS

C/S NEW FACULTY



Recent Faculty Hire



Uma Maheswari Chinta
Assistant Professor of Practice

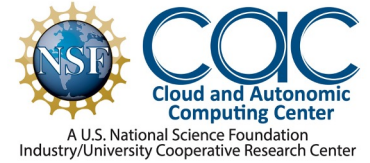
Ph.D., Computer Science, University of Colorado at Colorado Springs (2023)

Facial Analysis, Emotional Expression, Machine Learning, and Algorithms

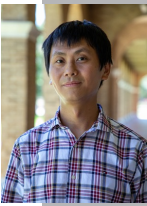
Organizational News

Accelerating Impact through Partnerships

National Science Foundation Phase-II IUCRC Center on Cloud and Autonomic Computing conducts fundamental research and development in collaboration with University of Arizona and industry and government partners, including the National Security Agency, Los Alamos National Laboratory, Dell EMC, Lubbock County, Naval Information Warfare Center, Department of Homeland Security, Blackfur, Legendary, and Defense Information Systems Agency.



Research Highlights



Dr. Wei received a **\$320K grant from the National Science Foundation** Computing and Communication Foundations core program for his research on quantum computing and quantum algorithms. Dr. Wei also leads a collaborative project for developing scientific benchmarks that enable researchers to conduct and evaluate quantum computing methodologies with a **\$750K grant from the Department of Energy** via the Funding for Accelerated, Inclusive Research (FAIR) initiative.

Dr. Namin received a **\$400K grant from the National Science Foundation** to study social engineering attacks. This research explores characteristics of social engineering attacks via an interdisciplinary collaboration with researchers from the department of Psychology and helps researchers to better comprehend the nature of cyber-attacks launched through social engineering.



Dr. Lim received a **\$300K grant from the National Science Foundation** via the EARly-concept Grants for Exploratory Research (EAGER) program for developing a Cyber-Aerial Computing curriculum that improves sky-of-privacy-things education through a modular-based integrated framework.



Degrees Offered

- Bachelor of Science in CS
- Master of Science in CS
- Master of Science in Software & Security Engineering
- Doctor of Philosophy (PhD) in CS
- Certificate in Software Engineering
- Certificate in Security

Tier One Research University

Carnegie Classification of Very High Research Activity University

Texas Tech University surpassed the \$100 million mark in sponsored research awards in 2021, including a record of more than \$50 million in federal awards and with total research expenditures equaling \$191.3 million.



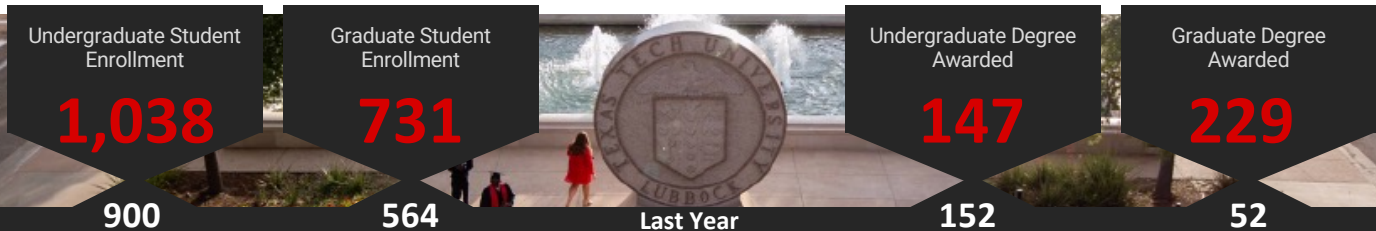
Texas Tech University offers a comprehensive series of programs, services, initiatives, and organizations to underrepresented students, students of color, and first-generation students.

Other Highlights

HackWesTX 2023: West Texas's Biggest Premier Student-Run Hackathon. Held at the Texas Tech University Innovation Hub on September 16th and 17th and hosted by the Google Developers Student Club and ACM Student Chapter. For 24 straight hours, students pour out passion and innovation and converge to create something truly extraordinary. More than 300 students registered for the event, and they worked with industry mentors and developed solutions that could shape the future.



We have faculty openings!
We hire at all ranks
Visit us at: www.cs.ttu.edu





New Faculty Hires:



Zhiyuan Li
Assistant Professor
(PhD Princeton)
Machine learning theory, analysis of deep learning, computational and sample efficiency of optimization methods.



Siddharth Bhandari
Research Assistant Professor
(PhD Tata Institute)
Coding theory, information theory, sampling algorithms, treatment effect estimation.



Anand Bhattad
Research Assistant Professor
(PhD University of Illinois Urbana-Champaign)
Computer vision. Data-driven approaches for modeling and recreating the visual world.



Emily Diana
Research Assistant Professor
(PhD University of Pennsylvania)
Ethical algorithm design and socially responsible machine learning.



Jungo Kasai
Research Assistant Professor
(PhD University of Washington)
Natural language processing, machine learning, artificial intelligence.



Theodor Misiakiewicz
Research Assistant Professor
(PhD Stanford)
Statistical and computational aspects of deep learning; statistics and machine learning.



Liren Shan
Research Assistant Professor
(PhD Northwestern)
Approximation algorithms, graph theory, and algorithmic game theory.



Santhoshini Velusamy
Research Assistant Professor
(PhD Harvard)
Sublinear optimization, streaming algorithms, algorithmic game theory.



Jiawei (Joe) Zhou
Research Assistant Professor
(PhD Harvard)
NLP and machine learning; structured prediction for understanding language.

Research Highlights:

- Prof. Jinbo Xu was named Fellow of the International Society for Computational Biology.
- Prof. Siddharth Bhandari received the ACM India 2022 Doctoral Dissertation Award.
- Prof. Karen Livescu's paper "Deep Canonical Correlation Analysis" was Runner Up for the ICML 2023 Test-of-Time Award.
- Students Kshitij Patel and Nimit Joshi received Best Student Paper Honorable Mention at the ICML 2023 Workshop on Federated Learning and Analytics in Practice.
- Student Chung-Ming Chien was awarded a Taiwan Ministry of Education GSSA Award.
- TTIC faculty and students published in major AI and Theory research venues including AAI, ACL, AISTATS, COLT, CVPR, ECCV, EMNLP, FOCS, FORC, ICASSP, ICLR, ICML, ITCS, NAACL, NeurIPS, RSS, SODA, STOC, and UAI.
- TTIC faculty and students showcased robotics at the Museum of Science and Industry Robot Block Party and engaged in a range of outreach activities.
- TTIC is proud to be a member of the IDEAL NSF TRIPODS Phase II institute, and more broadly, TTIC faculty have received significant funding awards from the NSF, NIH, DARPA, the Simons Foundation, and many corporate sponsors.

2023 PhD Graduates:

Congratulations to 2023 PhD graduates Falcon Dai (advised by Matt Walter), Andrea Daniele (advised by Matt Walter), Omar Montasser (advised by Nati Srebro), Rachit Nimavat (advised by Julia Chuzhoy), Shane Settle (advised by Karen Livescu), Bowen Shi (advised by Karen Livescu), and Qingming Tang (advised by Karen Livescu)!

Research Assistant Prof. Placements:

Katik Goyal joined Georgia Tech as an Assistant Professor.

By the numbers (Fall 2023):

PhD Students: 38
Research Assistant Professors: 16
Tenured and tenure-track faculty: 13

Announcements:

Toyota Technological Institute at Chicago (TTIC) is celebrating its 20th anniversary this year, marking 20 years since its operations started in 2003.



University at Buffalo

Department of Computer Science and Engineering

DEPARTMENT HIGHLIGHTS

DEPARTMENT NEWS

- **Siwei Lyu** has been named a distinguished member of the world's largest computing society Association for Computer Machinery (ACM)
- **Wenyao Xu** received the SUNY Chancellor's Award
- The National Science Foundation has awarded **Shambhu Upadhyaya** a **\$3,418,604** grant for "CyberCorps®: Scholarship for Service: An Interdisciplinary Cybersecurity Program with Technical and Managerial Paths"
- **Atri Rudra** secured substantial funding of **\$377,000** for his visionary project titled "Collaborative Research: Hardware-Aware Matrix Computations for Deep Learning Applications"
- **Kenny Joseph** won Minerva's FY22 DECUR Partnership competition, securing **\$400,000** for his project investigating the influence of China's Belt and Road Initiative (BRI) on global local communities
- **Tevfik Kosar** has been awarded a **\$600,000** grant from the NSF for his project: "Towards Zero-Carbon Data Movement at the HPC and Cloud Data Centers"
- **Matthew Knepley** received **\$170,000** to collaborate with Dr. Mark Adams at Lawrence Berkeley National Laboratory on preserving metriplectic structure in high-temperature plasma evolution equations

AI INSTITUTE FOR / EXCEPTIONAL EDUCATION

UB has secured an incredible **\$20 million grant** from the National Science Foundation to create the National AI Institute for Exceptional Education. Dedicated to advancing artificial intelligence systems, the aim is to identify and support young children facing difficulties with speech and language processing.

NSF CAREER AWARDS

Three UB CSE faculty have received the NSF CAREER Award:

- **Erdem Sariyuce** received a **\$555,000** award for his research: Temporal Network Analysis: Models Algorithms and Applications
- **Mingchen Gao** received a **\$578,500** award for her research: Deploying Transferable Medical Imaging Diagnosis System in Diverse Environments
- **Ziming Zhao** received a **\$564,000** award for his research on Rethinking Trusted Execution Environments for Embedded and IoT Systems

SECURING CONTAINERS FOR CLOUD COMPUTING

The CSE Department at UB has been awarded a **\$490,879** grant from the National Centers of Academic Excellence in Cybersecurity, hosted by the NSA. The University at Buffalo aims to develop secure and efficient containers for cloud computing.



\$34mil+

IN RESEARCH FUNDING THIS YEAR

3,450

UNDERGRADUATE AND GRADUATE STUDENTS

#32

IN THE U.S. CSRANKING.ORG 2020-2023

63

FACULTY MEMBERS



EXPANDING DEPARTMENT

Zongchen Chen - Assistant Professor

Sai Roshan Ayyalasomayajula - Assistant Professor

Kelin Luo - Assistant Professor of Teaching

Shamsad Parvin - Assistant Professor of Teaching



College of Engineering

DEPARTMENT OF COMPUTER SCIENCE
CS.UA.EDU

NEWS & HIGHLIGHTS

PoliMOVE Indy Autonomous Record three-peat winner sets autonomous speed record

UA Competitive Programming Team wins 1st, 2nd, 3rd, 4th at the Division 2 ICPC Competition

UA College of Engineering Unveils New Cyber Security Lab



DEGREES

- BS IN COMPUTER SCIENCE
- BS IN CYBER SECURITY
- BS IN DATA SCIENCE (2024)
- MS IN COMPUTER SCIENCE
- PHD IN COMPUTER SCIENCE

RESEARCH

- CYBER SECURITY
- SOFTWARE ENGINEERING
- ROBOTICS
- MACHINE LEARNING
- Brain-Computer Interface
- DATA SCIENCE
- NETWORKING
- CS EDUCATION

Recent Faculty Hires



HONGSHENG HE
Associate Professor
Intelligent Robotics,
AI and ML,
2023 NSF CAREER Award
PhD, National University of
Singapore



BINEET GHOSH
Assistant Professor
Formal Methods,
Embedded Systems,
Control Theory,
PhD, University of
North Carolina

FUNDING AGENCIES

NSF, NSA, NIH, DOT,
US Army, NOAA, AFOSR

Recent Tenured Faculty



Chris Crawford
Associate Professor
Robotics,
Brain-Computer Interface
2021 NSF CAREER Award
PhD, University of Florida



Monica Anderson
Associate Professor
Robotics
CRA-E and CRA-WP board
of directors member



Yang Xiao
Professor
Computer Security
Cyber Physical Systems
IEEE Fellow

Faculty Spotlights

Department of Computing Science UNIVERSITY OF ALBERTA

#2

in North America for the area
of artificial intelligence

2,500+

undergraduate students
across all CS programs

\$15M+

in research funding

#6

in Canada for computing science
[csrankings.org, September 2023]

430+

graduate students

55

faculty members
(13 assistant, 8 associate, and 34 full)

- Home of Amii, one of three federally funded institutes in Canada for advancing artificial intelligence and machine learning research
- Changing Edmonton's high tech landscape by attracting major research collaborators such as Scotia Bank, IBM Centre for Advanced Studies, Mitsubishi, among others
- Excellence in games research (e.g., Poker, Go, Hex, Skat)
- Creator of online Artificial Intelligence Everywhere course to bring foundational AI skills to a broad audience
- Co-founder of Certificate in Computer Game Development
- Creators of highly popular MOOC specializations in Software Product Management, Software Design and Architecture, and Reinforcement Learning
- Our students are routinely recruited by top companies such as Google, Facebook, Amazon, Microsoft, and IBM, and by a vibrant, local startup ecosystem, involving companies such as Jobber and AltaML
- Natural Language Processing breakthrough in decoding the mysterious Voynich manuscript
- Partner school in CRA UR2PhD program to engage more women and gender-marginalized people in research
- Prof. Rich Sutton, one of the founders of reinforcement learning, elected as a Fellow of the Royal Society of London
- Prof. Csaba Szepesvári, elected as a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI)
- Prof. Russ Greiner, CS-Can|Info-Can Lifetime Achievement Award 2023
- Prof. Nelson Amaral, SPEC Presidential Award 2022
- Assist. Prof. Levi Lelis, IJCAI Distinguished Paper Award 2023
- Prof. Joerg Sander, PAKDD 10-Year Test of Time Award 2023
- Assist. Prof. Alona Fyshe, Women in AI Awards (North America) 2022

Recently hired faculty:

- Assist. Prof. Bailey Kacsmar (PhD U Waterloo, 2023)
- Assist. Prof. Marlos Machado (PhD U Alberta, 2019)
- Assist. Prof. Xiaoqi Tan (PhD HKUST, 2018)
- Assist. Prof. Euijin Choo (PhD North Carolina U, 2015)

Edmonton, Alberta, Canada
ualberta.ca/computing-science



UNIVERSITY
OF ALBERTA



THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE

Computer Science

Research Faculty

- Kobus Barnard
- Eduardo Blanco
- Lei Cao
- Christian Collberg
- Saumya Debray
- Alon Efrat
- Roberto Giacobazzi
- Kwang-Sung Jun
- John Kececioglu
- Stephen Kobourov
- Joshua Levine
- David Lowenthal
- Jason Pacheco
- Todd Proebsting
- Sazzadur Rahaman
- Ellen Riloff
- Mihai Surdeanu
- Beichuan Zhang
- Chicheng Zhang

By the Numbers

Faculty: 31
 Research Funding: \$1.7 million
 Undergraduate Students: 1,781
 Graduate Students: 75

Connect

520.621.4632
 1040 E. 4th Street
 P.O. Box 210077
 Tucson, AZ 85721



Recognition and Recent Alumni

Dr. Joshua Levine - [DOE Early Career Research Award](#)
[Dr. Rebecca Faust](#) (PhD, '21), Assistant Professor, Tulane University
[Dr. Katy Williams](#) (PhD, '23), Assistant Professor of Mathematics and Computer Science, Davidson College

New Faculty



[Reyhan Ahmed](#)
 Assistant Prof. of Practice
 PhD Univ. of Arizona



[Cesim Erten](#)
 Associate Prof. of Practice
 PhD Univ. of Arizona



[Roberto Giacobazzi](#)
 Professor
 PhD Univ. of Pisa



[Ellen Riloff](#)
 Professor
 PhD UMass- Amherst



[Xinchen Yu](#)
 Assistant Prof. of Practice
 PhD Univ. of North Texas

Broadening Participation

The department is committed to broadening participation in computing. See our [Broadening Participation in Computing Plan](#) for more information.



eecs.uark.edu | 504 J.B. Hunt Building, Fayetteville, AR 72701 | (479) 575-6197 | eecs@uark.edu

In the department of Electrical Engineering and Computer Science, faculty and students are working to improve existing technology and create the next generation of electronics and computing hardware and software. This department is the largest in the College of Engineering in terms of student enrollment with four undergraduate degree programs, three graduate certificate programs, three M.S. programs, and three Ph.D. programs.

With the highest rate of research in the college, faculty are focusing on cutting-edge technology areas such as energy-efficient power modules, artificial intelligence, terahertz imaging, big data, signal processing, cybersecurity, and

more. New research centers created within the department have begun to tackle some of the most pressing issues in the tech world. These centers connect computer science, electrical, and computer engineering researchers with colleagues from other departments, colleges and universities, and industry stakeholders making Electrical Engineering and Computer Science is a hub for interdisciplinary research involving real-world applications.

Research Areas



Cybersecurity

Big Data, Data Analytics, & Blockchain

Machine Learning & Quantum Machine Learning

Computer Vision & Image Processing

Trustworthy & Responsible Artificial Intelligence

Computer System Design & High-Performance Computing

Deep Learning & Natural Language Processing

Algorithmic Self-Assembly & Biomolecular Computing

Computer-Aided Design

Biomedical Imaging & non-destructive evaluation

Digital Signal Processing & Sensor Networks

Electronic Packaging & Integrated Circuits

Power & Control Systems, Power Electronics, & renewable energy

RF & Microwave, Electromagnetics, antennas, & terahertz

Semiconductors, nanotechnology, optoelectronics, photovoltaic, & photonics

Degrees Offered



Undergraduate Programs

- B.S. in Computer Science
- B.S. in Computer Engineering
- B.A. in Computer Science
- B.S. in Electrical Engineering

Graduate Programs

- M.S. in Computer Science
- M.S. in Computer Engineering
- M.S. in Electrical Engineering
- Ph.D. in Computer Science
- Ph.D. in Computer Engineering
- Ph.D. in Electrical Engineering

Social Media



Department Head: Dr. Jia Di



Department Head

Professor

Rodger S. Kline Leadership Chair

(479) 575-5728

jdi@uark.edu

Chairs

Thomas Clinton Mullins Endowed Chair in the College of Engineering | **Matthew J. Patitz**

Charles D. Morgan/Acxiom Endowed Graduate Research Chair in Database | **Xintao Wu**

Twenty-Frist Century Research Leadership Chair | **Qinghua Li & Alan Mantooth**

BY THE NUMBERS

40 Faculty

827 Undergraduate

217 Graduate

*Numbers are based on Fall 2023 data reported by the Office of Institutional Research and Assessment (oir.uark.edu)



THE UNIVERSITY OF BRITISH COLUMBIA

Computer Science
Faculty of Science

www.cs.ubc.ca

STRENGTH IN NUMBERS

66 faculty including 3 new hires

259 graduate students

2,774 undergrad students

32% of undergraduate students identify as female

#1*

Computer Science
Program
in Canada

*Tied for #1. Source: Maclean's Annual Survey 2023

Ranked consistently
in the **TOP 25**
worldwide**

**QS World University Rankings By Subject

MAJOR CONFERENCES CHAIRED



Alla Sheffer
Papers Chair
SIGGRAPH 2023



Kemi Ola
Hybrid Chair
SIGCSE 2024/2025



Kevin Leyton-Brown
General Chair
EC 2023



Margo Seltzer
Program Chair
SOSP 2023



Tamara Munzner
Papers Chair
IEEE VIS 2023

NEW FACULTY

We're hiring the best and the brightest



Kelsey Allen
Assistant Professor;
Psychology (Cognitive Science) and Computer Science (AI/Machine Learning)



Arpan Gujarati,
Assistant Professor;
Systems



Evan Shelhamer
Assistant Professor;
AI/Vision

RECENT ACCOLADES

Athena Lecturer Award: Margo Seltzer (ACM)

Distinguished Dissertation Award: Yasha Pushak (CS-CAN)

Excellence in Teaching Award: Elisa Baniassad (CS-CAN)

Eurographics Fellow: Alla Sheffer

IEEE Fellows: Karon MacLean, Tamara Munzner

Fellow of the Royal Society of Canada: Kevin Leyton-Brown

Lifetime Achievement Award: Alan Mackworth (CS-CAN)

Outstanding Publication of the Decade: Jeff Clune (NORA)

Outstanding Research Award: Gail Murphy (SIGSOFT)

Research Prize: Chen Greif (CAIMS)

Test of Time Awards: Jeff Clune (GECCO), Kevin Leyton-Brown (KDD),

Tamara Munzner (InfoVis), Gail Murphy (SIGSOFT)

Best Paper / Distinguished Paper/Artifact Awards:

ACL 2023, ASPLOS 2023, EMSOFT 2022, RTSS 2022, SIGPLAN 2022, WOAHI 2023



Electrical Engineering & Computer Sciences

UC Berkeley's Department of Electrical Engineering and Computer Sciences (EECS) houses top-ranked programs that attract stellar students and professors from around the world, pioneering the frontiers of information science and technology with broad impacts on society. As the largest and one of the most distinguished departments on the Berkeley campus, EECS has been at the forefront of research that has led to important advancements in semiconductor and MEMS devices, design technology, computer architecture, operating systems and databases, and wired and wireless networking. Our graduates now make up the core of today's technology industry.

Did you know?

- This year marks the 50th anniversary of the Department of Electrical Engineering & Computer Sciences (plural). Berkeley EECS, as it is known today, was formally ratified on July 1st, 1973 after merging with the Department of Computer Science in the College of Letters & Sciences.
- EE Prof. Joseph Thomas Gier became the first Black professor to achieve tenure in the UC system when he was promoted to associate professor in 1952. An early pioneer in solar energy, he was an expert in the field of thermal and luminous radiation, whose inventions were used in the earliest days of space exploration.
- EECS professor David Patterson directed the "reduced instruction set computer" (RISC) project at Berkeley, making CPUs faster and more efficient. Today, 99% of the 16 billion microprocessors produced annually are RISC processors. In 2018, Patterson and Stanford's John Hennessy won a Turing Award, the Nobel Prize of computing, for this work.

4,511
undergraduate
and graduate students

\$829K
research expenditure
per FTE faculty

6
Turing Award winners

35
National Academy of
Engineering members

50
YEARS OF
EECS



With 230+ Ph.D. students, 250+ Master's students, and 2,300+ undergraduates, UC Irvine's Department of Computer Science provides a world-class research environment spanning not only the core areas of computer science — including AI/ML, system software, computer security/privacy, data and information systems, the theory of computation, and computer architecture — but also highly interdisciplinary programs, such as biomedical informatics and ubiquitous computing.

- ◆ The 2022 *U.S. News & World Report* ranking identifies UCI as a Top 10 public university, and CS@UCI as one of the Top 30 Computer Science Departments in the United States, ranked #22 in Artificial Intelligence.
- ◆ CS@UCI has over 50 faculty, including one NAE member, 14 ACM Fellows, 12 IEEE Fellows, and 14 AAAS Fellows.
- ◆ UCI was ranked as the No. 1 college by *Money Magazine* and was identified by *The New York Times* as No. 1 among U.S. universities that do the most for low-income students.

Faculty Highlights



Habiba Farrukh
Ph.D., Purdue University
Combining System Design, Signal Processing, Computer Vision and ML to Investigate System Security Threats



Shuang Zhao
Ph.D., Cornell University
Physics-based Modeling and Simulating Applied to Computer Graphics and Scientific Computing
2023 NSF CAREER Award



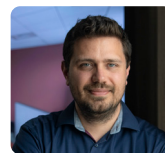
Thomas Yeh
Ph.D., UCLA
Visualization Learning to Enhance Participation in Computer Science Research



Alfred Chen
Ph.D., University of Michigan
Securing Emerging Technologies in Autonomous and Intelligent Systems
2022 NSF CAREER Award



Jing Zhang
Ph.D., University of Southern California
Developing Methods to Analyze Gene Regulation and Genetic Variations



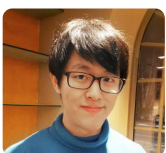
Stephan Mandt
Ph.D., University of Cologne
Researching Bayesian Deep Learning
2021 NSF CAREER Award



Ioannis Panageas
Ph.D., Georgia Tech
Applying Theory of Dynamical Systems to Algorithms and Machine Learning



Sameer Singh
Ph.D., University of Massachusetts Amherst
Designing Robust NLP and ML Algorithms
2021 NSF CAREER Award



Sang-Woo Jun
Ph.D., MIT
Designing High-Performance Computational Storage



Ardalan Amiri Sani
Ph.D., Rice University
Building Trustworthy Systems
2019 NSF CAREER Award



Sangeetha Abdu Jyothi
Ph.D., University of Illinois, Urbana-Champaign
Researching Problems at the Intersection of Systems, Networks and ML



Mohsen Imani
Ph.D., UC San Diego
Building Bio-Inspired Architectures and Systems
2023 DARPA Young Faculty Award

NEW FACULTY



Blaise-Pascal Tine
Hardware Accelerators
Ph.D.
Georgia Institute
of Technology



Sam Kumar
System Security and
Networked Systems
Ph.D.
UC Berkeley



Eunice Jun
Human Computer
Interaction
Ph.D.
University of Washington



Saadia Gabriel
Natural Language
Processing
Ph.D.
University of Washington



Remy Wang
Data Systems
Ph.D.
University of Washington

FACULTY AWARDS & HONORS

- NSF CAREER Award:** Omid Abari
- ACM Fellow:** Stefano Soatto
- IEEE Fellow:** Wei Wang
- Samsung AI Researcher of the Year:** Aditya Grover
- SDM/IBM Early Career Data Mining Research Award:** Yizhou Sun
- AI's 10 to Watch by IEEE Intelligent Systems:** Yizhou Sun
- UCLA Distinguished Teaching Award:** Carey Nachenberg
- UCLA Engineering Eon Instrumentation Inc. Excellence in Teaching Award:** Jens Palsberg
- Test of Time Award from the International Association for Cryptologic Research (IACR):** Amit Sahai
- Global Industry Leader Award from ChipEx 2023:** Jason Cong

STUDENT/ALUMNI AWARDS & HONORS

- Ph.D. alumnus Aayush Jain, currently an Assistant Professor at CMU, won the **2022 ACM Doctoral Dissertation Award** for a breakthrough result in cryptography.
- Ph.D. alumnus Vint Cerf won the **2023 IEEE Medal of Honor** "for co-creating the Internet architecture and providing sustained leadership in its phenomenal growth in becoming society's critical infrastructure."
- The UCLA team for the International Collegiate Programming Contest (ICPC) advanced to the **ICPC World Finals 2023**, which will be held in Egypt in November 2023.
- The UCLA student chapter of the ACM won the **ACM's 2022-2023 Outstanding Chapter Activities Award**, which is given to a single chapter.

BREAK THROUGH TECH AI

- Break Through Tech AI is part of a national program designed to teach AI to a greater diversity of students.
- The program has 100 students with 82 female or female-identifying, 22 are Black, Latina, or Native American, 42 are low income, 40 are first-generation college goers, and 21 are at community colleges.
- 78% of the inaugural UCLA cohort (2022) secured internships in AI and ML, with companies such as Google, PWC, Microsoft, and JP Morgan.

NUMBERS

- US News:** UCLA is the #1 public university in the country
- 17,345 freshman computing applications for Fall 2022
- 14 graduates students accepted faculty positions
- csrankings.org:** #1 in Cryptography, #2 in Comp. bio & bioinformatics, #4 in Artificial intelligence, #5 in Machine learning



BY THE #S
 EST. 2005



RANKED #28
PUBLIC UNIVERSITY
IN THE NATION
 ▶ #60 NATIONALLY
US NEWS & WORLD REPORT 2024



RANKED #2
IN ADVANCING
SOCIAL MOBILITY
WALL STREET JOURNAL



RANKED #62
IN COMPUTER
SCIENCE
CSRANKINGS.ORG

18 FACULTY

1,316 UNDERGRADUATE STUDENTS
FALL 2022

1,281 B.S. DEGREES AWARDED
 SINCE 2005

76 GRADUATE STUDENTS
FALL 2022

65 + **56** DEGREES AWARDED
PH.D. M.S. SINCE 2005

RECENT AWARDS

Since its establishment in 2005, 10 of the current 18 faculty have received a Career Award, including 8 from NSF and 2 from DOE.

Ahmed Arif

NSF Career Award, 2023
 For developing a mobile silent speech recognition system using advanced learning techniques that auto-corrects misrecognitions with language models and enhances usability with multi-modal feedback for both sighted and visually impaired users



Wan Du

NSF Career Award, 2023
 For developing a co-design framework of wireless networking and reinforcement learning for smart building management, which optimizes both building energy efficiency and network performance



Shijia Pan

Hellman Fellowship, 2023
 For enabling unobtrusive older adults in-home monitoring via new surface sensors inspired by origami meta-structures



Ming-Hsuan Yang

Longuet-Higgins Award at CVPR 2023
 For fundamental contributions to computer vision and impact to community made by the paper entitled "Online Object Tracking: A Benchmark" published in CVPR 2013



RECENT HIRES



Xiaoyi Lu
Ph.D., University of Chinese Academy of Sciences
 Research areas: parallel and distributed computing, big data, deep learning, and interdisciplinary studies



Pengfei Su
Ph.D., William & Mary
 Research areas: high-performance computing, programming languages



Meng Tang
Ph.D., University of Waterloo
 Research areas: computer vision and machine learning, with particular focus on weak supervision

RECENT HIGHLIGHTS

- ▶ Dong Li, Hyeran Jeon, Xiaoyi Lu, and Pengfei Su are leading an NSF IUCRC planning proposal
- ▶ Xiaoyi Lu received a DOE DRS award with a budget of \$4.35 million, two NSF grants (EAGER and Cyber Training), and research funding from Amazon, Google, and Meta
- ▶ Shijia Pan and her team received the Best Demo Award at SenSys 2022 and the Best Poster Runner-up Award at IPSN 2023
- ▶ Florin Rusu published a book on Multidimensional Array Data Management in Foundations and Trends in Databases
- ▶ Pengfei Su is the PI on an NSF Core Small grant

HIGH PLACEMENT AND GROWTH



CS DEPT
CSRANKINGS.ORG



Computer architecture,
design automation,
embedded systems, high
performance computing



Bionformatics



Systems



Security

NUMBERS AND STATS

2ND SOCIAL MOBILITY
U.C. Riverside
USNWR, 2023

OUR PROFILE

45 FACULTY MEMBERS

195 PHD STUDENTS

348 M.S. STUDENTS

1574 B.S. STUDENTS

FEATURED NEWS

FOUR NEW EXCEPTIONAL HIRES



- **Emiliano De Cristofaro**, Privacy and Security (PhD UC-Irvine, 2011)
- **Trent Jaeger**, Systems Security (PhD University of Michigan , 1997)
- **Ioannis Karamouzas**, Robotics (PhD Utrecht University, 2012)
- **Zhaowei Tan**, Computer Networks and Systems (PhD UCLA, 2022)

NEW PROGRAMS LAUNCHED

- **Robotics M.S. Degree:** The first program of its kind in the University of California (UC) system has been launched.
- **Data Science M.S. Degree:** Our new Computational Data Science M.S. degree is off to a great start completing its first year.

GROUND BREAKING RESEARCH AND AWARDS

- **Two new CAREER awards:** Our young faculty continues to make its mark in the research community. This brings the total number of CAREER wards to 18 for our Department.
- **A cybersecurity center:** Srikanth Krishnamurthy serves as the lead for the detection thrust of a \$2.1M Department of Defense grant.
- **A stellar year:** CSE Prof. Papalexakis has won three prestigious awards in one year, including the 2022 Tao Li Award, and two IEEE awards for best paper and scientific contributions.
- **An ACM SIGKDD Test-of-Time:** CSE Prof. Keogh and his team won the prestigious ACM SIGKDD Test-of-Time award recognizing outstanding papers from past KDD Conferences with lasting impact over a decade.

STUDENT HIGHLIGHTS

- **An Emmy award:** CSE Alumni Mahmudul Hasan received a Technical Emmy Award leading a team within Comcast Research Labs.
- **2022 ACM Student Research Competition:** CSE student Madhurima Chakraborty recently won third place in the graduate category of the 2022 ACM Student Research Competition Grand Finals.



UCSB DEPARTMENT OF Computer Science

NEW FACULTY MEMBERS



Maryam Majedi
Teaching
Embedded Ethics &
Data Privacy



Dahlia Malkhi
Distributed Systems
& Cryptocurrency
starting Winter '24



Wenbo Guo
Machine Learning &
Computer Security
starting Spring '24

RESEARCH HIGHLIGHTS

ACTION Institute

UCSB will lead a \$20m effort to create the NSF AI Institute for Agent-based Cyber Threat Intelligence and Operation, which seeks to change the way mission-critical systems are protected against ever-changing security threats.

Alexa Prize

Profs. Xifeng Yan and William Wang's innovative work on the next generation of virtual assistants led Team GauchoChat to 1st place in the AlexaPrize SocialBot Grand Challenge 5 and 2nd place in the AlexaPrize SimBot Challenge.

AWARDS & HONORS

FACULTY

William Y. Wang

CRA-E Undergraduate Research
Faculty Mentoring Award
Karen Spärck Jones Award

Tevfik Bultan & Team

DARPA Hardening Development
Toolchains Against Emergent
Execution (HARDEN)

Misha Sra

NSF CAREER Award

Jonathan Balkind

NSF CAREER Award

Michael Beyeler

NIH New Innovator Award

STUDENTS

Yujie Lu

CHI Best Paper Award

Marianne Arriola

NSF GRFP, Machine Learning

Anisha Kabir

Honorable Mention, CRA
Outstanding Research Award

BY THE NUMBERS

41 faculty members

16 staff members

955 undergraduate students

229 graduate students

14 \$14m in research awards

#12 public university (USNWR)

#24 CS department (CSRankings)

#14 CoE Grad programs (USNWR)

TOP 10 PhD CS programs (NRC)

CREATING INNOVATIVE & IMPACTFUL INTERACTIVE EXPERIENCES

WE THRIVE AT THE INTERSECTION OF MEDIA AND TECHNOLOGY

Our department engages in boundary-pushing research and education that integrates **technical, interpretive, and design work** to create experiences that broad societal impact.

Our graduates are leaders in the interactive media field; they are socially conscious and reflective designers. They help create a more equitable future, drawing from UC Santa Cruz's long-standing tradition in social justice.

HEVGA FELLOWS*



Magy Seif El-Nasr
Prof. & Department Chair



Katherine Isbister
Prof. & BE Endowed Chair
ACM Distinguished Scientist



Michael Mateas
Prof. & Grad Director



Jim Whitehead
Prof. & Undergrad Director



Noah Wardrip-Fruin
CM Prof



Our department resides in both **Silicon Valley** and **Santa Cruz**, housing faculty within **multiple interdisciplinary areas** connecting Human-Computer Interaction, Artificial Intelligence, Games Research, Human-Robot Interactions, and the Humanities

- **#1 Academic Program in Games****
- **#2 Game Design MS Program** (Animation Career Review)
- **#5 Game Design Undergraduate Program** (U.S. News and World Report)
- **#15 Game Design MS Program** (Princeton Review)



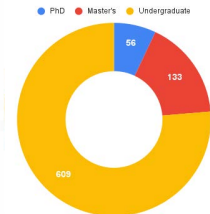
Research + Industry: We collaborate with Industry and build **Innovations** focusing on **global issues** with **practical considerations**, maximizing **societal impact** and minimizing **social injustice**

- **Over \$3 million** granted this past year from organizations such as **NSF and JSMF**
- Industry engagements with **Honda, Microsoft, Google, NetEase, Truist, MasterCard**, and many others
- Over 70 companies visit our campus each year to engage and collaborate with faculty and students



Interdisciplinary Approach to Education combining project-based and experiential learning

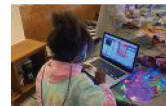
A total of **798 students** in 5 programs: B.S. in Computer Science and Game Design, M.S. in Games and Playable Media, M.S. in HCI, M.S. and Ph.D. in Computational Media.



12 labs researching disciplines within Computational Media



Mad Mixologist: VR game designed by ALT Game Lab. Winner of multiple tech and research awards.



SWEL Camp, hosted by SET Lab



LUX: ARG designed by GUII and ID Labs



Spoke It! playful speech therapy by ASSIST Lab

** Based on number of papers published at conferences and journals dedicated to the technical portion of games and interactive entertainment research over the past 10 years.

* The Higher Education Video Game Alliance (HEVGA) Fellows Program recognizes senior scholars, elected by their peers, for outstanding games-based research, design, and theory.



Fall 2023

UCF Wins \$6M NSF Award to Translate Its Innovations

This **4-year, \$6 million National Science Foundation project** will accelerate UCF's contributions to the regional and global innovation ecosystem within the Central Florida region. UCF has partnerships and collaborations with several industry sectors, including aerospace, health, defense, energy, and others. This project will include creating a Venture Lab to directly support translations of innovations, expanding entrepreneurship education and training opportunities for students, supporting the translation of research projects into successful technology startups, and creating a network of entrepreneurship and innovation ambassadors from industry and community partners.



UCF faculty had **18 papers accepted** at the **2023 International Conference on Computer Vision (ICCV)**. UCF is currently **ranked 7th in Computer Vision**, based on CSRankings.org.



In Fall 2023, **Dr. Ser Nam Lim** joined the UCF Department of Computer Science from Meta as a tenured associate professor and the first UCF **Artificial Intelligence Initiative (Aii)** hire. Dr. Lim has over 100 publications.

In Fall 2023, **Dr. Kevin Moran** joined the UCF Department of Computer Science and the **Cyber Security and Privacy faculty research cluster** as an assistant professor from George Mason University.



UCF Leads \$5M NSF Award to Accelerate VR Research

This **4-year, \$5 million NSF project** will develop the first large-scale infrastructure for virtual reality (VR) research. Called the Virtual Experience Research Accelerator, or VERA, the system will enable researchers to conduct large studies in VR, mixed reality (MR), and augmented reality (AR) with large and diverse populations. UCF is currently **ranked 3rd in Virtual Reality** and will host **IEEE VR 2024**.

Two UCF teams claimed **1st and 2nd** place finishes at the last Department of Energy's **CyberForce Competition**. It marked the third time that UCF won the DOE CyberForce Competition (2018, 2021, 2022).



UCF secured 63 patents in 2022, ranking it **23rd among public universities in the US** and 53rd in the world, based on the **Top 100 Worldwide Universities** announced by the National Academy of Inventor (NAI).

UCF Degree Programs

- BS in Computer Science
- BS in Information Technology
- MS in Computer Science
- MS in Computer Vision
- MS in Cyber Security and Privacy
- MS in Data Analytics
- MS in Digital Forensics
- MS in FinTech
- PhD in Big Data Analytics
- PhD in Computer Science

5300+ undergraduates
800+ graduate students



UCF was **36th in Washington Monthly's 2023 National University Rankings**, which are based on what institutions "do for our country" through three broad categories: social mobility, research, and promoting public service.

<https://www.cs.ucf.edu>

Follow





New Faculty



Ce Zhang
Title: Associate Professor
Area: A.I., Machine Learning



William Hoza
Title: Assistant Professor
Area: Theory



Tian Li
Title: Assistant Professor
Area: Databases, Machine Learning



Grant Ho
Title: Assistant Professor
Area: Security



Mina Lee
Title: Assistant Professor
Area: A.I., Machine Learning, HCI



Ari Holtzman
Title: Assistant Professor
Area: Systems



Bo Li
Title: Associate Professor
Area: Machine Learning



Haotian Jiang
Title: Assistant Professor
Area: Theory



Kexin Pei
Title: Assistant Professor
Area: Security, Machine Learning

Faculty Growth



2022-2023 Faculty Awards

- Ben Zhao** 2023 Internet Defense Prize
- Raul Castro Fernandez** 2023 SIGMOD Test of Time Award
- Michael Franklin** 2023 Arthur Kelly Faculty Prize
- Ian Foster** 2023 IEEE Internet Award
- Robert Rand** 2023 AFOSR Young Investigator Research Program Award
- Bo Li** 2022 Google Faculty Research Award
- Ian Foster, Rick Stevens** 2022 ACM Gordon Bell Special Prize for HPC
- Rick Stevens** 2022 DOE Secretary of Energy Achievement Award

Fellowships

Sloan Fellows



Pedro Lopes
2022



Bo Li
2022



Chenhao Tan
2023

ACM Fellow



Heather Zheng
2023

IEEE Fellow



Fred Chong
2022

The rapid growth within the computer science program at the University of Chicago has continued to solidify our world-class reputation in the fields of theory, systems, quantum computing, machine learning, and human-computer interaction. As I transition into my new role as chair, I am confident we will continue defining the future of computer and data science.

Henry Hoffmann, Chair of Computer Science

Research Honors

3 DISTINGUISHED PAPER AWARDS

- Aloni Cohen** 2022 USENIX Security Conference
- Blase Ur** 2023 USENIX Security Conference
- Ben Zhao** 2023 USENIX Security Conference

3 BEST PAPER AWARDS

- Shan Lu** 2022 USENIX OSDI Conference
- Pedro Lopes** 2023 ACM CHI Conference
- Grant Ho** 2023 IEEE European Symposium On Security & Privacy

1 ACM DISTINGUISHED MEMBER

Diana Franklin 2022

1 NSF-CSIRO AWARD

Chenhao Tan 2023

1 AAAS ELECTION

Michael Franklin 2023

Ph.D. & Postdoc Faculty Placements

- Andrew Mcnutt**, Assistant Professor, University of Utah
- Kate Smith**, Assistant Professor, Northwestern University
- Emily Wenger**, Assistant Professor, Duke University
- Dixin Tang**, Assistant Professor, UT Austin
- Gokul Ravi**, Assistant Professor, University of Michigan

Student Achievements

- 5 SIEBEL SCHOLARS**
- 2 HARPER FELLOWSHIPS**
- 2 DEPARTMENT OF ENERGY FELLOWSHIPS**
- 1 BEST STUDENT PAPER**
- 1 NSF GRADUATE RESEARCH FELLOWSHIP**

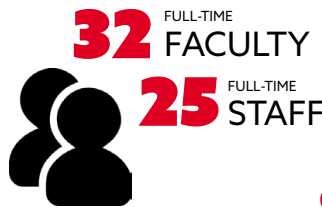
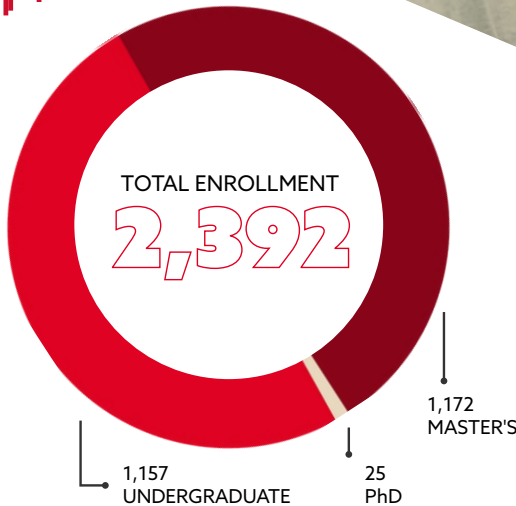
48
TENURED-TRACK
FACULTY

1,527
UNDERGRADUATE
STUDENTS

354
GRADUATE
STUDENTS

212
P.H.D &
POSTDOCS

+25M
AWARD
FUNDING



2022 - 2023 HIGHLIGHTS

The School of Information Technology's (SoIT) Student Success Program has been making significant strides in supporting its students. Modeled after UC Athletics' Academic Success Program and project management processes, it treats each course as a project. It develops a course game plan and scorecard for time and task management. In the Fall of 2022, the program boasted 15 dedicated student coaches and guided a total of 177 students. This commitment continued into the Spring of 2023, with 13 student coaches assisting 42 students and 1 coach helping 7 students during the Summer. The peer coaching model has proven to be effective, as it helps students navigate challenges and successfully pass their courses. Peer mentors, or Success Coaches, are provided to students in their first semester, and students at any stage can opt-in. This program equips students with project management skills, including goal setting, time management, and effective communication.

Furthermore, the School of Information Technology is proud to announce the graduation of its first cohort from the Early IT program. Four students, Vismaya Manchaiah, Luke King, Saleem Dweik, and Jack Otten, who started in the Early IT program, graduated from the University of Cincinnati in Spring 2023. This program allows high school students to complete their first year of college while in high school, saving time and money. Vismaya Manchaiah earned a Bachelor's in IT in the Software Development Track along with an MBA through the Accelerated Masters Program. Luke King, who specialized in the Game Development Track and minored in Communications, gained a head start in his tech career and also proudly earned his Bachelor's in IT. Saleem Dweik who secured a full-time job through a co-op experience, and Jack Otten, who graduated debt-free, both excelled in the Software Development Track and achieved their Bachelor's degrees in IT.



Computer Science

at the University of Colorado Boulder

Welcoming New Faculty Thought Leaders



Huck Bennett
Theory of Computing



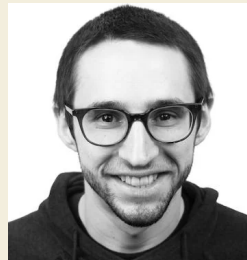
Theodora Chaspari
Human-Centered
Computing,
Artificial Intelligence



Stephen Kissler
Complex Systems,
Computational Biology



Maria L. Pacheco
Human-Centered
Computing,
Artificial Intelligence



Michael Rivera
Human-Computer
Interaction,
Digital Fabrication



Divya Vernerey
Teaching Professor,
Numerical Analysis



CAREER Awards since 2015

Including 2023 recipient:

Orit Peleg

Swarm communication



Martha Palmer

2023 Association for Computational Linguistics' Lifetime Achievement Award

- » Recognized for 50 years of contributions to the field, including verb semantics, PropBank and VerbNet.
- » Her work has impacted fields as disparate as education and AI teaming, national health and defense.

#16

Among public
undergraduate programs

#18

Among public
graduate programs

U.S. News and World Report, 2024

Research and Remembrance

- » The Department of Computer Science celebrated the beginning of a new cross-disciplinary Robotics Graduate Program, joining thought partners across the college to provide an exceptional wealth of research expertise.
- » We also honored the legacy of professor Mike Eisenberg, a brilliant and kind polymath who left us too soon, but with so many gifts.



University of Colorado **Boulder**

Learn more



COMPUTER AND INFORMATION SCIENCES

CONTACT US P: 302-831-2711

WWW. CIS.UDEL.EDU | ENGR.UDEL.EDU | UDEL.EDU

DEPARTMENT AT-A-GLANCE

29 TENURE-TRACK FACULTY
45% NSF CAREER awardees

7 CONTINUING-TRACK (TEACHING) FACULTY

3 INSTRUCTORS

\$5.18M TOTAL RESEARCH EXPENDITURE (AY 21-22)

CURRENT ENROLLMENT

Undergraduate

BS Computer Science	507
BA Computer Science	71
BS Information Systems	35
Total	613

Graduate

PhD Computer Science	104
PhD Bioinformatics Data Science	5
MS Computer Science	51
MS Bioinformatics & Computational Biology	44
Total	204

CSRankings, USA 2013-2023

All areas	#63
Computer Science Education	#5
Logic & verification	#23
Embedded & real-time systems	#23
Robotics	#25
High-performance computing	#28

NEW HIRES

Lochlan Belford, *Instructor*
Nazim Karaca, *Instructor*
Ulf Schiller, *Associate Professor*
Xu Yuan, *Associate Professor*



RECENTLY FUNDED PROJECTS

PI, Title, Amount (UD/Total), Agency
Chandra Kambhamettu, A Comprehensive Multi-vehicle based Deep Learning System for Diurnal Multimodal Hidden Targets Detection, \$3,915K/\$3,915K, ARL

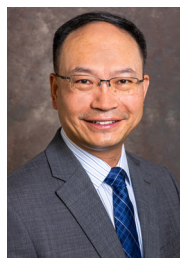
Cathy Wu, Graduate Training Program in Computational Biology, Bioinformatics and Biomedical Data Science (CBB), \$1,425K/\$1,425K, NIH

Sunita Chandrasekaran, ECP SOLLVE: Compiling and successfully execution of QMCPACK on Frontier and Aurora supercomputers, \$688K/\$960K, DOE

Leila Barmaki, Using Quantitative Ethnography and Customized Virtual Role Models to Measure and Improve the Computing Identity of Young Girls, \$350K/\$350K, NSF

Xi Peng, Advancing Trustworthy Machine Learning for Seabed Morphodynamics Analysis, \$339K/\$578K, AFRL

Xing Gao, CICI: UCSS: Secure Containers in High-Performance Computing Infrastructure, \$300K/\$600K, NSF



RECENT HONORS

Lori Pollock and **Vijay Shanker**, Most Influential Paper Award for papers published in 2013, International Conference on Program Comprehension (ICPC 2023)

Guoquan Huang and students, Best Student Paper Award Finalist, Robotics Science & Systems (RSS 2023)

Leila Barmaki, Best Paper Award, IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE 2023)

Xu Yuan, Best Paper Award and Distinguished Paper Award, 53rd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2023)

Chandra Kambhamettu, VizWiz 2023 Grand Challenge, 1st Place, Grounding Answers for Visual Questions Asked by Visually Impaired People (CVPR 2023)

NOTABLE SERVICE

Weisong Shi, General Chair, ACM International Conference on Mobile Computing and Networking (MobilCom 2024)

Lori Pollock, Program Co-Chair, International Conference on Software Engineering (ICSE 2023)

Chandra Kambhamettu, General Chair, IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR 2026)

Stephen Siegel, Co-Chair, VerifyThis International Software Verification Competition (VerifyThis 2023)

COMPUTER & INFORMATION SCIENCE & ENGINEERING

UF UNIVERSITY of FLORIDA

10%

OF THE 89 BLACK WOMEN ENROLLED IN COMPUTER SCIENCE PH.D. PROGRAMS NATIONWIDE ARE AT UF CISE.
2022 CRA DATA

56%

DOMESTIC STUDENTS COMPRISE 54 PERCENT OF UF CISE'S PH.D. ENROLLMENT.
2023 DEPARTMENTAL ENROLLMENT DATA

50%

OUT OF 40 PH.D. STUDENTS ENROLLED IN THE HUMAN-CENTERED COMPUTING PROGRAM, 50% ARE WOMEN.
2023 DEPARTMENTAL ENROLLMENT DATA

Research Highlights

Grain Leads \$1.5 million National Institutes of Health National Cancer Institute

Study: Kiley Grain, Ph.D., with co-investigator James Cahill, Ph.D., aim to create a pan-mammalian tumor atlas that will aid in the development of AI tools to model the evolution of cancer across hundreds of mammalian species and its correlation to humans.

How a Horse Whisperer Can Help Engineers Build Better Robots: Eakta Jain Ph. D., conducted a year of fieldwork observing the special interactions among horses and humans at the UF Horse Teaching Unit in Gainesville, Fla. She recently presented her findings at the Association for Computing Machinery Conference on Human Factors in Computing Systems in Hamburg, Germany.

Awards & Recognition

ACM Fellow: Abdelsalam (Sumi) Helal, Ph.D.; **NSF Career Award:** Kejun Huang, Ph.D.; **AAAS Fellow:** Prabhat Mishra, Ph.D.; **ACM Executive Committee:** Eatka Jain, Ph.D.; **IEEE Fellow:** Juan E. Gilbert, Ph.D.

Notable News

Patriel Stapleton Receives NSF Graduate Research Fellowship: Patriel Stapleton has been awarded a prestigious National Science Foundation (NSF) Graduate Research Fellowship. Her research investigates how game-based learning simulations can be used to effectively teach middle-school students about complex topics.

FICS Research Director Appointed to Computing Community Consortium Council: Kevin R.B. Butler, Ph.D., a CISE professor and director of the Florida Institute for Cybersecurity Research, was recently appointed to the 2023 council for the Computing Community Consortium (CCC).

Computer Engineering Graduate Program Jumps 2 Spots: The CISE computer engineering graduate program has risen to No. 13 among public universities nationwide according to U.S. News and World Report rankings. Last year, the program was ranked No. 15 among public universities.

#1
PUBLIC
UNIVERSITY
WALL STREET JOURNAL

18 NSF CAREER AWARD WINNERS

4,055

UNDERGRADUATE ENROLLMENT

1,079

MASTER'S ENROLLMENT

175

PH.D. ENROLLMENT

20

IEEE, ACM, AAAS FELLOWS

15

ACTIVE GRANTS OVER \$1 MILLION

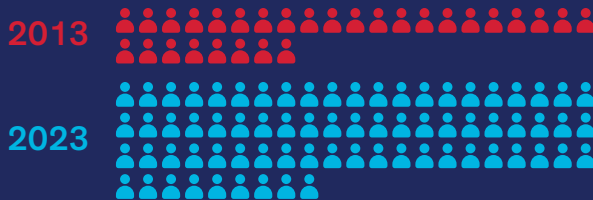
29

PATENTS GRANTED SINCE 2012

World-class research. World-changing dedication to equity.

The computer science department at the University of Illinois Chicago makes two defining contributions to the CS landscape: generating new research knowledge that will advance the field—especially in our focus areas of AI and machine learning, security, data visualization, and theory—and developing the next generation of professionals and scholars who increase diversity in CS and provide representation for all.

FACULTY GROWTH



Break Through Tech Chicago

UIC was the first expansion site for **Break Through Tech**, a national program that seeks to increase the proportion of women in tech careers by preparing more women with a CS education today. We emphasize outreach to Chicago-area women in high school, community college, and college who may never before have considered a tech-oriented major or career. The work is funded by Melinda Gates' Pivotal Ventures and the Cognizant Foundation. Visit us at chicago.breakthroughtech.org.



Building for tomorrow



CS is a primary driver of the prodigious growth that the UIC College of Engineering has experienced in the last 15 years. During this academic year, that role will be recognized with the opening of a **new building created explicitly for CS research and education**. The 135,000 square feet of space—including faculty and graduate student labs, spaces for undergraduate collaboration, and classrooms that hold 24 to 180 students—were designed by the Seattle-based architectural firm LMN, which is also responsible for the Bill and Melinda Gates Center for Computer Science and Engineering at the University of Washington.

RESEARCH STRENGTHS

- ▶ AI and Machine Learning
- ▶ Data Visualization
- ▶ Security
- ▶ Theory

FEATURED FACULTY

ARTIFICIAL INTELLIGENCE / MACHINE LEARNING



Ian Kash



Bing Liu



Natalie Parde



Wei Tang



Philip Yu



Elena Zheleva

DATA VISUALIZATION



Liz Marai



Fabio Miranda

SECURITY



Chris Kanich



Jason Polakis

THEORY



Anastasios Sidiropoulos



Xiaorui Sun



Faculty Statistics

45 IEEE Fellows, 12 AAAS Fellows,
5 ACM Fellows, 5 APS Fellows
NAE Members: 6 active, 15 emeritus

110 Faculty members

Departmental News

- The Electrical and Computer Engineering (ECE) Building became the University of Illinois' first zero-energy certified facility.
- New NSF Center tackling microelectronic chips' energy efficiency led by ECE's Shaloo Rakheja.
- University of Illinois partnered with five technology industry leaders in Speech Accessibility Project.
- Samsung Austin Semiconductor invested \$1M in UIUC to bolster semiconductor ecosystem.
- Pengfei Song is leading a \$2M funded project to develop a next-generation 3D ultrasound imaging device.
- Center for Label-free Imaging and Multiscale Biophotonics (CLIMB) officially launched.
- Viktor Gruev unveiled a novel method of underwater geolocation.

Recent Honors

American Academy of Arts and Sciences election, Tamer Başar | IEEE Fellow, Alejandro Dominguez-Garcia | NSF Partners for Innovation (PFI) Award, Pengfei Song, | Michael S. Feld Biophotonics Award from Optica, Brian T. Cunningham | IEEE Early Academic Career Award in Robotics and Automation, Katherine Driggs-Campbell | Three faculty received NSF CAREER Awards since 2022 | Fulbright-Nokia Distinguished Chair in Information and Communication Technologies, Venugopal V Veeravalli | International Speech Communication Association, Mark Hasegawa-Johnson



Student Statistics

2,310 Undergraduate Students

- **1,397** Computer engineering majors
- **913** Electrical engineering majors
- **545** First-year students (Fall '23)

692 Graduate Students

- **152** MEng/MEng Online students
- **172** Master's students
- **367** Ph.D. students



School of Information Sciences

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

CELEBRATING EXCELLENCE

This academic year marks the 130th anniversary of the iSchool at Illinois and the 75th anniversary of our PhD program. The iSchool is a leader in interdisciplinary research that pushes the boundaries of innovation. Current enrollment in our PhD program is 30 percent greater than in fall 2022, which demonstrates its ongoing excellence and value in the field of information sciences.

RESEARCH AREAS

- Data science and data analytics
- Artificial Intelligence
- Machine learning
- Natural language processing and computational linguistics
- Human-computer interaction and user experience
- Privacy, security, trust, and transparency
- Computer-supported cooperative work
- Health, medical, and bio-informatics
- Data curation and information modeling
- Digital libraries and digital humanities
- Computing for the social good

66

PROJECTS

\$106

MILLION

Our faculty and staff serve as principal investigators and co-investigators on 66 projects totaling \$106 million.

NEW FACULTY

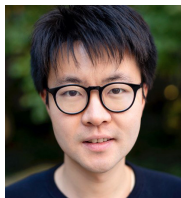
The following faculty joined the iSchool this fall, expanding our research in areas including but not limited to accessible design, information and technology policy, machine learning, mobile health technologies, data curation, and computational reproducibility.



Rachel Adler
Associate Professor



David Mussulman
Lecturer



Jiaqi Ma
Assistant Professor



Meicen Sun
Assistant Professor



Travis Wagner
Assistant Professor



Craig Willis
Teaching Assistant Professor



Yang Zhang
Teaching Assistant Professor

CAREER ACHIEVEMENTS

2018-PRESENT

The iSchool is home to prestigious faculty who have been recognized nationally with awards and grants for their career achievements.

NSF CAREER Awards

- Professor Jingrui He, “Modeling the Heterogeneity of Heterogeneity: Algorithms, Theories and Applications,” \$415,836 (2019)
- Associate Professor Jodi Schneider, “Using Network Analysis to Assess Confidence in Research Synthesis,” \$599,963 (2021)
- Associate Professor Dong Wang, “Holistic Assessment of the Impacts of Connected Buildings and People on Community Energy Planning and Management,” \$500,181 (2019)
- Associate Professor Yang Wang, “Inclusive Privacy: Effective Privacy Management for People with Visual Impairments,” \$255,203 (2019)

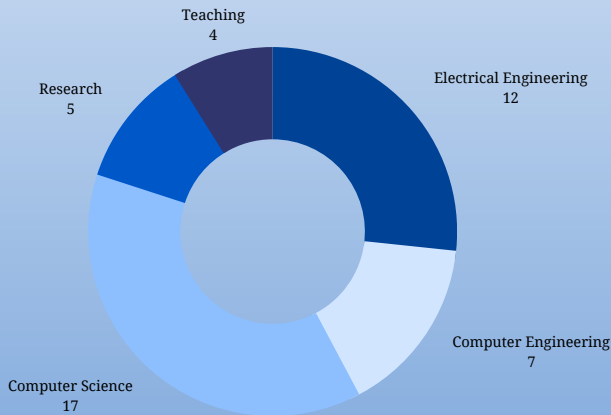
IMLS Early Career Development Grants

- Associate Professor Yun Huang, “Empowering Libraries with Conversational AI,” \$399,996 (2022)
- Assistant Professor Rachel Magee, “Young Researchers: Collaborating with Youth and Libraries for Community Based Scholarship,” \$484,570 (2018)
- Associate Professor Jodi Schneider, “Strengthening Public Libraries’ Information Literacy Services Through an Understanding of Knowledge Brokers’ Assessment of Technical and Scientific Information,” \$416,760 (2021)
- Assistant Professor JooYoung Seo, “MAIDR: Multimodal Access and Interactive Data Representation,” \$649,921 (2023)

KU

THE UNIVERSITY OF KANSAS

Faculty



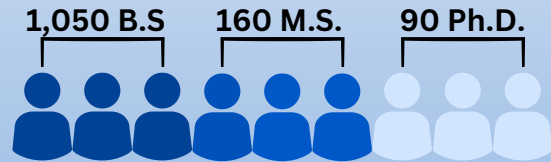
Faculty Hires

- **Han Wang**, data security and privacy, encompassing differential privacy, local differential privacy, secure multiparty computation, and applied cryptography. Ph.D in Computer Science, Illinois Institute of Technology.
- **Sanka Narayan Guria**, programming languages and program synthesis, focusing on developing practical tools that assist programmers build reusable, trusted, and efficient software. Ph.D. in Computer Science, University of Maryland.

Student Highlights

- KU EECS team wins Kansas City Code-A-Thon
- Information Security Club (Jayhackers) competes in the Rocky Mountain Collegiate Cyber Defense Competition (RMCCDC).
- Women in Computing (KUWIC) sends 15 of its members to the 2022 Grace Hopper Celebration (GHC) in Orlando, FL.
- EECS Student Krushi Bharatbhai Patel receives Best Paper Award at the International Conference on Pattern Recognition.

Students



Faculty Research Highlights

- Prof. **Mohammad Alian** received the NSF CAREER Award, entitled “Near-Memory Datacenter Network.”
- Prof. **Taejoon Kim** received a \$5M NSF Convergence Accelerator Phase 2 Award on Combatting Vulnerability and Unawareness in 5G Network Security.
- Prof. **Fengjun Li** leads a \$1.5M DoD-funded Virtual Institute to Protect Cyberspace.
- Prof. **Morteza Hashemi** secured a \$600k NSF Award for Rural Cellular Network Performance Study.
- Prof. **Esam El-Araby**'s group received the Best Poster Award at a Department of Energy Quantum Computing Event.
- Prof. **Alex Bardas** and his student receive Honorable Mention at NSA Cybersecurity Paper Competition.
- Prof. **Victor Frost** receives Best Paper Award at ASEE Midwest Section Conference.

Department News

- KU EECS Department launches a new B.S. in **Cybersecurity Engineering** in Fall 2023.
- The 2023 KU EECS Distinguished Service (KEDS) Award was received by Dr. **Mahta Moghaddam** (BSEE 1986) and Dr. **Phil Anderson** (D.Eng., EE, 1973).



University of Kentucky

Department of Computer Science

<http://www.cs.uky.edu>



The Department of Computer Science at the University of Kentucky is one of the oldest CS departments in the country, established in 1966. We offer bachelor's, master's, and Ph.D. degrees in computer science, bachelor's, master's, and Ph.D. degrees in computer engineering (with ECE), and master's in Data Science. Our alumni go on to pursue a variety of careers and are currently succeeding in academia and companies like Google, Amazon, Microsoft, HP and others.

28	56
Faculty	PhD
30	652
Master's	Undergraduates

New Hires



Dr. Mark Marron

Areas: programming languages, compilers, analyzers, and runtimes



Dr. Kathleen Timmerman

Areas: computer science education

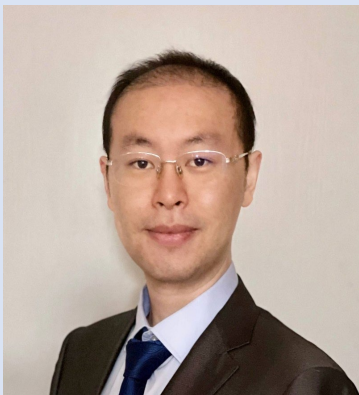


Dr. Haibo Wang

Areas: network measurement, cloud computing, and SDN

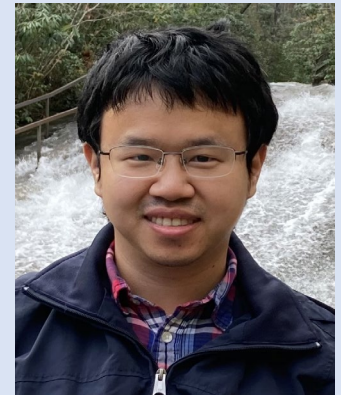
Department Research Highlights

New faculty members who joined the department last year have been very productive:



Dr. Yang Xiao His project titled "An Anti-tracking and Robocall-free Architecture for Next-G Mobile Networks" funded by NSF will develop a fully functional anonymous mobile access architecture that allows legitimate mobile subscribers to access the network without revealing their real identity.

Dr. Xin Liang His project titled "Enabling Quantities-of-Interest Error Control for Trust-Driven Lossy Compression" funded by NSF will develop a trust-driven lossy data compression infrastructure capable of strictly controlling the errors in downstream analysis.



Be the Future.



DEPARTMENT OF
COMPUTER SCIENCE



UNIVERSITY OF MARYLAND COMPUTER SCIENCE

LEADING **FEARLESSLY FORWARD** FOR **50** YEARS

Department of Computer Science Celebrates its 50th Anniversary

RECENT HIRES

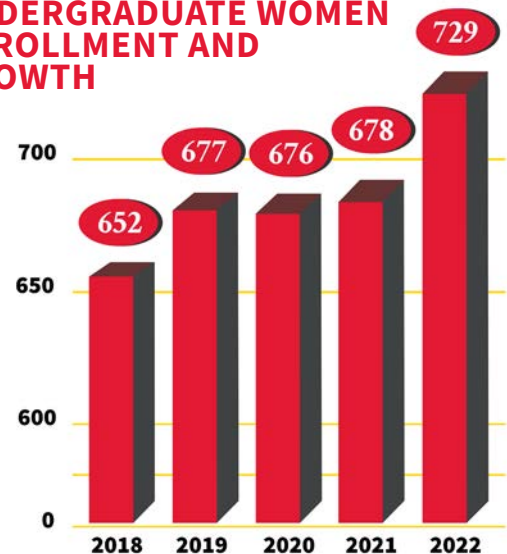
- Fardina Alam** - Ph.D., George Mason University
- Gabriel Kaptchuk** - Ph.D., Johns Hopkins University
- Christopher Kauffman** - Ph.D., University of Minnesota, Twin Cities
- Myungin Lee** - Ph.D., University of California, Santa Barbara
- Alan Zaoxing Liu** - Ph.D., Carnegie Mellon University
- Milijana Surbatovich** - Ph.D., Carnegie Mellon University

RECENT FACULTY AWARDS

- Associate Professor Soheil Feizi** received the **ARO Early Career Program Award**
- Assistant Professor Leo Zhicheng Liu** honored with a **National Science Foundation (NSF) Early Career Development Award**
- Assistant Professor Bahar Asgari** awarded the **Department of Energy (DOE) Early Career Award** and also received an **NSF Principles and Practice of Scalable Systems (PPoS) Award**
- Professor Emeritus Michael Hicks** honored with **Distinguished Paper Award at USENIX Security Symposium**
- Professor Dinesh Manocha** won **Best Paper Award at ACM Conference at the 15th Annual Association for Computer Machinery (ACM) SIGGRAPH Conference on Motion, Interaction and Games (MIG 2022)**
- Assistant Professor Nirupam Roy** received the **NSF CAREER Award to Advance Ambient Computing** & received the **Best Paper Award at the 20th ACM International Conference on Mobile Systems, Applications and Services (MobiSys)**
- Associate Professor Xiaodi Wu** received the **2023 Sloan Research Fellowship**
- Professor Mohammad Hajiaghayi** honored by **Washington Academy of Sciences**
- Associate Professor Jordan Boyd-Graber** and **Assistant Professor Nirupam Roy** received the **Meta Research Awards to Advance AI**
- Assistant Professor Abhinav Shrivastava** received the **NSF CAREER Award to Advance Computers' Understanding of Temporal Phenomena**
- Assistant Professor Furong Huang** named to prestigious **List of 35 Innovators Under 35**
- Professor Emeritus Victor Basili** honored with **Two Lifetime Achievement Awards**
- Associate Professor Michelle Mazurek** honored with **Test of Time Award at IEEE S&P**
- Assistant Professor Laxman Dhulipala** honored with **Allen Newell Award for Research Excellence**
- Assistant Professor Nirupam Roy** received the **NSF CAREER Award to Advance Ambient Computing**

9TH
IN THE NATION
BEST PUBLIC
UNDERGRADUATE PROGRAMS
U.S. News & World Report, 2023 - 2024

UNDERGRADUATE WOMEN ENROLLMENT AND GROWTH



22% Women

**NEW \$20 MILLION
NSF INSTITUTE**
for Trustworthy AI in Law & Society
Led By CS Faculty Hal Daumé III

STUDENT ACCOMPLISHMENTS

- Sophomore Colin Galen** and **Ph.D. students Mohammed Mahdavi** and **Keivan Rezaei** **Earned Silver at the International Collegiate Programming Contest (ICPC) at the US competition and advanced to the World Finals**
- Ph.D. graduate student Vinu Sankar Sadasivan** awarded the **Kulkarni Research Fellowship**
- Ph.D. graduate student Pedro Sandoval-Segura** received a **National Defense Science and Engineering Graduate Fellowship from the Department of Defense**
- Ph.D. graduate student Yiling Qiao** awarded **Meta Ph.D. Fellowship for Virtual and Augmented Reality Research**

UNIVERSITY OF MARYLAND GRAND CHALLENGE INITIATIVES

Maryland Initiative for Digital Accessibility (MIDA) Collaborating with disability communities, tech companies, and policymakers to make digital technologies accessible for people with disabilities. (Lead)

Maryland Initiative for Literacy and Equity (MILE) Ensuring that literacy is a civil right for every child in Maryland, especially given that illiteracy has severe economic, health, social and political consequences. (Partner)

Pandemic Readiness Initiative (PRI) Integrating a broad array of social and behavioral sciences to learn from COVID-19 and other disasters to better prepare for future public health emergencies. (Partner)

Center for Values-Centered Artificial Intelligence (VCAI) Developing conceptual and technical frameworks to advance AI in a way that is not only ethical, but also places the well-being of people at the forefront. (Co-Lead)

RESEARCH CENTERS AND INSTITUTES

Advanced Information Collaboratory (AIC) Exploring the opportunities and challenges of "disruptive technologies" for archives and records management.

Center for Archival Futures (CAFe) Developing and disseminating human-centered approaches to creating the systems, processes, and institutions which enable the use and care of digital objects and data over time.

Computational Linguistics and Information Processing (CLIP) Designing algorithms and methods that allow computers to effectively and efficiently perform human language-related tasks, as well as using computational methods to improve our scientific understanding of the human capacity for language (with Computer Science, Linguistics, and the Robert H. Smith School of Business).

Human Computer Interaction Lab (HCIL) Transforming the experience people have with new technologies through understanding user needs and advancing user interfaces and design methodology (with American Studies, Computer Science, Education, English, Journalism, and Psychology).

Maryland Center for Social Data Science (SoDa) Conducting research, providing education, and working with partners to advance social data science and measurement (with the College of Behavioral and Social Sciences).

NSF National Institute for Trustworthy AI in Law & Society (TRAILS) Multi-institutional effort integrating artificial intelligence participation, technology and governance during the design, development, deployment and oversight of AI systems.

ACADEMIC PROGRAMS

- B.S. Information Science
- B.S. Social Data Science
- B.A. Information & Technology Design
- M.S. Human Computer Interaction
- M.S. of Information Management
- M.S. Library and Information Science
- M.P.S. Game, Entertainment, & Media Analytics
- M.P.S. Data Journalism
- Ph.D. Information Studies

STUDENT DIVERSITY

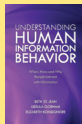
- 2,532 students from 63 countries
- 44.7% women students
- 35.8% undergraduate / 11.3% graduate students from underrepresented minorities

NEWS & IMPACT

Paul T. Jaeger named UMD Distinguished Scholar and Teacher The award honors tenured faculty members who have demonstrated outstanding accomplishments as educators.



Interaction Design 6th Ed. published Co-written by Jenny Preece (INFO), Yvonne Rogers (University College of London), and Helen Sharp (Open University), the book is an intuitive and instructive discussion of the principles underlying the design of effective interactive technologies.



Understanding Human Information Behavior published Co-written by INFO faculty Beth St. Jean, Ursula Gorham, and Elizabeth Bonsignore, the book aims to provide undergraduate students in information science and related disciplines with an applied grounding in information behavior.



Foundations of Information Law published Co-written by Paul T. Jaeger (INFO), Jonathan Lazar (INFO), Ursula Gorham (INFO) and Natalie Greene Taylor (University of South Florida, INFO alum), the book offers an incisive examination of the numerous ways in which law about information directly impacts the roles of information professionals and information institutions.

Jason Baron Appears on Major News Outlets to Share Expertise on Indictment of Former President Trump. The INFO professor of the practice appeared twice on CNN to share his expertise during the network's special coverage of the indictment of former President Trump for the mishandling of classified documents in June 2023. The interviews were conducted by Anderson Cooper and Jake Tapper. He was also quoted in numerous other media outlets.

NEW TENURED & TENURE TRACK FACULTY OF 2023



Irene V. Pasquetto
Assistant Professor



Fiona Shen-Bayh
Assistant Professor



Stephanie Valencia-Valencia
Assistant Professor

CURRENT GRANT HIGHLIGHTS

NSF CAREER: Socio-Algorithmic Foundations of Trustworthy Recommendations Giovanni Luca Ciampaglia Pl. 2/1/23 - 1/31/28. \$602,502.

NSF BCS: Building a sustainable future for anthropology's archives: Researching primary source data lifecycles, infrastructures, and reuse Diana Marsh Pl; Katrina Fenlon Co-Pl. 8/1/23 - 7/31/26. \$349,922.

DoD Minerva Initiative: Semantic Foundations and Formal Methods for Evolutionary System-of-System Architectures Jen Golbeck Co-Pl. 9/15/23 - 9/14/26. \$990,000.

NSF DRL: Integration of Computer-Assisted Methods and Human Interactions to Understand Lesson Plan Quality and Teaching to Advance Middle-Grade Mathematics Instruction Wei Ai Co-Pl. 8/1/23 - 7/31/27. \$1,499,989.



DEPARTMENT OF COMPUTER SCIENCE & ELECTRICAL ENGINEERING

Since receiving a [Research 1 Carnegie designation in 2022](#), UMBC has advanced nearly 20 slots in the undergraduate research and creative projects rankings, now nationally ranked at #27.

UMBC CSEE is a growing institution. Meet some of our newest faculty members!



Tejas Gokhale
Assistant Professor
AI, Machine Learning,
Signal Processing



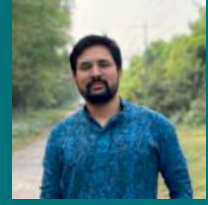
Lara J. Martin
Assistant Professor
Natural Language Generation,
Neurosymbolic AI



Ajinkya Borle
Lecturer
Quantum Computing,
Optimization



Mihail Cutitaru
Senior Lecturer
Computer Architecture,
Embedded Systems



KMA Solaiman (Salvi)
Lecturer
Machine Learning,
Multimodal Data Management

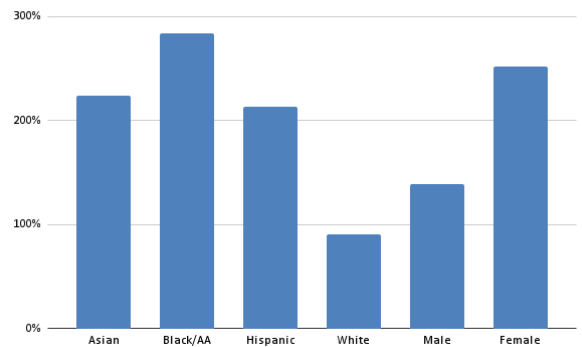
CSEE Highlights

- Dr. Naghmeh Karimi's SECRETS Lab members, along with their collaborators, won the Best Hardware Demo Award at the 2023 IEEE International Symposium on Hardware Oriented Security and Trust (HOST), a flagship hardware Security Conference held in San Jose, California
- Professor Ramana Vinjamuri lead a research group that won a *shark tank* style pitch contest sponsored by the MD New Venture Fellowship Program for their work on developing wearable devices that can detect and help manage stress.
- CSEE Professor Alan Sherman and his colleagues received the Best Paper award in the Computing Education Research Track at the 2023 ACM SIGCSE Technical Symposium.
- The National Science Foundation has awarded UMBC CSEE Professor Chenchen Liu a five-year CAREER award to further her transformative work on AI systems.
- CSEE's Dr. Richard Forno, was recently appointed an Honorary International Professor at the Universidad Autónoma del Estado de Hidalgo (UAEH), one of Mexico's older universities, in recognition of his accomplishments in both the cybersecurity industry and now in academia.

CSEE Numbers at a Glance, 2023

- Enrollment: 2,056 Undergraduates, 1,233 Graduates
- Degrees Granted: 367 Bachelors, 465 Masters (171 MS & 294 MPS), 19 Ph.D. Graduates
- Faculty: 38 Tenured and Tenure Track, 59 Teaching, 4 Research; 9 Fellows of professional societies; 15 (current or past faculty) CAREER awardees

CSEE Fall Enrollment of Full-Time Undergraduates, 2023 vs 2013



UMBC CSEE student body is not only growing, but also growing more diverse, reflecting our commitment to inclusion.



Faculty members Fow Sen Choa, Tinoosh Mohsenin, Curtis Menyuk, Gary Carter, and Ergun Simsek form Centaur (Center for Navigation, Timing and Frequency Research) in partnership with ARL to research light-based timing and navigation technologies.

Highlighting CSEE Student Accomplishments



Christopher Slaughter was awarded a Gates Cambridge Scholarship to pursue a Ph.D. in Electrical Engineering at the University of Cambridge. Chris, who also served as the Class of 2023 Valedictorian, hopes to develop novel biomedical technologies for under-resourced communities.

NSF Report: UMBC is a top baccalaureate institution for African American undergrads who earn PhD in the natural sciences and engineering, as well as doctorates in the life sciences, mathematics, and computer science.

2023-2024



DEPARTMENT OF
INFORMATION SYSTEMS

BY THE NUMBERS



OVER \$10,000,000.00
TOTAL GRANT AND AWARDS IN 2023

\$727,944
REU AWARDS SINCE 2021

\$1,304,326.00
NSF SaTC AWARDS SINCE 2017

\$1,573,796.00
NSF CAREER AWARDS SINCE 2018

\$110,658.00
UMBC CYBERSECURITY GRANTS IN 2023

\$75,000
UMBC VP START AWARDS IN 2023

\$53,911.36
HRABOWSKI INNOVATION AWARDS SINCE 2018

informationsystems.umbc.edu
informationsystems@umbc.edu

DEPARTMENT NEWS

Dr. Karen Chen wins the DARPA AI Tools for Adult Learning prize to create an artificial intelligence-powered tool, Caselet, designed to enhance learners' data science problem-solving skills

Dr. Ida Ngambeki among collaborators awarded \$2,500,000 National Security Agency, NCAE grant for project titled, "Strengthening Workforce Education: Excellence in Programming Securely (SWEEPS)"

Dr. Vandana Janeja, in collaboration with University of Maryland Center for Environmental Science (UMCES), awarded \$3.7 million NSF SCIPe grant for the project, "Enhancing the Transdisciplinary Research Ecosystem for Earth and Environmental Science with Dedicated Cyber Infrastructure Professionals"

Drs. Joshi, Kuber, Mentis, Ngambeki, and Samarah awarded 5 of the 7 inaugural Cybersecurity Leadership Task Force grants within COEIT, UMBC

Two new faculty-led research centers, Center for Responsible and Inclusive Technology (CRIT) and the UMBC Ethical Software Lab

Dr. Sanjay Purushotham wins \$590,000 NSF CAREER award to support efforts to develop new ways to train health-focused machine learning models



STUDENT NEWS

Maryam Alomair received AI in Education DEIA fellowship

Chhaya Kulkarni received GESTAR fellowship

Aikya Inuganti, Madhuri Goyal, and Reed Eberly, Software engineering students, featured in UMBC's Mic'd Up podcast

Mikayla Hopper wins Undergraduate Student Research Award for project titled, "The Evolution of Quantum-Safe VPNs"

Md Fourkanul Islam wins Graduate Student Research Award for project titled, "MyPath: Identifying Surface Characteristics for Generating Personalized Accessible Routes for Wheelchair Users through Crowdsensing"

NEW FACULTY HIRES



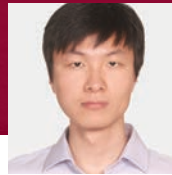
Pubali Datta
Assistant Professor
Cloud and IoT security, system auditing and provenance



Mordecai Golin
Senior Teaching Faculty
Theory, design, and application of algorithms



Anna Green
Assistant Professor
Computational biology and genome research



Shiqing Ma
Assistant Professor
AI, security, and software engineering



Phuc "VP" Nguyen
Assistant Professor
Mobile health and computing, wireless, embedded systems



Cole Adam Reilly
Teaching Faculty
Computer science and the humanities



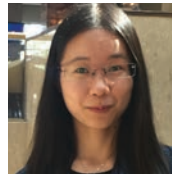
Jay Taneja
Assistant Professor
Distributed computing, infrastructure management



Grant Van Horn
Assistant Professor
Machine learning applied to ecology and conservation



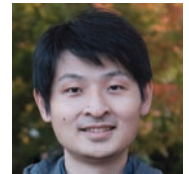
Mark Wilson
Senior Teaching Faculty
Computing and mathematics applied to the social sciences



Juan Zhai
Assistant Professor
Software engineering, natural language processing, security



Eugene Bagdasaryan
Assistant Professor
Security and privacy in emerging AI-based systems
Starting 2024



Mingda Qiao
Assistant Professor
Artificial Intelligence and machine learning theory
Starting 2025

BY THE NUMBERS

#15

in Artificial Intelligence

#25

in Computer Science overall

Top 10

in Mobile Computing, Artificial Intelligence, and Performance Analysis

U.S. News & World Report Graduate School Rankings, 2023 *CS Rankings*

1694

Undergraduate enrollment

617

Master's enrollment

273

Doctoral enrollment

\$26.3M

New research awards in FY23
Including \$4.2M from industry

\$21.6M

Research expenditures in FY23

88

Tenure-stream, teaching, and research faculty up 42% since 2018

RECENT AWARDS & ACCOLADES

AAAS Fellow: Jim Kurose

NetSci Euler Award: Donald Towsley

AAIA Fellows: Prashant Shenoy, Ramesh Sitaraman

NSF CAREER Awards: Cindy Xiong Bearfield, Hung Le

DARPA Young Faculty Award: Amir Houmansadr

DARPA Director's Fellowship: Hao Zhang

Harvard Radcliffe Fellow: Narges Mahyar

Popular Science Brilliant Ten: Mohammad Hajiesmaili

ACM SIGCOMM IMC 2023 Test of Time: Ramesh Sitaraman

Usenix OSDI 2023 Best Paper: Emery Berger, Sam Stern (PhD), Juan Altmayer Pizzorno (PhD)

ACM SIGIR 2023 Early Career Excellence in Research & Excellence in Community Engagement: Hamed Zamani

ACM SIGCHI 2023 Best Paper: Alyx Burns (PhD), Narges Mahyar

ACM Sensys 2022 Best Paper: Minhao Cui (PhD), Jie Xiong

University of Massachusetts LOWELL



Dedication of the Richard A. Miner School of CIS, October 2022

Richard A. Miner School of Computer & Information Sciences

In Fall 2022, UMass Lowell launched a new school of computer science, named in honor of Rich Miner '86, '89, '97, co-founder of Android.

Research Areas

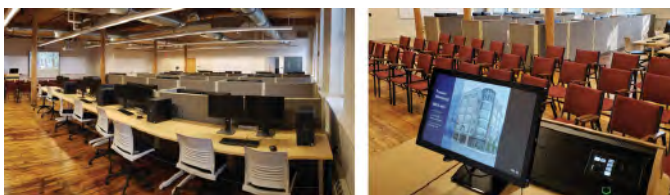
Artificial Intelligence
Biomedical Informatics
Computational Geometry
Computational Social Science
Computer Science Education
Databases and Data Mining
Digital Forensics
Graphics and Visualization
Human-Computer Interaction
Human-Robot Interaction
Machine Learning
Natural Language Processing



NERVE Center celebrates 10 years of breaking robots

Networking
Operating Systems
Programming Languages
Robotics
Security and Privacy
Text Mining and Engineering
Theory and Algorithms

Facilities



Cyber Security Range: 40 seat lecture theater, 40 workstations, real world security problems simulated in a controlled environment



New England Robotics Validation and Experimentation (NERVE) Center: Humanoids, manipulators, exoskeletons, mobile robots, unmanned aerial vehicles

UMass Lowell CIS by the Numbers

Faculty members	31
NSF CAREER awards	7
Research expenditures 2017 - 2022	\$22.9M
New research awards in FY2022	\$6.9M
Undergraduate majors, Fall 2022	949
Graduate students, Fall 2022	374
Degrees awarded in 2021 - 2022	178 BS 63 MS 10 PhD

Highlights

New Faculty Member, Samantha Reig, Assistant Professor of Computer Science, CMU PhD 2023, Research interests: HCI and HRI

NSF CAREER Award, Reza Ahmadzadeh, Robot Learning of Complex Tasks via Skill Reusability and Refinement, \$499K

NSF Award, Anna Rumshisky, Machine Learning for Student Reasoning during Challenging Concept Questions, \$171K

NSF CISE Research Initiation Initiative Award, Paul Downen, Codata: A Logical Fusion of Object-Oriented and Functional Programming, \$190K

NSF Award, Matteo Cimini, SHF: Language-Agnostic Proofs, \$214K

NSF Award, Holly Yanco, POSE: Phase I: Collaborative Open-source Manipulation and Perception Assets for Robotics Ecosystem, \$299K

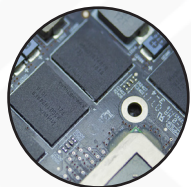
NSF Award, Xinwen Fu, SaTC: EDU: Creating Windows Advanced Memory Corruption Attack and Defense Teaching Modules, \$400K

NIH NIMH Award, Hong Yu, Improving Suicide Prediction using NLP-Extracted Social Determinants of Health, \$3.5M

10 Years of Breaking Robots, UMass Lowell NERVE Center Celebrates 10th Anniversary, 60+ awards and \$25M of funding over the past decade



RESEARCH HIGHLIGHTS



Memory-saving tool integrated into Linux.

A novel mechanism designed by CSE researchers that automatically tiers memory pages has been deployed in the Linux operating system.



Leveraging AI to fight online hate speech.

A new hate speech detection tool developed at CSE combines cutting-edge deep learning models with traditional rule-based approaches to more accurately classify hateful content online.



Sensor turns everyday surfaces into inputs.

The sensing system can turn nearly any surface into a high-fidelity input device for computers, from couches and tables to sleeves and even the human body.



A surprisingly simple way to foil car thieves.

Researchers have developed a vehicle security system that uses your car's cigarette lighter to protect against sophisticated cyber attacks, theft, and more.

HONORS & ACHIEVEMENTS

8 NSF CAREER Awards earned by CSE faculty in AY 22/23

6 Test-of-Time Awards received by faculty in AY 22/23 at MICRO, EuroSys, SIGMOBILE, Robotics: Science and Systems, ICDM, and Crypto conferences

8 papers by CSE researchers cited as influential in 2023 ISCA 25-year retrospective on innovation in computer architecture

Student and faculty researchers in CSE won first place and \$500,000 in the **Amazon Alexa Prize SimBot Challenge**

2 student teams with U-M CSE have advanced to the AY23/34 final round of the **IBM Call for Code Global Challenge**

ACADEMIC PROGRAMS

PhD, Computer Science and Engineering

MSE/MS, Computer Science and Engineering

MS, Data Science

BSE, Computer Engineering

BSE/BS, Computer Science

BSE/BS, Data Science

Minor, Computer Science

514

Graduate Students

3250

Undergraduate Students

96

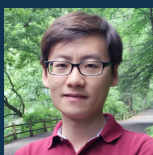
Faculty

NEW FACULTY



STEVEN BOGAERTS

Lecturer III
Deep experience in CS course creation and instruction



ANG CHEN

Associate Professor
Computer systems, networking, and security



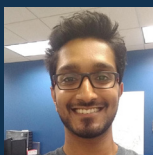
DAVID JURGENS

Associate Professor
Understanding human behavior through natural language processing and computational social science



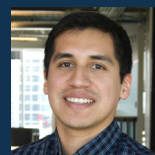
JEONG JOON PARK

Assistant Professor
Realistic reconstruction and generation of 3D scenes



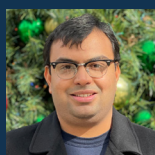
GOKUL RAVI

Assistant Professor
Quantum computing architecture and systems



ALEXANDER RODRÍGUEZ

Assistant Professor
Artificial intelligence, machine learning, and multi-agent systems for computational epidemiology and public health



NISHIL TALATI

Assistant Research Scientist
Improving the efficiency of computing systems for emerging data-intensive workloads



NICOLE WEIN

Assistant Professor
Theoretical computer science, including algorithms, data structures, graph theory, and fine-grained complexity

NEW FACULTY



Jiasi Chen
Associate Professor
Computer networks, mobile computing, AR/VR



Vladimir Dvorkin
Assistant Professor
Control and ML for sustainable energy; data privacy



Chris Giebink
Professor
Organic optoelectronics and photonics



Lisa Li
Assistant Professor
Control theory with applications to neuroscience



Di Liang
Professor
Semiconductor optoelectronics



Samet Oymak
Assistant Professor
Data science and machine learning



Liyue Shen
Assistant Professor
Biomedical AI, machine learning, computer vision

PEOPLE POWERING INNOVATION

Electrical and Computer Engineering at Michigan combines a progressive curriculum and fundamental research with an intellectual community that values diversity, interdisciplinary teamwork, entrepreneurial thinking, and inventiveness. Some of our key areas of impact include: smart electronics; intelligent systems; sustainable energy; information; communications; automation + robotics; and the quantum revolution.

DEGREE PROGRAMS

BSE

- Electrical Engineering
- Computer Engineering

MSE and PhD

- Electrical and Computer Engineering

MASTER OF ENGINEERING

- Electrical and Computer Engineering

ONLINE PROGRAMS

CONTINUUM

offering online non-degree courses including Computational Machine Learning and Joy of Coding.

Our degree programs are ranked in the **TOP 10** by *U.S. News & World Report*, joining the **UNIVERSITY OF MICHIGAN'S >100 TOP 10** ranked programs

RECENT COMPUTING HEADLINES

- [Introducing students to the sociotechnical impact of technology](#)
- [New UG courses prepare students for the Second Quantum Revolution](#)
- [Six faculty will help shape the future of semiconductors with JUMP 2.0](#)
- [Microelectronics researchers working to aid semiconductor industry](#)
- [Open-source hardware: a growing movement to democratize IC design](#)
- [A brain game may predict your risk of infection](#)
- [Streamlining home assessments for energy justice](#)
- [Automating analog circuit design earns Best Paper Award](#)
- [Research to simplify big data graphs earns Best Paper Award](#)
- [New Quantum Research Institute](#)

92 Faculty

593 UG Students
(302 CE, 291 EE)

697 Master's Students

261 PhD Students

\$53.7M Research

AREAS OF FACULTY RESEARCH

- Accessibility and Computing
- Archives and Digital Curation
- Collective Intelligence and Organizational Technology
- Critical Studies of Design and Computing
- Data Science, Analytics and Visualization
- Educational Technology and Learning Analytics
- Health Informatics
- Human Social Change
- Information Economics
- Library and Information Science
- Privacy
- Science, Technology and Society
- Social Media and Social Computing
- Ubiquitous Computing

NEW FACULTY IN 2023



Lisa Carter
Clinical Professor
MSI, University of Michigan



Ben Green
Assistant Professor
PhD, Harvard University



Stephanie Brenton
Lecturer III
MS, Western Michigan University



Hanna Hoover
Lecturer III
PhD, Florida State University



Jim Rampton
Lecturer III
MSI, University of Michigan



Ramiro Serrano Vergel
Lecturer III
PhD, University of Arkansas



Jackie Wolf
Lecturer III
MSI, University of Michigan

DEGREES OFFERED AND STUDENT ENROLLMENTS

- Bachelor of Science in Information: **427**
- Master of Science in Information: **599**
- Master of Health Informatics: **89**
- Master of Applied Data Science (online): **593**
- PhD in Information: **135**
- **Total:** **1843**

Enrollment estimate as of 9/30/23

HONORS & ACCOMPLISHMENTS HIGHLIGHTS

- **Computing Researching Association Anita Borg Early Career Award:** Robin Brewer
- **Association for Computing Machinery (ACM) Fellow:** Kentaro Toyama
- **ACM Distinguished Member:** Silvia Lindtner
- **Society of American Archivists Fellow:** Ricky Punzalan
- **International Communication Association Public Policy Research Award:** Christian Sandvig
- **Association for Education in Journalism and Mass Communication Nafziger-White-Salwen Dissertation Award:** Chelsea Peterson-Salahuddin
- **U-M Office of the Provost 2024 Henry Russel Award:** Oliver Haimson
- **U-M Office of the Provost Inclusive Teaching Award:** Colleen van Lent

CURRENT GRANT HIGHLIGHTS

- NSF CAREER grant: Nazanin Andalibi "Emotion Artificial Intelligence in the Future of Work: A Privacy and Relational Ethics Lens" — **\$649,124**
- NSF CISE Medium grant: Oliver Haimson (with collaborators at Princeton, Northwestern, & UC Irvine) "Designing Technologies for Marginalized Communities" — **U-M portion is \$846,131**
- Social Research Council grant from Mercury program: Eric Gilbert, Ceren Budak, & Sarita Schoenebeck "Network-transforming Interventions for Reducing the Spread of Health Misinformation Online" — **\$472,794**
- Institute of Museum and Library Services Early Career Development Grant: Megan Threats "Enhancing the Capacity of Public Libraries to Support the Health Information Needs of Formerly Incarcerated Individuals" — **\$416,995**
- Amazon Research Award: Misha Teplitskiy "Learning by Review" — **\$50,000**
- Google Award for Inclusion Research: Patricia Garcia, Pelle Tracey "Examining Algorithmic Decision-Making in Homeless Service Systems" — **\$60,000**

RESEARCH HIGHLIGHTS

- POTATO: The Portable Text Annotation Tool
- An Empirical Analysis of Racial Categories in the Algorithmic Fairness Literature
- VizProg: Identifying Misunderstandings By Visualizing Students' Coding Progress
- The Craft and Coordination of Data Curation: Complicating "Workflow Views of Data Science"
- Infrastructuring Care: How Trans and Non-Binary People Meet Health and Well-Being Needs through Technology
- Equitable Research PRAXIS: A Framework for Health Informatics Methods
- Less is Not More: Improving Findability and Actionability of Privacy Controls for Online Behavioral Advertising
- VRGit: A Version Control System for Collaborative Content Creation in Virtual Reality



OVERVIEW

- 19 tenured/tenure-track faculty members, including 3 NSF CAREER award recipients
13 full-time/part-time lecturers
Over 1,200+ students: 710+ undergraduates and 490+ graduates
4 B.S. programs, 5 M.S. programs, 1 Ph.D. program, and 3 undergraduate minor programs

RESEARCH HIGHLIGHTS

Research sponsors

NSF, Ford, Oracle, NHTSA, IBM, Toyota, etc.

Selected recent grants

- Birhanu Eshete, 'CAREER: Towards Provenance-Driven Understanding of Machine Learning Robustness', NSF, \$619,838
Probir Roy, 'REU Supplement: Collaborative Research: CNS Core: Small: Towards Efficient Cloud Services', NSF, \$16,000
Probir Roy, 'Designing an Edge-Based Roadside Monitoring System to Reduce Deer-Vehicle Collisions', Oracle for Research, \$43,000 (Cloud Service)
Zheng Song, 'REU Supplement:CRII: CNS: With Uncertainty Comes Opportunity: Providing Best-Effort Edge Services with Uncertain and Limited Resources', NSF, \$16,000
Zheng Song, 'Fostering Diverse Undergraduate Researchers in Applied Robotics and Urban Sensing', UM-Dearborn/UM-Flint Collaborative Grant, \$31,286
Zheng Song, '2023 Battery Workforce Challenge' (Part. Investigator with Xuan Zhou (PI), et al.), DoE/ASEE, \$152,051
Foyzul Hassan, 'REU Supplement:CRII: SHF: Assessing and Profiling Continuous Integration for Machine Learning Applications', \$16,000

Selected recent publication venues

TDSC, TSE, TOPS, USENIX SEC, PETS, ICSOC, TOSEM, MSR, ESEM, ASE, TSE, TBD, TiiS, ICPR, PETRA, TSC, ITR, ICDCS, CCS, CODASPY, ACSAC, EDBT, AAAS, etc.

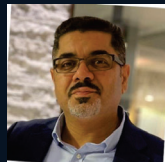
OTHER HIGHLIGHTS

- Jie Shen served as Vice Chair of the American Society of Nondestructive Testing Detroit Section
Khouloud Gaaloul served as Co-Chair of Visualization for the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE)
Birhanu Eshete served as Co-Chair of Diversity, Equity, and Inclusion (DEI) for the 43rd IEEE Symposium on Security & Privacy (S&P)
Bruce Maxim was appointed as Associate Editor for the International Journal of Game-Based Learning (IJGBL)
Bruce Maxim and Jeff Yackley received a best paper award at ASEE Annual Conference 2023
Mohamed Abouelenien, Jin Lu, Di Ma, and Birhanu Eshete were granted multiple patents/inventions
Bruce Maxim was honored as the Narasimhamurthi 'Nattu' Natarajan Collegiate Professor
Anys Bach received the 2023 Distinguished Teaching Award at the University
New AI concentration for BS in Computer and Information Science launched in Fall 2023

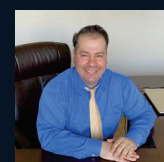
NEW FACULTY HIRES



Dr. Ang Li
Assistant Professor
Cybersecurity
PhD'23 Arizona State U



Dr. Tawfiq Khalil
Lecturer I
Computer & Infor. Science
PhD'14 Oakland U



Dr. Hany Othman
Lecturer I
Computer & Infor. Science
PhD'13 Colorado Tech U

DIVISION OF

**COMPUTER,
ANALYTICS &
MATHEMATICS**



FEATURED GRANTS

- NSF NRT: Interdisciplinary Graduate Training through Research in Artificial Intelligence and Secure Networked Sensing to Mitigate the Crisis of Alcohol and Drug Abuse
- CDC: One Health Modeling to Combat Antimicrobial-Resistant Organisms
- NSF PFI-TT: Crowd-based Alert and Detection Service to Increase the Safety of People with Special Needs
- NSF: FMitF: Track II: SMT-Based Reachability Analyzer of NGAC Policies
- NIST: Building Enablers for Multi Industry Sectors Collaborative Federated Open Platforms & Assets, as a Foundation for Cross-Industry End-to-End Services Innovation and Delivery AGILITY in the 5G & Beyond Era
- DoE Education Center of Excellence: AI-Empowered Spatial Computing
- MoDoT: Developing a Hazard Detection and Alert System to Prevent Worker Fatalities
- NSA: GenCyber Summer Camps for Underrepresented High School Students in the Kansas City Metropolitan Area
- Jackson County: Addressing Health Disparities on the Eastside



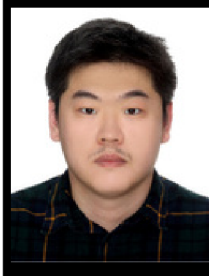
DR. YUGI LEE

Dr. Lee received the 2023 Provost's Award for Mentoring. She was the primary advisor to 11 Ph.D. graduates and 80 M.S. thesis students.



DR. BAEK-YOUNG CHOI

Dr. Choi is featured in the ComSoc video project – 50 women in the IEEE Communications Society (ComSoc).



DR. TIANHANG ZHANG

New Faculty: Dr. Zhang, Ph.D., Electrical and Computer Engineering, University of Toronto. Area: Machine Learning Security and Privacy

The Division of Computing, Analytics and Mathematics at UMKC offers degrees in computer science, data science and information technology. Fall 2023 enrollments included 60 Ph.D., 888 master's and 488 undergraduate students.



UNIVERSITY OF NEBRASKA-LINCOLN SCHOOL OF COMPUTING



STUDENTS

929 undergraduate students	43 master's students	63 doctoral students
160 bachelor's degrees	22 master's degrees	10 doctoral degrees

GROWTH TRENDS

42% increase in enrollment	2000+ students served annually
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FACULTY

33 Tenure Track	10 Instructional
10 NSF CAREER Awardees	1 IEEE Fellow
7 Endowed Chairs	

RESEARCH AREAS

INFORMATICS, ANALYTICS, FOUNDATIONS
SOFTWARE ENGINEERING
SYSTEMS



RESEARCH

\$3.5M in expenditures	\$8M in new grant funding	94 total faculty publications
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OUTREACH

 BRAID Initiative Founding Member	 NCWIT Aspirations in Computing	
 Nebraska College Preparatory Academy	 STEM CONNECT with community colleges	 Intercollegiate Programming Contest

NEW MAJOR

Our new interdisciplinary data science major offers flexibility for engineering and non-engineering students to earn a dual degree in data science and another chosen discipline, enabling students to take advantage of career opportunities across diverse fields involving data-driven systems.

NEW MASTER'S PROGRAM

Our new accelerated master's program allows highly qualified undergraduate students to take graduate courses that count toward both their bachelor's degree and master's degree. With a head start on completing their graduate courses, students can earn a master's degree in just one additional year of education.

NEW DIRECTOR

"The School of Computing is a special place with fantastic growth potential, collaborative faculty, and unwavering commitments to research, education, and outreach activities. I'm grateful for the opportunity to lead the School of Computing."



Witawas Srisa-an
Professor

WHO WE ARE

The UNM Department of Computer Science as a stand-alone department dates back to the 1970s. Those early days included making history, including a former faculty member (Cleve Moler) who revolutionized the industry by founding MATLAB. Since then, the department has progressed as rapidly as technology itself, now leading in cutting-edge fields like AI, robotics and bioinformatics in our quest to address the urgent challenges of our modern society.



WE ARE LEADING WITH IMPACT.

NEW FACULTY



XIN CHEN, assistant professor

Chen is interested in the issue of trusting AI and cyber-physical systems. His research is focused on solving the safety and security problems on systems equipped with machine learning components using formal methods and the verification and validation of embedded systems.



AFSAH ANWAR, assistant professor

Anwar's research interest is on security and privacy, in particular malware defense, network security, threat intelligence and vulnerability management. His current projects include investigating how publicly-known information impacts end users, the victimization of oblivious VPN users, and designing efficient partitioning attacks on the Bitcoin network.

WE ARE RESEARCH-INTENSIVE.



As New Mexico's flagship institution, UNM is the only R1 (Carnegie Classification - Very High Research Activity) university in the state and has strong partnerships with nearby national labs Sandia and Los Alamos, in addition to AFRL and Santa Fe Institute. This provides our faculty and students with unique research possibilities that few other computer science departments can match.



WE ARE DIVERSE.

40%

of our faculty are female

69%

of our undergraduates are from underrepresented groups

Learn more about us at cs.unm.edu

WE ARE HIRING.

We are searching for an exceptional candidate for an endowed position, the Cleve Moler and MathWorks Chair of Mathematical and Engineering Software. Please contact chair@cs.unm.edu with nominations.

RESEARCH HIGHLIGHTS



Three CSE projects received \$1.42M AUD under the Australian Research Council Discovery Projects scheme.

The grants will support research into wider deployment of modern DNA technologies, processing big temporal graphs, and generalisable and unbiased dynamic recommender systems.



Scientia Professor Jingling Xue elevated to IEEE Fellow.

He was honoured in recognition of his world-leading work in programming languages with an emphasis on compiler optimization and program analysis.



Professor Fethi Rabhi spearheads new UNSW FinTech AI Innovation Consortium.

The consortium joins six organisations together to drive leading-edge research into responsible adoption of artificial intelligence in the finance sector.



Prof. Toby Walsh, A/Prof. Haris Aziz and Prof. Flora Salim awarded more than \$1.6M AUD in the CSIRO and NSF collaboration program.

Their projects aim to develop responsible and ethical AI approaches to tackle drought, environmentally harmful emissions and infectious disease.



Scientia Professor Gernot Heiser elected to the German National Academy of Science Leopoldina.

The election recognises the importance and global visibility of his work in the field of cybersecurity.



Professor Flora Salim co-organised the Communication of the ACM East Asia and Oceania Special Section.

The articles in this section aim to not only showcase technological advancements from this region, but also to strengthen research collaboration and communication with regions worldwide.



Scientia Professor Toby Walsh received the Celestino Eureka Prize for Promoting Understanding of Science.

The prize recognises his work communicating about Artificial Intelligence (AI) through the media, in books and at academic forums.



73

academic staff

7 Associate Lecturers	14 Professors
20 Lecturers	3 Scientia Professors
17 Senior Lecturers	1 Australian Laureate Fellow
11 Associate Professors	



13,922

students

8,889 Undergraduate students
4,623 Postgraduate students
254 Research students
156 Non-award students

NEW STAFF MEMBERS



Sonit Singh
Associate Lecturer



Aditya Joshi
Lecturer



Hammond Pearce
Lecturer



Yuchao Jiang
Lecturer



Yulei Sui
Associate Professor



Armin Chitizadeh
Lecturer



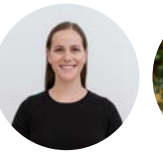
Kristian Mansfield
Associate Lecturer



Raymond Louie
Lecturer



Sara Ballouz
Senior Lecturer



Hannah Beder
Lecturer



Katie Clinch
Associate Lecturer



Yuekang Li
Lecturer



Hao Xue
Lecturer

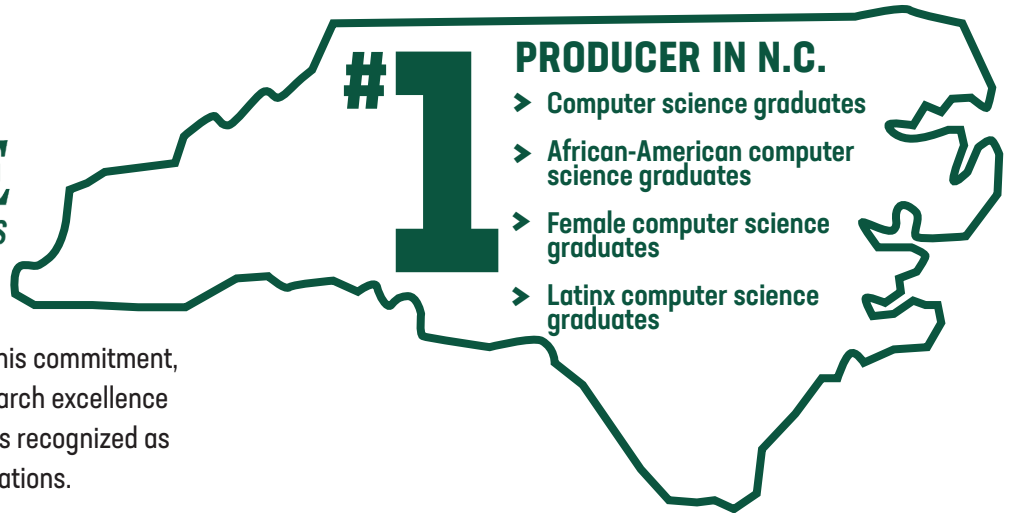




CHARLOTTE

COLLEGE OF COMPUTING AND INFORMATICS

is committed to being the recognized leader for competitive, innovative, and market-responsive computing and informatics education. Through this commitment, the College develops focused, trend-setting research excellence with national and international recognition, and is recognized as the industry leader for partnerships and collaborations.



DEGREES OFFERED

10

BACHELOR'S DEGREES

- > B.A. CS, Bioinformatics
- > B.S. CS, Bioinformatics
- > B.S. CS, AI, Robotics, and Gaming
- > B.S. CS, Data Science
- > B.S. CS, Software, Systems, and Networks
- > B.S. CS, Cybersecurity
- > B.A. CS, Human-Computer Interaction
- > B.A. CS, Information Technology
- > B.S. CS, Software Engineering
- > B.S. CS, Web and Mobile Applications

4

MASTER'S DEGREES

- > M.S. Computer Science
- > M.S. Cybersecurity
- > M.S. Information Technology
- > M.S. Bioinformatics

DUAL MASTER'S DEGREES

- > M.Arch. Architecture and M.S. Information Technology
- > M.S. Architecture and M.S. Information Technology

2

DOCTORAL DEGREES

- > Ph. D. in Bioinformatics and Computational Biology
- > Ph. D. in Computing and Information Systems

CCI BY THE NUMBERS

#7

U.S. CS degrees

4,786

Total student enrollment

3,274

B.A./B.S. degrees

1,287

M.S. degrees

148

Ph. D. candidates

35%

PELL GRANT ELIGIBLE

62%

4-YEAR UNDERGRAD GRADUATION RATE

74%

6-YEAR UNDERGRAD GRADUATION RATE

SOURCES: datausa.io/profile/cip/computer-science#map_institutions_grads | ir-analytics.charlotte.edu/tableau/fact-book-enrollment-summary-dashboard-0
ir-analytics.charlotte.edu/tableau/undergraduate-level-retention-and-graduation-dashboard

FACULTY HIGHLIGHTS



DR. MARY LOU MAHER, Professor in the Department of Software and Information Systems, received the **NCWIT Harrold and Notkin Research and Graduate Mentoring Award**. The award recognizes faculty members from non-profit, U.S. institutions (including U.S. territories) who combine outstanding research accomplishments with excellence in graduate mentoring, as well as those who advocate for recruiting, encouraging, and promoting women and minorities in computing fields at both a local and national level.

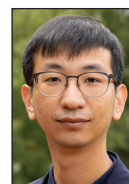
NEW FACULTY



MARCO VIEIRA
Professor
Security and Reliability



HONGFEI XUE
Assistant Professor
Wireless Sensing



LI YANG
Assistant Professor
Machine Learning



TAO WANG
Assistant Professor
Network and
Cyber-physical security



JIAN XIANG
Assistant Professor
Software Security

A History of Excellence

Founded in 1964, the UNC Department of Computer Science continues to be a leader in the field. With all the advantages of a top-4 public research university, UNC CS is advancing the state of the art with a focus on diversity, equity, and inclusion.

#24 among U.S. computer science graduate programs

#4 among U.S. public universities

2nd free-standing CS department founded in the U.S.

#22 among all U.S. universities

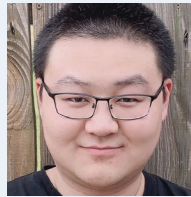
Rankings from U.S. News & World Report, 2023-2024

A Dual Mission

Always balancing both teaching and research, new faculty members for 2023 and 2024 bring experience in AI, machine learning, hardware security, computer graphics, augmented and virtual reality, pedagogy, and more.



Praneeth Chakravarthula



Tianlong Chen



Andrew Kwong



Richard Marks



Connor McMahon



Kevin Sun

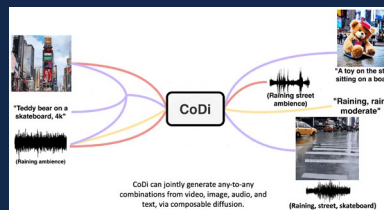


Huaxiu Yao

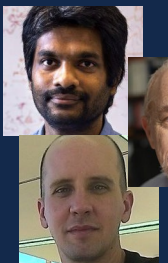
A Culture of Collaboration



Daniel Szafer and researchers at CU Boulder received a \$1.8 million NSF grant to aid chemists with robotics to automate tasks safely and efficiently.



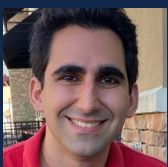
The UNC NLP group worked with Microsoft Azure Cognitive Service Research to develop CoDi, a generative model capable of processing and generating content across multiple modalities.



UNC Computer Science helped launch the AI Project at UNC, a collaboration with Philosophy, Linguistics, and the Parr Center for Ethics to take on philosophical and foundational questions concerning artificial intelligence and virtual worlds.



A team of researchers and physicians led by **Ron Alterovitz** has demonstrated, for the first time, a robotic needle capable of autonomously maneuvering through intricate, living lung tissue while avoiding obstacles and important lung structures.



Saba Eskandarian received an NSF CAREER Award to improve reporting of abusive content on private messaging platforms.



Natalie Stanley received an NIH grant to develop automated bioinformatics techniques that identify and characterize clinically predictive intracellular responses from ex vivo stimulation.



UNC GREENSBORO

Find your way here



Department of Computer Science



We are one of the few ABET-accredited computer science B.S. programs in the state.

Degree Programs

B.S. in Computer Science
M.S. in Computer Science
Ph.D. in Computer Science

Concentrations

Data Science (B.S.)
Data Science (M.S.)
Healthcare AI (M.S.)

Student Enrollment



Updates on our new Ph.D. program

- ✓ Program launched in Fall 2022.
- ✓ 5 students are currently enrolled in the program.

Faculty

18 Full-time
(9 Tenured or Tenure Track)

Recent Hire

Qianqian Tong (Assistant Professor)
Ph.D., University of Connecticut

Research areas: Machine Learning, Stochastic Optimization, Differential Privacy, Sparse Learning, Graph Learning and Federated Learning.



Research Sponsors

Federal Agencies

NSF, NIH, DoD, NIST, NEH

State Agencies

NC Biotech Center

Private Companies

Microsoft, Google, Cone Health

Research Labs

- Advanced Research Image Analysis (ARIA) Lab
- Clinical NLP Lab
- Data and Learning Lab (DLL)
- Graph Computing Lab (GraphLab)
- Interactive Realities (IR) Lab
- Network Information Lab (NIL)
- Security, Privacy, and Networking (SPAN) Lab

Fall '23 by the numbers

1,744 Undergraduate Students

2,862 Graduate Students

4

Undergraduate Programs

Information Technology
Computer Engineering
Computer Science
Cybersecurity

6

Graduate Programs

Artificial Intelligence
Computer Engineering
Computer Science
Cybersecurity
Data Engineering
Ph.D. in Comp. Sci./Eng.

62 Total

29 Professional Faculty

33 Tenure-Track Faculty

Introducing:



Wajdi Aljedaani
Clinical Assistant Professor



Bahareh Dorri
Lecturer



Hadiseh Gooran
Lecturer



Mohsen Amini
Associate Professor



Ervin Frenzel
Clinical Associate Professor



Faridul Islam
Clinical Associate Professor



Ajita Rattani
Assistant Professor



Haili Wang
Clinical Assistant Professor

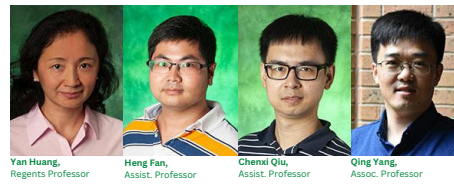


Scan here to
access our
news page

Award Highlights:



\$600k NSF grant awarded
“CICI: UCSS: Secure Containers
in High-Performance Computing
Infrastructure.”
Yuede Ji, Assistant Professor

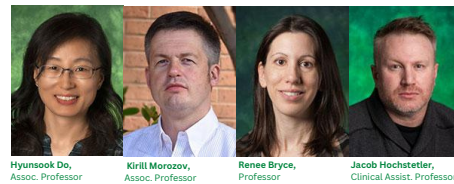


Yan Huang, Regents Professor | Heng Fan, Assist. Professor | Chenxi Qiu, Assist. Professor | Qing Yang, Assoc. Professor

\$3.76m U.S. Army RL grant awarded
Research on foundational understanding of cognitive distributed sensing with UNT and other universities.

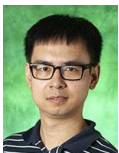


\$430k NSF grant awarded
“Collaborative Research: Engaging Blind and Visually Impaired Youth in Computer Science through Music Programming.”
Stephanie Ludi, Associate Chair & Professor



Hyunsook Do, Assoc. Professor | Kirill Morozov, Assoc. Professor | Renee Bryce, Professor | Jacob Hochstetler, Clinical Assisit. Professor

\$150k NSF grant awarded
“NSA GenCyber” - program instructing grade-school students on computer science & cybersecurity



\$350k NSF grant awarded - “SaTC: CORE: Small: Customizable Geo-Obfuscation to Protect Users’ Location Privacy in Mobile Crowdsourcing”
Chenxi Qiu, Assistant Professor



Rrezarta Krasniqi, Ph.D. Candidate | Rubenia Borge, Ph.D. Candidate

Ph.D. Candidates recognized for their research presentations at the **2023 CMD-IT/Tapia Conference** on Sep. 13-15, 2023

CONNECT W/ CSE

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940-565-2767
cse@unt.edu

@UntCse

@untcomputerscience

UNT Department of Computer Science & Engineering



COMPUTER SCIENCE AND ENGINEERING

RESEARCH THEMES

- AI and Machine Learning
- Algorithms and Theory
- Assistive Technologies
- Computer Architecture and Nanotechnology
- Computer Vision, Medical Imaging, and Biometrics
- Digital Humanities
- Human Computer Interaction
- Natural Language Processing
- Network and Data Science
- Scientific and High-Performance Computing
- Security, Privacy, and Cryptography
- Software Engineering
- Visualization and Visual Analytics
- Wireless, Mobile, and Embedded Systems

CSE RESEARCH NEWS

- Prof. Xiaobo Sharon Hu received the 2023 Marie R. Pistilli Women in Engineering Achievement Award from the Design Automation Conference (DAC).
- Ph.D. student, Brianna Lynn Wimer, was named a 2023 Google Ph.D. Fellow.
- Prof. Adam Czajka received a NSF CAREER award.
- Prof. Xiangliang Zhang leads NSF Cybertraining for Chemical Data Scientists.
- Prof. Jane Cleland-Huang leads a multi-institution, multi-million-dollar NASA project to ensure safer skies with smart drones.
- Ph.D. student, Dewen Zeng developed a system for pediatric ICUs that allows automatic anomaly detection of lung water based on vital signs and sequential chest X-ray images.
- Prof. Matthew Morrison partners with HBCUs to grow the U.S. microelectronics workforce.
- Prof. Yiyu Shi named a top innovator in DAC's Under 40 Innovator Awards. His designs include a framework for diagnosis, treatment planning of congenital heart disease + smart implantable cardioverter defibrillator.
- Ph.D. student, Wenhao Yu, named a 2023 Bloomberg Data Science Ph.D. Fellow.
- Ph.D. student, Zhichun Guo, named a 2023 Snap Research Fellow.

BY THE NUMBERS

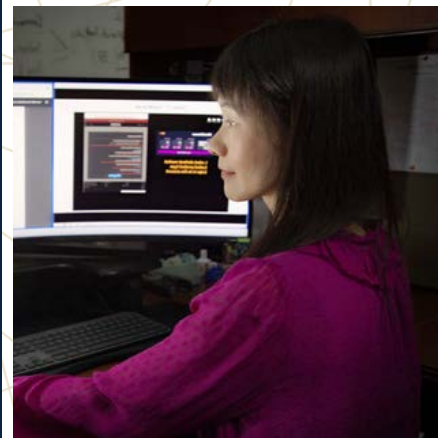
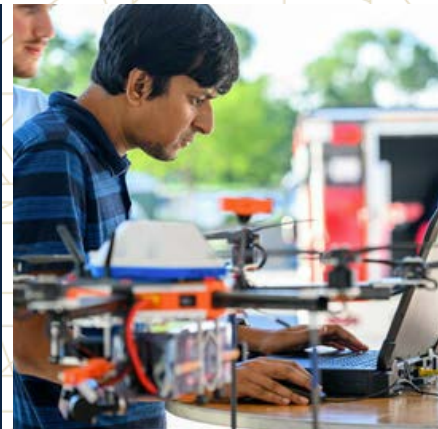
ENROLLMENT

- 158 B.S. graduates in 2023
- 491 CSE majors (sophomore through senior year)
- Expanding Masters Program
- 180 PhD students

Our Ph.D. program includes full financial support, including a stipend and tuition scholarship.

FACULTY & RESEARCH

- 36 Full-Time Faculty
- 86 new research grants awarded in FY 23 (\$17.7 million)
- \$15 million expended in FY23
- Interdisciplinary research programs with:
 - Notre Dame Technology Ethics Center
 - Institute for Data Science and Society
 - Institute for Global Development
 - Center for Research Computing
 - Institute for Global Health
 - Institute for Precision Health
 - Institute for Advanced Study



 www.cse.nd.edu



Penn is the birthplace of the ENIAC, the world's first digital computer, now 77 years old, and has been an innovator ever since!

Located on a vibrant Ivy League campus, the Computer & Information Science Department conducts both core CS and interdisciplinary work. We have strong collaborations within Engineering, as well as with Penn's Wharton School of Business, Perelman School of Medicine, Annenberg School of Communication, Carey School of Law, Graduate School of Education, and School of Arts and Sciences.

Faculty:

- 47 tenured and tenure-track
- 10 full-time teaching-track
- 4 research-track

Students:

- 220 PhD
- 1100 on-campus Master's (5 degree programs)
- 2000 online Master's (2 degree programs)
- 1100 undergraduates (5 degree programs)

Exciting Growth and New Initiatives!

Computer science and data science are strategic areas of investment for Penn; we have hired **25 new faculty** in the past 5 years. **Amy Gutmann Hall**, our new home for data science, opens in Fall 2024, adding 115,000 square feet of research and teaching space.

New initiatives are connecting Computer and Information Science to many fields across campus, including medicine, the physical sciences, and engineering. Departmental strengths include programming languages, natural language processing, robotics and vision, databases, networks and distributed systems, machine learning and data science, human-computer interaction, cryptography, and computational social science.

Penn Engineering also launched a new online Master's degree in Data Science, complementing our on-campus program.

New Faculty Members Joining 2023-24



Jérémie Lumbroso, Practice Assistant Professor. *PhD 2012, Sorbonne U.* Computer science education, algorithms.



Ryan Marcus, Assistant Professor. *PhD 2019, Brandeis.* Databases, machine learning systems.



Pratyush Mishra, Assistant Professor. *PhD 2021, UC-Berkeley.* Applied cryptography, privacy, and security.

Faculty Highlights

- **André DeHon** was named a Fellow of the IEEE.
- **Dinesh Jayaraman** received an NSF CAREER Award.
- **Kevin Johnson** was elected President of the American College of Medical Informatics.
- **Insup Lee** was named a Fellow of the AAAS.
- **Insup Lee** received the ACM SIGBED Distinguished Leadership Award.
- **Val Tannen** was elected to Academia Europaea.
- **Rene Vidal** was named a Fellow of the ACM.
- **Duncan Watts** was elected to the National Academy of Sciences.

Student and Alumni Highlights

- Shreya Halvadar, Natalie Maus, and Adam Stein received NSF Graduate Fellowships.
- Nathan White received an NDSEG Fellowship.
- Yiping Ma received a Microsoft Research PhD Fellowship.
- Aaditya Naik received the Google Fellowship in Programming Technology & Software Engineering.

Penn PhD graduates on this year's job market have taken first permanent positions at CMU, Howard University, U Michigan, UMBC, Google, U Virginia, U Toronto, and more.



New Faculty (2023-24)



Aakash Gautam

Assistant Professor

Primary research is at the intersection of human-computer interaction, learning sciences, and community development.



Marina Barsky

*Teaching Assistant Professor
Primary research is in stringology: algorithms on strings and their applications to big data and biological sequence analysis.*



Lorraine (Xiang) Li

Assistant Professor

Primary research is designing probabilistic models and evaluation methods for implicit common sense knowledge in language.



Nadine von Frankenberg

*Teaching Assistant Professor
Primary research is in ubiquitous computing, smart buildings, IEQ, human-in-the-loop control, digital health, and educational research.*



Ryan Shi

Assistant Professor

Primary research is in game theory, online learning, and reinforcement learning on problems motivated by these applications.

26%

increase in MS applications

47%

increase in PhD applications

100%

of PhD students are fully funded for the first five years

New NSF CAREER Award

Assistant Professor Xiaowei Jia received this award for his work on the project titled “Combining Machine Learning and Physics-based Modeling Approaches for Accelerating Scientific Discovery”.



New Programs

BS in Data Science

A collaboration between the Departments of Computer Science; Informatics and Networked Systems; Mathematics; and Statistics)

BS in Physics and Quantum Computing

A collaboration between the Departments of Computer Science; Physics; and Astronomy

Other News

- **Professor Panos Chrysanthis** received the IEEE ICDCS 2023 best demo award for “SenShaMart – A Sensor Sharing Marketplace for IoT”.
- **Professor Alexandros Labrinidis** was recognized as an IEEE Computer Society Distinguished Contributor in the 2022 Class.
- **PhD student Yuya Asano, Professor Diane Litman, Associate Professor Adriana Kovashka, and Associate Professor Erin Walker** received the Best Poster Award at the 24th International Conference on Artificial Intelligence in Education.



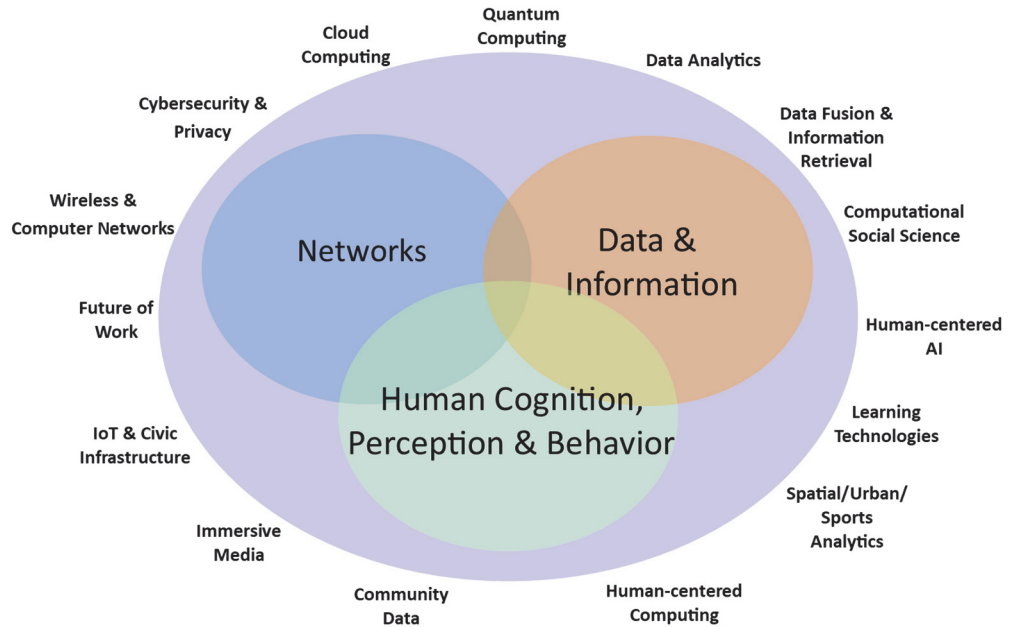
University of Pittsburgh

School of Computing and Information
Department of Informatics and Networked Systems

Department of Informatics and Networked Systems
School of Computing and Information
University of Pittsburgh
135 North Bellefield Avenue, Pittsburgh, PA 15260
412-624-9473 or dins-info@pitt.edu

The Department of Informatics and Networked Systems is home to research and academic programs at the junction of **information**, **networks**, and **human behavior** towards the discovery and modeling of new social and technical phenomena.

We offer degree programs in Information Science, Telecommunications, and Computational Social Science. Our classes and research programs are enhanced by a community of scholars with diverse expertise.



www.dins.pitt.edu

Faculty News:

Prof. James Joshi has been elevated to IEEE Fellow. Dr. Joshi was also honored with the Director’s Award after serving four years as a Program Director of SaTC at NSF.



Prof. Peter Brusilovsky was honored with the 2023 University of Pittsburgh Chancellor’s Distinguished Research Award.



Prof. Lingfei Wu received the prestigious NSF Career Award for his work exploring the distinct roles research teams play in the advance of science and technology.

Prof. Yu-Ru Lin and her team were selected as one of six DOD and University teams to receive funding through the Defense Education and Civilian University Research Partnership. Dr. Lin’s team will investigate “Characterizing and Countering the Normalization of Extremism and Communal Violence in Cyber-Social Space.”



Prof. Morgan Frank’s work on misconceptions and open questions about generative AI and the future of art was published in *Science*.

Prof. Angela Stewart has been awarded a grant from NSF’s Racial Equity in STEM Education program for her work on expanding the range of perspectives and voices that are a part of AI technology.

Prof. Martin Weiss is serving as Director of Research for the next generation wireless program of the Office of the Undersecretary of Defense for Research and Engineering.

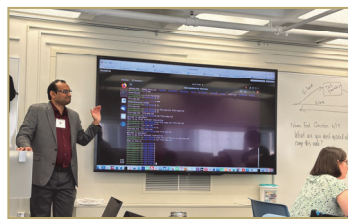
Department News:

The University of Pittsburgh has been redesignated as a National Center of Academic Excellence in Cyber Defense (NCAE-CD). The redesignation reflects the success of the Department in offering rigorous graduate academic programs in Information and Network Security.



The Department is introducing a Minor in Information Science, available to all undergraduate Pitt students. The 15-credit Minor will provide critical knowledge and skills in data, systems, and networks to future professionals in the fields of business, healthcare, finance, education, politics and sales.

The Department hosted GenCyber@Pitt, part of the national GenCyber training program by the National Security Agency and National Science Foundation. This week-long program for teachers, designed by Profs. Ahmed Ibrahim and Balaji Palanisamy, covered concepts, techniques and tools for teaching cybersecurity in high school classrooms.



The Department recently introduced a new undergraduate major in “Computational Social Science,” in partnership with Pitt’s Department of Political Science.

Recent Hires



Jian Kang
Data Mining, Machine Learning, Trustworthy AI, Uncertainty Quantification

PhD, University of Illinois at Urbana-Champaign



Jiaming Liang
Optimization, Sampling, Machine Learning

PhD, Georgia Institute of Technology



Monika Polak
Cryptography, Quantum-Resistant Cryptography, Algebraic Graph Theory, Extremal Graph Theory

PhD, University of Maria Curie-Skłodowska



Yukang Yan
Human-Computer Interaction, Augmented/Virtual Reality, Computational Interaction

PhD, Tsinghua University

Faculty and Staff Highlights

2023

- Jiebo Luo is elected a Fellow of the US National Academy of Inventors (NAI).
- Kaave Hosseini and co-authors receive Best Paper Award at ICALP.
- George Ferguson receives Edward Peck Curtis Award for Excellence in Undergraduate Teaching.
- Sara Klinkbeil receives Edmund A. Hajim Outstanding Staff Award.
- Zhen Bai receives NSF Career Award.
- Department faculty secure over \$5M in new external grants.

2022

- Jiebo Luo is elected a member of Academia Europaea.
- Ehsan Hoque is named a distinguished member of the ACM.
- Jiebo Luo is named the Albert Arendt Hopeman Professor of Engineering.
- Sreepathi Pai receives NSF CAREER award.
- Michael Scott is elected a Fellow of the AAAS.
- Yuhao Zhu and UR alumni Sifan Ye (BS'20) and Ting Wu (MS'20) win the Kostas Pantazos Memorial Award for Outstanding Paper In Visualization and Data Analysis.
- Test of Time Award at HPCA 2022 goes to PhD alumni Greg Semeraro, Grigorios Magkils, and Rajeev Balasubramonian, with advisors David Albonesl, Sandhya Dwarkadas, and Michael Scott.

Undergraduate and Graduate Highlights

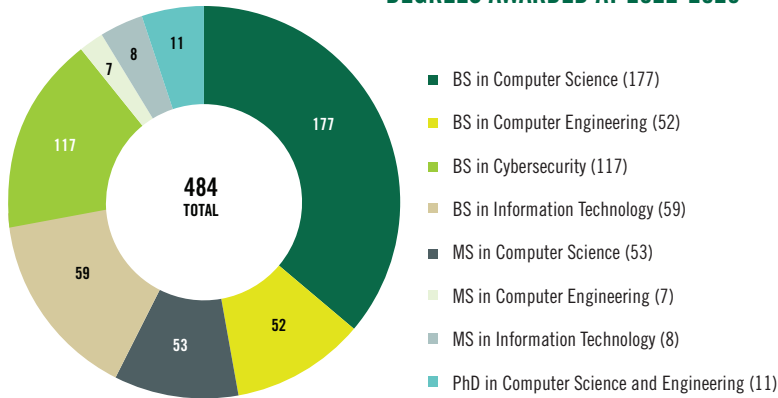
2023

- Jingyuan Chen and his advisor Jiebo Luo receive Best Student Paper award at IEEE ICDH.
- Hana Genana and Quynh Anh Pham receive Susan B. Anthony Legacy Awards.
- Computer Science Undergraduate Council recognized with Award for Excellence in Creative Co-Sponsorship.
- Qingjian Shi '26 wins People's Choice Award in Art of Science Competition.
- Sizhe Li is a finalist in the CRA Outstanding Undergraduate Researcher competition. Adira Blumenthal and Draco Xu receive Honorable Mention.
- Raiyan Baten wins Association for the Advancement of Affective Computing (AAAC) Outstanding PhD Dissertation Award.

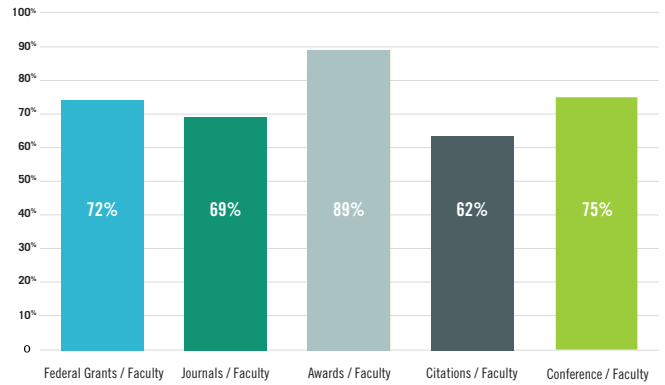
2022

- PhD alumnus Zhengyuan Yang receives the ACM SIGMM Award for Outstanding PhD Thesis.
- Boyang Wang places second in the Student Research Competition at PACT 2022.
- Valerie Battista '23 receives Hajim School Wells Award.
- Vladimir Maksimovski, Thanh Bao, and Loc Bui Dung Le, coached by Daniel Stefankovic, advance to the North American Championship of the International Collegiate Programming Competition.
- Mandar Juvekar receives Honorable Mention in the CRA Outstanding Undergraduate Researcher competition.
- PhD alumnus Maged Michael shares the 2022 Edsger W. Dijkstra Prize in Distributed Computing.
- PhD Alumnus Mohammad Zaki is named an ACM Fellow.

DEGREES AWARDED AY 2022-2023



RESEARCH BENCHMARKS



KEY FACTS AND RANKINGS

- 34 T/TT and 14 instructional faculty members and hiring!
- CSE faculty members lead the USF Institute for Artificial Intelligence (AI+X), the USF Center for Cryptographic Research, and USF Quantum Initiative.
- Faculty members are executing \$18 million in active external research grants from NSF, DoD, NIH, NIST, industry, and state sources. As reported to ASEE, the annual research expenditure for 2021-22 was \$4.5 million.
- Active Computing Partners Program with Amazon Pay, CAE, Johnson & Johnson, JPMorgan Chase, Nielsen, and Raymond James.
- Major initiative to broaden participation in computing through a grant from the NU Center for Inclusive Computing. AY 2022-23 had 28.7% women CS graduates, up from 18% two years ago.
- According to Academic Analytics Scholarly Research Index (using default weights for grants, articles, conferences, awards, and citations) (AAD 2021):
 - » USF CSE is top 15% (rank 40) among 260 Computer Science departments in public and private universities.
 - » USF CSE ranks middle among all CS departments at AAU universities (public and private)
 - » USF CSE is among the top 10 departments at the University of South Florida based on percentile in respective disciplines.

FACULTY RESEARCH AREAS

- **Artificial Intelligence:** Machine learning; Data mining; Robotics; Natural language processing; Computer vision; Reasoning systems; Fairness and explainability; Affective computing
- **Cybersecurity:** Network security; Wireless security; Applied cryptography; Runtime security; Intrusion detection systems; Human aspects of cybersecurity; Differential privacy; Hardware security
- **Computing Hardware and Sensors:** Chip design; AI accelerators; Testing and verification; Bio-implantable devices; Computational imaging; Mobile wireless sensing; Cyber-physical systems
- **Human-Centered Computing:** Smart health systems; Human-computer interaction; Brain-computer interfaces; Human performance; Socio-technical systems; Human-centered authentication; Human-robot interaction; Augmented reality; Social networks
- **Networks and Systems:** Green networks; Wireless networks; Mobile systems and communications; Database systems; Multimedia systems; Distributed systems

USC Viterbi

School of Engineering
Thomas Lord Department
of Computer Science

A New Era, A New Name

Almost 50 years since its founding in 1976, computer science at USC has marked a new era with a new name: the **Thomas Lord Department of Computer Science**.

The naming gift is part of the Frontiers of Computing, the largest and most comprehensive academic initiative in the university's history.

More Than a Building

The department will be housed in a **new centralized hub for computer science at USC**, the Dr. Allen and Charlotte Ginsburg Human-Centered Computation Hall, expected to open in spring 2024.



The gift also supports a new chair, the Donald M. Alstadt Chair of Advanced Computing, awarded to **Gaurav Sukhatme**.



By The Numbers

FACULTY AND RESEARCH

\$34M+

in research expenditures*

\$19M+

in research proposals requested

93

full-time faculty

50

full-time tenure-track faculty

21

new full-time faculty hired since 2022

6

members of the National Academy of Engineering

2

members of the National Academy of Sciences

1

Turing Award Winner

Faculty Research Highlights

Supported by a \$1.9M grant from the National Institutes of Health (NIH), researchers from Kaiser Permanente and **Bistra Dilkina** are using machine learning to better understand the risks of early substance use in youth populations.



A team of researchers led by **Maja Matarić** was awarded a National Science Foundation (NSF) Convergence Accelerator grant to create inclusive coding technology for people with disabilities.



Lars Lindemann and **Souti Chattopadhyay** are building trustworthy AI-based code generation, funded by the USC + Amazon Center for Secure and Trusted Machine Learning.

Jyo Deshmukh received a University Research Program grant from Ford Motors for monitoring learning-enabled components in cyber-physical systems.

ENROLLMENT

1,800

undergraduate students

3,600

master's students

400

doctoral students



40%

of undergraduate students identify as female

TEN NEW TENURE-TRACK FACULTY

Erdem Biyik

Assistant Professor
Robot learning, human-robot interaction, multi-agent systems

Ibrahim Sabek

Assistant Professor
Machine learning for data-intensive systems

Ruishan Liu

Assistant Professor
Machine learning for healthcare and biomedicine

Daniel Seita

Assistant Professor
Robotics, computer vision, machine learning

Evi Micha

Assistant Professor
Algorithmic fairness and computational social choice

Yue Wang

Assistant Professor
Computer vision, computer graphics, robotics

Willie Neiswanger

Assistant Professor
Machine learning, AI for science, optimization

Jieyu Zhao

Assistant Professor
Machine learning, natural language processing

Seo Jin Park

Assistant Professor
Parallel computing

Yue Zhao

Assistant Professor
Machine learning and data mining

Recent Faculty Accolades

Maja Matarić

American Academy of Arts and Sciences

Neenad Medvidović

University of California, Irvine, Information and Computer Sciences Hall of Fame

Xiang Ren

Okawa Foundation Research Grant Award

Vatsal Sharan

NSF CAREER Award, "Computational Foundations of Modern Machine Learning"

Swabha Swayamdipta

Intel Rising Star Award, Allen Institute for AI Young Investigators Award

*Includes expenditures incurred by computer science faculty at the Information Sciences Institute and the Institute for Creative Technologies

USC *Information Sciences Institute*

- An off-campus research institute with more than 400 researchers, staff, and students, part of the top-ranked University of Southern California (USC) Viterbi School of Engineering
- \$75M annual research expenditures, placing USC as third nationally in federal funding in computer and information sciences
- Locations in Los Angeles, Boston, and Washington, with unique facilities for unclassified, open-access, ITAR, and classified research
- Research engineering staff with well-established career advancement paths enable long-lasting operational-grade software systems
- ISI's 50 years of pioneering research are described in the recent documentary: "Cloudwalkers: ISI and the Inventors of the Future"



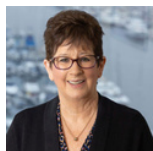
RESEARCH HIGHLIGHTS



CRAIG KNOBLOCK

Keston Executive Director

His team won first place in DARPA's AI for Critical Mineral Assessment Challenge for work on map feature extraction.



TERRY BENZEL

Associate Director, Networking and Cybersecurity division director

She was just elected member of the Board of Governors of the IEEE Computer Society.



STEPHEN CRAGO

Associate Director, Computational Technologies Research division director

PI of a \$26.9M award, one of eight Microelectronics Commons regional innovation hubs with Southern California universities and partners to quickly fabricate devices for academic labs.



ADAM RUSSELL

AI division director

He joined ISI as director of AI in July 2023, the largest group at ISI, after being the inaugural director of ARPA-H and a distinguished career at DARPA and IARPA.



YOLANDA GIL

Director for Major Strategic AI and Data Science Initiatives

She received the Geological Society of America's Outstanding Contributions to Geoinformatics and Data Science award.



MIKE PAZZANI

Principal Scientist

He joined ISI in 2022 and is now the Director of the AI4Health center aimed at discovering new knowledge that will improve health outcomes.



EWA DEELMAN

Research Director, Scientific Computation Technologies

Recognized as ISI Fellow, and PI of a recent \$8M NSF Cyberinfrastructure Center of Excellence for major scientific data facilities.



JELENA MIRKOVIC

Research Team Leader

PI of a \$20M NSF mid-scale Infrastructure award for a security and privacy testbed for reproducible experimentation.



CARL KESSELMAN

Director, Informatics Systems Research Division

Recipient of the 2023 IEEE Internet Award for contributions to global-scale computing platforms.

AI TECH TRANSFER



Machine translation spinoff, sold for \$42.5M



DoD UARC combining cinematic arts with tech innovation for military training, \$30M/yr



Sports analytics spinoff, sold for \$200M

MAJOR FACILITIES



Only public cybersecurity experimentation and education testbed, serves more than 10,000 researchers and 16,000 students



MOSIS Microelectronics Fabrication Service has produced one-off chips for more than 60,000 IC designs



First quantum computer in academia in 2011, upgraded in 2022 with over 5,000 qubits



THE UNIVERSITY OF
**SOUTHERN
MISSISSIPPI**

School of Computing Sciences and Computer Engineering

usm.edu/computing



@usmcsce

School Director

Dr. Sarah B. Lee

sarah.b.lee@usm.edu

118 College Drive #5106
Hattiesburg, MS 39406

Phone: 601.266.4949
Email: computing@usm.edu

EOE/F/M/VETS/DISABILITY

The **School of Computing Sciences and Computer Engineering** at **The University of Southern Mississippi** is a vibrant and growing School comprised of undergraduate programs in **computer science, computer engineering, information technology, and cybersecurity**, and graduate programs in computer science and computational science. We offer undergraduate certificates in cybersecurity, computer networks, and software engineering. Our **Bachelor of Science in applied computer science** and **Bachelor of Applied Science in cybersecurity** are offered **fully online**.

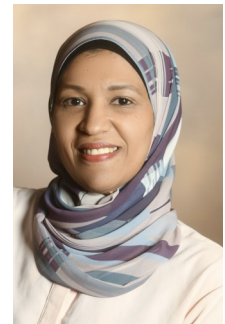


We are committed to providing a student-centered learning environment with a focus on inclusion. Thirty percent of undergraduates identify with a racial minority group historically under-represented in computing.

Our students work with faculty on research in a variety of areas, including machine learning, artificial intelligence, robotics, bioinformatics, cybersecurity, and broadening participation in computing.

New Faculty in Fall 2023

Dr. Rabab Abdelfattah
Assistant Professor in Computer Engineering
PhD
University of South Carolina



Engaging our students outside of the classroom is important!
In addition to research,
students are involved with a variety of student organizations:

Association in Computing Machinery (ACM)

Institute of Electrical and Electronics Engineers (IEEE)

Louis Stokes Mississippi Alliance for Minority Participation

Robotics & Intelligent Machines

Women in Cybersecurity



Fall 2023 Student Enrollment

2,337

B.S.

2,139

M.S.

161

Ph.D.

\$8M+ FY '23 Research Expenditures

FY '23 Research Grants

\$1.5M NSF, Proto-OKN Theme 1: Digging in to Soil Carbon with USDA: A Knowledge Graph Informing Soil Carbon Modeling, Chengkai Li

\$1.2M CPRIT, Developing Knowledge Guided Deep Learning Models to Predict the Binding between T Cell Receptors and Neoantigens for Facilitating TCR-T Therapies, Junzhou Huang

\$600k NSF, CCF Core: Small: User-transparent Data Management for Persistence and Crash-consistency in Non-volatile Memories, Jia Rao, Jiang Song and Hui Liu

\$567k, CAREER: Advancing Adversarial Robustness of Natural Language Generation Systems, Shirin Nilizadeh

\$425k, THECB award, Innovative Solutions to the Texas Nurse Faculty Shortage, Shawn Gieser (Co-PI)

\$300k, NSF, Collaborative Research: DESC: Type I: A User-Interactive Approach to Water Management for Sustainable Data Centers: From Water Efficiency to Self-Sufficiency, Mohammad Islam

\$199k, NSF, RAPID: SaTC: CORE: Monitoring Social Media for Devising Improved Safeguards Online, Shirin Nilizadeh

\$100k, CAHSI-Google Institutional Research Program, Bill Beksi

Student/Faculty Awards

Best Paper Award at ACM SIGBio '23
Md Jillur Rahman Saurav (Ph.D. student, advisor: Dr. Jacob Lubner)

Best Paper Award at the ACM Creative & Cognition Conference '23, (REU Bijisa Pyakurel, Advisor: Dr. Cesar Torres)

ML Commons Rising Stars, Md Rajib Hossen (Ph.D. student, advisor: Dr. Mohammad Islam)

Science, Mathematics, and Research for Transformation (SMART) award from DOD, Minh Tram (Ph.D. student, advisor: Dr. Bill Beksi)

ICST Most Influential Paper Award, Linbin Yu and Dr. Jeff Lei

ICDCS 2023 Best Paper Award, Dr. Zhijun Wang, Dr. Hao Che and Dr. Hong Jiang

AIMBE fellow, Dr. Junzhou Huang

AAIA Fellow, Dr. Gautam Das

UTA Stats

#1 IN TEXAS FOR SERVING FIRST-GENERATION, LOW-INCOME STUDENTS

#4 FOR VETS AND THEIR FAMILIES

R-1 DOCTORAL UNIVERSITY

HISPANIC SERVING INSTITUTION

TEXAS TIER ONE UNIVERSITY

#5 FOR TRANSFERS

New Faculty



ASHRAF ABOULNAGA
Professor



MARIKA APOSTOLOVA
Assistant Professor of Instruction



ENGIN ARSLAN
Assistant Professor



REMI CHOU
Assistant Professor



FARNAZ FARAHANIPAD
Lecturer



HUI LU
Assistant Professor



JIAYI MENG
Assistant Professor



DEBASHRI ROY
Assistant Professor



XIAOJUN SHANG
Assistant Professor



FAYSAL HOSSAIN SHEZAN
Assistant Professor



MIAO YIN
Assistant Professor



KENNY ZHU
Professor

Faculty Numbers

44
Tenure Track Faculty

27
Full-Time Teaching Faculty

10
NSF CAREER Award Winners

4
IEEE Fellows

2
AIMBE Fellows

1
ACM Fellow

CS Rankings (2018-2023)

High-performance computing: 14
Operating systems: 21
Databases: 28
Computer architecture: 46
Embedded & real-time systems: 51

AI: 54
Software engineering: 54
NLP: 56
Mobile computing: 59
CV: 65
Computer security: 79

CS Rankings Papers (10/2022-9/2023)

ACL: 1 | NDSS: 3 | SOSP: 1 | USENIX ATC: 2 | MobiCom: 1
HPCA: 1 | ICML: 1 | AAAI: 5 | ICCV: 1 | ASPLOS: 1
ISCA: 1 | ICS: 1 | FSE: 1 | ICDE: 1 | Infocom: 3 | ECCV: 1
ICRA: 1 | IROS: 1 | SenSys: 1

The Computer Science Department at UT Dallas is among the largest in the US, with almost 100 outstanding faculty, while UT Dallas ranked 115 nationally and the 3rd best public University in Texas in the USNWR 2024 ranking of national Universities

Research Highlights

- Broad areas of research: AI, ML, Data Science, Software Engineering, Cyber Security, Networks, Systems, Theory.
- Over \$45 Million total external funding over the last 5 years.
- Faculty includes 18 NSF CAREER Award Winners, the most recent in 2023.
- CS Faculty direct 4 research institutes, 9 research centers, and one education/outreach center.
- CS Department ranks consistently high in various CS subfields in CSrankings.org.
- Prof. Murat Kantarcioglu and Latifur Khan named IEEE Fellows.
- Dr. Xiaohu Guo and his students and collaborators Awarded the ACM SIGGRAPH 2023 Technical Papers Best Paper Award.
- CS Department faculty received multiple best paper awards at a few reputable conferences.
- UT Dallas is a funding site of the new USDOT national cybersecurity center, tasked to help protect connected vehicles, drones, and more.
- Prof. Bhavani Thuraisingham Honored with the 2023 Taylor L. Booth Education Award for "Outstanding Leadership in Cyber Security Education and Data Science Education, as well as Mentorship of Members of Systemically Marginalized Groups."
- The Center for Applied AI and Machine Learning (CAIML) is highly sought after by the industry partners.
- UT Dallas CS Researchers Apply the Power of AI To Forecast Energy Supply, Demand.

Student Numbers/Growth/Education Highlights

- Approximately 5,700 students (4,600 Undergraduates, 900 Master's Students, 160 PhDs).
- Awarded approximately 950 Bachelor, 665 Master, and 15 PhD degrees in 2022-2023.
- Nearly 100 teams completed industry-sponsored senior-design, capstone projects.
- Platinum sponsor of Grace Hopper Conference; sent 50 Students to GHC 2023.
- More than a dozen CS student organizations under the umbrella of the student chapter of the ACM.
- Student groups include: Women Who Compute, AI Society, VR Society, Cyber Security Group.
- Center for CS Outreach runs one of the largest university-based K-12 outreach program.
- NSA Center of Excellence in Cyber Security Education, Research and Cyber Operations.
- BS in Data Science offered jointly with the School of Natural Sciences and Mathematics.
- Ranked #4 nationally for the total number of students, #11 for the number of female students.
- Ranked #11 nationally for the no. of Hispanic students, #14 for African American students.
- 2022 U.S. News & World Report Best Colleges rankings place UT Dallas CS at No. 71 and Software Engineering at No. 16.
- UT Dallas CS Programming Team qualified to compete in the international collegiate programming contest world finals in Egypt, the 3rd time since 2020 it qualifies to ICPC world finals.

Organizational News

- Multiple new positions to be filled in Computational Biology, Quantum Computing, Computational Neuroscience, Robotics, Computer Vision, Cyber Security, Artificial Intelligence, Machine Learning, and Human Computing Interaction (HCI).
- Center for Research in Machine Learning recently founded by Drs. Gogate, Ruozzi, and Natarajan.
- Center for Applied Artificial Intelligence and Machine learning, directed by Dr. Doug DeGroot and Dr. Gopal Gupta, attracted multi-millions in industry funding.

Department Head



Dr. Ovidiu Daescu
PhD: University of Notre Dame, 2000

New Faculty



Dr. Bingzhe Li
Assistant Professor
Computer architecture, and low-cost computing architecture
PhD University of Minnesota



Dr. Yi Ding
Assistant Professor
cyber-physical systems, and spatial-temporal data mining
PhD University of Minnesota



Dr. Daniel Gibney
Assistant Professor
Computational Biology, multi-genomic indexing
PhD Georgia Institute of Technology






Dr. Rawan Alghofaili
Assistant Professor
creating context-aware adaptive interactions for AR/VR via computational interaction design
PhD George Mason University



Dr. Xinda Wang
Assistant Professor
software and systems security
PhD George Mason University

Since its establishment in 1872, The University of Toledo has been dedicated to improving human lives. Our graduates conduct cutting-edge research, perform on stage, heal patients, teach in classrooms and make an impact in their communities. We offer 300+ undergraduate and graduate degree programs across the arts, business, education, engineering, law, medicine, natural sciences, nursing and pharmacy. Our EECS department is strongly committed to excellence in education and research. We strive to educate our students to excel in engineering and computational thinking through entrepreneurial-minded learning. Our integrated co-op program provides every undergraduate student an opportunity to gain work experience and practice problem-solving skills. Our undergraduate and graduate (M.S., PhD) students in Computer Science, Computer Science and Engineering, and Electrical Engineering benefit from exposure to ideas, knowledge, and state-of-the-art facilities while working under the guidance of faculty performing cutting-edge research.

Three Computer Science and Engineering faculty members recently joined the EECS Department.

 <p>Dr. Liang Cheng Professor and Department Chair Joined Fall 2021</p> <p>His expertise areas include intelligent infrastructure, IoT, and CPHS (Cyber-Physical-Human Systems), and ad hoc networks.</p>	 <p>Dr. Kishwar Ahmed Assistant Professor Joined Fall 2022</p> <p>His research focuses on efficient and sustainable operation of large complex systems, e.g. high-performance computing (HPC) systems.</p>	 <p>Dr. Samia Tasnim Assistant Professor Joined Fall 2022</p> <p>Her research interests include Internet of Things (IoT), security, data mining, and mobile computing.</p>
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Three recent PhD graduates have started their academic careers at US universities.

<p>Dr. Musbah Abdulgader graduated in 2019 with a PhD in Engineering with a concentration in Software and Intelligent Systems. He is an Assistant Professor in the Department of Computer Science at Norfolk State University.</p>	<p>Dr. Ali Al Bataineh graduated in 2021 with a PhD in Engineering with a concentration in Machine Learning and Artificial Intelligence. He is an Assistant Professor of Electrical and Computer Engineering and Director of Artificial Intelligence Center, Norwich University.</p>	<p>Dr. Mohammad Siddiqui graduated in 2019 with a PhD in Engineering. He is an Assistant Professor of Computer Science at West Texas A&M University. His research includes Human-Computer Interaction, Computer Vision, Deep Learning, and Augmented Reality.</p>
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Selected recent grants in computing research and education

- Dr. Kishwar Ahmed, Principal Investigator, CRII: CNS: Auction Mechanism Design for Energy-Efficient High Performance Computing, supported by the National Science Foundation, 2022-2024
- Dr. Liang Cheng, Co-Principal Investigator, Integrated LIBS-RAMAN-AI System for Real-Time, In-Situ Chemical Analysis of MSW, supported by the U.S. Department of Energy via Lehigh University, 2021-2024.
- Dr. Liang Cheng, Principal Investigator, CPS: Breakthrough: Analysis, Identification and Mitigation of Delay Performance Bottlenecks of Network Infrastructure in Cyber-Physical Systems, supported by National Science Foundation, 2021-2023.
- Dr. Ahmad Javaid, Principal Investigator, SaTC: EDU: Collaborative: INteractive VISualization and PracTice basEd Cybersecurity Curriculum and Training (InviteCyber) Framework for Developing Next-gen Cyber-Aware Workforce, supported by the National Science Foundation, 2019-2024.
- Dr. Ahmad Javaid, Principal Investigator, Cybersecurity Modules Aligned with Undergraduate Computer Science and Engineering Curricula supported by the National Science Foundation, 2020-2024.
- Dr. Mohammad Niamat, Assured Digital Microelectronics Education and Training Ecosystem (ADMETE), supported by the US Air Force, 2020-2023.

Other highlights

- Dr. Gursel Serpen will serve at the National Science Foundation as a Program Director.
- Dr. Devinder Kaur and Dr. Samia Tasnim presented at the Ohio Celebration of Women in Computing 2023.
- The EECS Department has about 700 students on 2 campuses with ACM, ACM-W, and IEEE student chapters.

DEPARTMENT HIGHLIGHTS

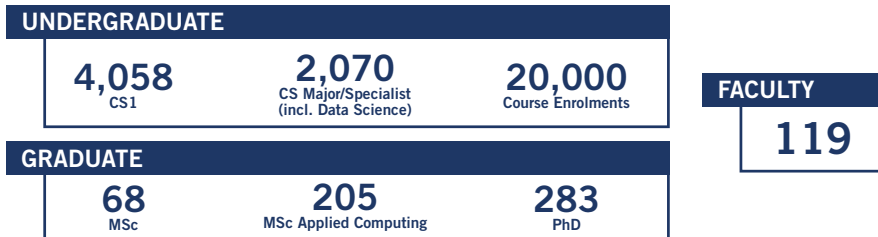
U of T's Acceleration Consortium led by Professor **Alán Aspuru-Guzik** received a CA\$200-million grant from the Canadian government to support its 'self-driving labs' research. The federal funding will support the consortium's work that combines AI, robotics and advanced computing to discover new materials and molecules in a fraction of the usual time and cost.

Time's inaugural 'TIME100 AI' list of the most influential people in artificial intelligence recognized deep learning pioneer **Geoffrey Hinton** and autonomous driving expert **Raquel Urtasun** (CEO and founder, Waabi), as well as alumni **Aidan Gomez** (CEO and co-founder, Cohere) and **Ilya Sutskever** (co-founder and chief scientist, OpenAI).

Bloomberg showcased Toronto as a burgeoning AI startup hub, citing ongoing efforts from Department of Computer Science faculty and alumni to build up capacity, cultivate local talent and operate their startups in the city.

University Professor Emeritus **Geoffrey Hinton** has spoken widely in the media about the potential dangers posed by artificial intelligence. His leading voice on the topic contributed to ongoing, widespread conversations about rapid advancements in AI and the need to consider the risks as the technology evolves.

BY THE NUMBERS



FACULTY AWARDS & HONOURS

- Professor **Sheila McIlraith** — Influential Paper Award, ICAPS (June 2022)
- University Professor Emeritus **Geoffrey Hinton** — Test of Time Award, NeurIPS (November 2022)
- Professor **David Fleet** — Outstanding Paper Award, NeurIPS (November 2022)
- Associate Professor **Sushant Sachdeva** and Assistant Professor **Jimmy Ba** — Sloan Research Fellowships (February 2023)
- University Professor Emeritus **Geoffrey Hinton** — International Member, U.S. National Academy of Sciences (May 2023)
- Professor **Richard Zemel** — Lifetime Achievement Award, Canadian Artificial Intelligence Association (May 2023)
- Assistant Professor **Fanny Chevalier** — Knight, Order of Academic Palms, French Republic (May 2023)
- Associate Professor **Alec Jacobson** — Outstanding Early Career Computer Science Research Award, CS-Can/Info-Can (May 2023)
- Assistant Professor **Joseph Jay Williams** — Grand Prize, XPRIZE Digital Learning Challenge (May 2023)
- Professor **Marsha Chechik** — Scientific Achievement Award, International System Safety Society (August 2023)

NEW FACULTY



AVIAD LEVIS
Assistant Professor
PhD: Technion
Visual Computing



KULDEEP MEEL
Associate Professor
PhD: Rice University
Formal Methods & AI



COLIN RAFFEL
Associate Professor
PhD: Columbia University
Machine Learning



AKSHAYARAM SRINIVASAN
Assistant Professor
PhD: UC Berkeley
Cryptography



ROEI TELL
Assistant Professor
PhD: Weizmann Institute of Science
Theory



FACULTY OF INFORMATION

DEGREES OFFERED

Degrees Offered:

- Bachelor of Information
- Master of Information
- Master of Museum Studies
- Combined Degree Programs
- PhD in Information
- Diploma of Advanced Study in Information Studies

AREAS OF FACULTY RESEARCH COMPUTING

Research Clusters in computing:

- Artificial Intelligence
- Critical Theory & Social Critique
- Cultural Memory & Heritage
- Galleries, Libraries, Archives & Museums
- Data & Society
- Design Studies
- Health Informatics
- Human-Computer Interaction
- Labour & Technology
- Software & Systems
- Technology, Sustainability & Social Justice
- Global, Transnational & Comparative Studies
- Youth & Digital Technology

RESEARCH HIGHLIGHTS

Articles

- Petterson, A., Cheng, K., and **Chandra, P.** (2023). [Playing with Power Tools: Design Toolkits and the Framing of Equity.](#)
- Petterson, A., Thuppilikkat, A. A., Gupta, P., Klassen S., Jack, M.C., Liu, J., and **Chandra, P.** (2023). [Supporting Social Movements Through HCI and Design.](#)
- Gupta, P., Petterson, A., Motla, D., and **Chandra, P.** (2022). [Ladange, Adange, Jeetange: The Farmers' Movement and Its Virtual Spaces.](#)
- Fagerholm, F., De los Ríos, A., Cárdenas Castro, C., Gil, J., Chatzigeorgiou, A., Ampatzoglou, A., and **Becker, C.** (2023). [It's About Time: How to Study Intertemporal Choice in Systems Design.](#)
- McCord, C., and **Becker, C.** (2023). [Beyond Transactional Democracy: A Study of Civic Tech in Canada.](#)
- Bhardwaj, E., Qiao, H., and **Becker, C.** (2023, June 14). [Pathways to Urban Sustainability: Design Perspectives on a Data Curation and Visualization Platform.](#)
- Bremer, C., Gujral, H., Lin, M., Hinkers, L., **Becker, C.**, and Coroamă, V. C. (2023). [How Viable are Energy Savings in Smart Homes? A Call to Embrace Rebound Effects in Sustainable HCI.](#)
- McConvey, K., **Guha, S.**, and **Kuzminykh, A** (2023). [A Human-Centered Review of Algorithms in Decision-Making in Higher Education.](#)

Books

- **Becker, C.** [INSOLVENT. How to Reorient Computing for Just Sustainability.](#) (MIT Press, 2023).
- **Alexander, R.** [Telling Stories with Data. With Applications in R.](#) (Chapman and Hall/CRC, 2023).

Platforms & Prototypes

- Platform released by **Becker, C.** [Toronto Curbcut](#) – a platform for exploring urban sustainability across spatial and temporal scale.
- **Pandeliev, V., Lyons, K.**, and faculty at Ontario Tech and York Universities completed a prototype of a slide deck-building browser game that could be used to teach data literacy concepts using an accessible, multi-lingual interface.

CONTACT US

140 St. George Street, Toronto, Ontario, Canada M5S 3G6
[Map / Directions](#) | inquire.ischool@utoronto.ca

Scientific Computing and Imaging Institute

The Scientific Computing and Imaging (SCI) Institute uses translational research and innovation in computing to transform disciplines in ways that benefit the University of Utah and society at large. Our mission is to bring together the world's best researchers in simulation, imaging, visualization, and advanced scientific and data computing to collaborate with investigators across a broad range of domains to address and solve scientifically and societally important problems. Our interdisciplinary and multidisciplinary research groups drive the development and distribution of advanced software tools with broad and transformative impact.

2000-2023

1,900 Research Grants

3,500+ Publications

400+ Graduated PhDs

45 Best Paper Awards

2 Technical Oscars



SCI Institute Faculty



Manish Parashar

- Computational and Data-Enabled Science and Engineering
- Parallel & Distributed Computing
- Extreme-scale Computing and Data Management
- Autonomic Computing



Rob MacLeod

- Cardiac Electrophysiology
- Uncertainty Quantification
- Software for Image-based Modeling, Simulation, and Visualization



Chris Johnson

- Scientific Visualization
- Scientific Computing
- Image Analysis
- Scientific Software Environments



Charles Hansen

- Large-scale Scientific Visualization
- Parallel Computer Graphics Algorithms and Interactive Techniques



Martin Berzins

- Extreme-Scale Scalability of Computational Frameworks
- Extreme-scale Parallel Solutions
- Adaptive Computational Algorithms in Scientific Computing



Mike Kirby

- Scientific and Data Computing
- Scientific Machine Learning
- Scientific Visualization
- Computational Science & Engineering



Sarang Joshi

- Image Understanding
- Computer Vision
- Shape Analysis



Valerio Pascucci

- Big Data Management and Analytics
- Scientific Visualization
- Discrete Topology
- Computer Graphics
- Computational Geometry



Tolga Tasdizen

- Image Analysis and Computer Vision
- Semi-supervised Learning
- Deep Learning Techniques
- Neural Circuit Reconstruction



Jeffrey Weiss

- Experimental and Computational Biomechanics
- Orthopaedics and Cardiovascular Mechanics
- Mechanics of Angiogenesis
- Image-based Analysis of Soft Tissue Mechanics



Ross Whitaker

- Image Processing
- Computer Vision
- Pattern Recognition
- Medical Imaging/analysis
- Computer Graphics and Visualization



Orly Alter

- Computational Oncology
- Computational Medicine
- Bioinformatics



Alexander Lex

- Data Visualization
- Visualization in Biology
- Human Computer Interaction



Akil Narayan

- Approximation Theory and Methods
- Sparse and Regularized Representations
- Mathematical Shape Analysis
- High-order Numerical Methods
- Data Assimilation



Bei Wang

- Scientific Visualization
- Information Visualization
- Computational Topology
- Computational Geometry
- Machine Learning
- Data Mining



Tamara Bidone

- Computational Models and Simulations of Biological Systems
- Multi-scale Models in Biomechanics and Mechanobiology
- Multi-Physics Models of Cancer Cells



Bao Wang

- Data Science
- Deep Learning
- Stochastic Optimization
- Large-scale Scientific Computing



Kata Isaacs

- Scientific Visualization
- Data Visualization
- High Performance Computing



Shireen Elhajian

- Medical Image Analysis
- Machine Learning and Deep Learning
- Shape Modeling and Analysis
- Image Processing
- Computer Vision



Paul Rosen

- Data Visualization
- Human Computer Interaction
- Topological Data Analysis
- Computational Geometry



Amir Arzani

- Scientific Machine Learning
- Computational Fluid Dynamics
- Computational Structural Mechanics
- Cardiovascular Biomechanics

DISCOVERY AND INNOVATION

Driven by Great People

NEW TENURE-TRACK FACULTY 2023-2024

Nando Fioretto | ASSISTANT PROFESSOR

Ph.D., University of Udine and New Mexico State University

Deep learning, optimization, responsible AI, differential privacy, algorithmic fairness

Hyojoon Kim | ASSISTANT PROFESSOR

Ph.D., Georgia Institute of Technology

Computer networks, network measurement, network security, programmable networks

Yen-Ling Kuo | ANITA JONES FACULTY FELLOW AND

ASSISTANT PROFESSOR, COMPUTER SCIENCE

Ph.D., Massachusetts Institute of Technology

Robot learning, human-AI/robot interaction, artificial intelligence

Wei-Kai Lin | ASSISTANT PROFESSOR

Ph.D., Cornell University

Cryptography, algorithms, theoretical computer science

Chang Lou | ASSISTANT PROFESSOR

Ph.D., Johns Hopkins University

Distributed systems, operating systems, cloud computing, software reliability

*Yu Meng | ASSISTANT PROFESSOR

Ph.D., University of Illinois Urbana-Champaign

Machine learning, natural language processing, data mining

*Kun Qian | ASSISTANT PROFESSOR

Ph.D., Tsinghua University

Internet of Things, integrated sensing and communication, mobile computing

Chen-Yu Wei | ASSISTANT PROFESSOR

Ph.D., University of Southern California

Interactive decision-making, reinforcement learning

*Starting January 2024

NEW TEACHING FACULTY 2023-2024

Arohi Khargonkar | LECTURER

M. Tech. Manipal Institute of Technology

Computer science education, bioinformatics, biomedical engineering

Derrick Stone | SENIOR LECTURER

M.S. in MIT University of Virginia

Computer science education

2023 ACCOLADES

Yue Cheng won the *IEEE Computer Society Technical Community on High Performance Computing Early Career Researchers Award* for Excellence in High Performance Computing and a *Meta Research Award* for AI Systems Hardware/Software Co-design.

Sandhya Dwarkadas, computer science chair, was *elected to the board of directors of the Computing Research Association*. Dwarkadas also won the *IEEE Technical Committee on Computer Architecture's 2022 Test of Time Award*.

Sebastian Elbaum was named a *fellow of the Association for Computing Machinery*.

Jundong Li received the *Early Career Research Award* at the 2023 Pacific-Asia Conference on Knowledge Discovery and Data Mining.

Felix Xiaozhu Lin won the *best paper award at the Seventh ACM/IEEE Symposium on Edge Computing*.

Briana Morrison was *highlighted in "People of ACM"* by the Association for Computing Machinery for her contributions to computer science education.

Recent Ph.D. graduate **David Shriver** won the *2023 SIGSOFT Outstanding Doctoral Dissertation Award* from ACM's Special Interest Group on Software Engineering.

John A. "Jack" Stankovic, BP America Professor Emeritus, has been *elected as a member of the Virginia Academy of Science, Engineering and Medicine*.

Ashish Venkat received the *National Science Foundation CAREER Award*.

Miaomiao Zhang received a *Trailblazer R21 Award* from the National Institute of Biomedical Imaging and Bioengineering and the *NSF CAREER Award*.

2007 Ph.D. alumnus **Gang Zhou** was elevated to *IEEE fellow*.

Research Strengths

CYBER-PHYSICAL SYSTEMS

HUMAN-COMPUTER INTERACTION

THEORY

COMPUTER SCIENCE EDUCATION

CYBERSECURITY

SOFTWARE ENGINEERING

ARTIFICIAL INTELLIGENCE

COMPUTER SYSTEMS

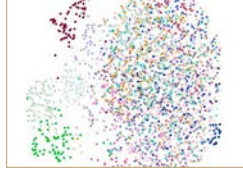
Innovating to address societal challenges



HAILEY
Advancing human-AI collaboration to support mental health



Origami microfliers
Enabling battery-free agricultural and environmental monitoring



ContrastiveVI
Gaining new insights into disease from single-cell datasets using deep learning



Community Networks
Bringing internet connectivity to underserved local communities

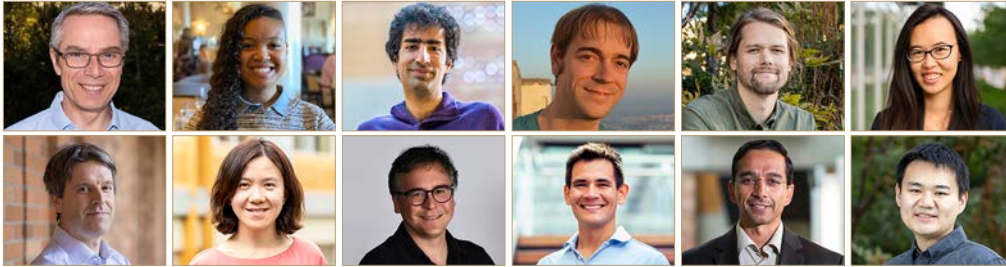


Glucoscreen
Expanding screening of at-risk patients for prediabetes using smartphones



UnlockedMaps
Providing real-time accessibility information for urban rail transit

Recognizing faculty excellence



IJCAI John McCarthy Award
Dieter Fox / Robotics

Sloan Research Fellowship
Leilani Battle / Data visualization

FoCM Stephen Smale Prize
Shayan Oveis Gharan / Theory

ACM SIGACT + EATCS Gödel Prize
Thomas Rothvoss / Theory

NSF CAREER Awards
Jeff Nivala / Molecular programming
Amy Zhang / Human-computer interaction

Rozenberg Tulip Award
Georg Seelig / Synthetic biology

Science News 10 Scientists to Watch
Rachel Lin / Cryptography

ACM Fellow
Luis Ceze / Computer architecture

IEEE Fellows
Tadayoshi Kohno / Security and privacy
Rajesh Rao / Computational neuroscience

Intel Rising Star Award
Simon Du / Machine learning

A stroke of 'genius'



Yejin Choi / MacArthur Fellow

Yejin Choi, a professor in the Allen School's Natural Language Processing Group and Senior Research Manager at the Allen Institute for Artificial Intelligence (AI2), earned a **MacArthur Foundation "genius grant"** to advance her work on commonsense AI. She was also named a **Fellow of the Association for Computational Linguistics** and earned a spot on **TIME magazine's AI100 list**. **Watch her TED talk online.**

Celebrating future leaders



2023 Ph.D. graduates to faculty positions

Justin Chan (Mobile systems) / CMU

Saadia Gabriel (NLP) / UCLA

Ari Holtzman (NLP) / Univ. of Chicago

Eunice Jun (Data science) / UCLA

Jungo Kasai (NLP) / TTIC

Nathan Klein (Theory) / Boston Univ.

Ben Lee (Machine learning) / UW iSchool

Kuikui Liu (Theory) / MIT

Leah Perlmutter (CS Education) / Grinnell

Lianhui Qin (NLP) / UCSD

Yisu Remy Wang (Databases) / UCLA

Victor Zhong (NLP) / Univ. of Waterloo

Welcoming new faculty



Nathan Brunelle / Teaching

Miya Natsuhara / Teaching

Chinmay Nirkhe / Quantum

Ben Shapiro / CS education

Nirvan Tiyagi / Cryptography

Matthew Wang / Teaching

Stephanie Wang / Systems



ACCOLADES

Professor **Chirag Shah** was named a Distinguished Member of the Association for Computing Machinery, the world's largest and most prestigious association of computing professionals. Distinguished Members are those who have achieved significant accomplishments or have made a significant impact on the computing field.

Women in AI Ethics named Assistant Professor **Aylin Caliskan** among its 100 Brilliant Women in AI Ethics for 2023. The list recognizes rising stars and pioneers in the field.

Dean Emeritus **Harry Bruce** was named a Distinguished Member of the Association for Information Science and Technology. The distinction recognizes those who have demonstrated excellence in the information science field through sustained educational pursuits and a track record of service.

Ph.D. candidate and 2023 graduate **Prerna Juneja**, advised by Assistant Professor Tanu Mitra, was the recipient of this year's Graduate School Medal for her research on misinformation. The medal is awarded to just one student each year.



The UW recognized nine iSchool students in the 2023 **Husky 100**, awarded to students who demonstrate leadership and commitment. They include (top row) Shreya Balaji, Roland Conley, Sabrina Lin; (middle row) Jax Morgan, Tina Nguyen, Saurabh Patil; (bottom row) Kenny Pham, Roshni Srikanth and Gulsima Young.

NEWS & IMPACT

Approximately 700 Washington high school students, teachers, librarians and other educators participated in **MisinfoDay 2023** programs across three events at the University of Washington and Washington State University. Presented through a statewide partnership between the iSchool's Center for an Informed Public and WSU's Edward R. Murrow College of Communication, the events promoted strategies for combating misinformation.

Associate Professor **Alexis Hiniker's** research was used to inform the Federal Trade Commission's report on dark patterns. The report showed a rise in tactics such as disguised ads, difficult-to-cancel subscriptions, buried terms, and tricks to obtain data.



Alexis Hiniker

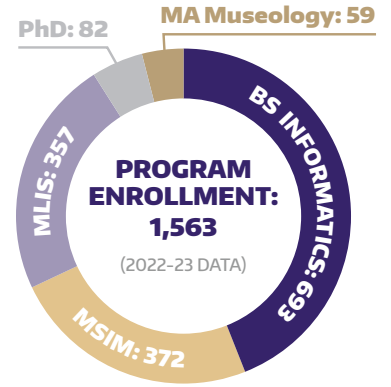
Assistant Teaching Professor **Heather Whiteman** was elected to serve as the international lead and convener for an International Organization for Standardization project focused on the value and importance of privacy in Human Resource Management data policies, processes and practices.



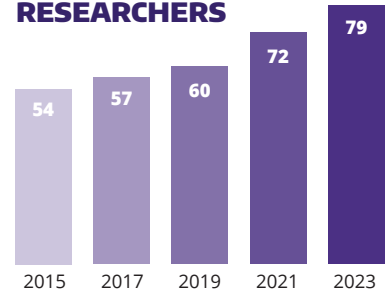
Heather Whiteman

Doctoral student **Hyeyoung Ryu** and Professor **Wanda Pratt** won the Samantha Adams Best Paper award for their paper published in *JAMIA, the Journal of the American Medical Informatics Association*. "Microaggression clues from social media: revealing and counteracting the suppression of women's health care," exposes how social media reveals and reinforces the suppression of health care for unmarried Korean women.

BY THE NUMBERS



FACULTY & RESEARCHERS



LEADING-EDGE RESEARCH

\$8,650,847

in research funding for fiscal 2022-23.

DIVERSITY IN TECH

70%

of domestic students in the iSchool's Master of Science in Information Management (MSIM) program are Black, Indigenous, people of color. Meanwhile, 52% of students across the MSIM program are women.

51%

of undergraduate Informatics students are women, helping to close the gender gap in STEM fields.

David R. Cheriton School of Computer Science



The University of Waterloo's David R. Cheriton School of Computer Science is the largest academic concentration of computer science researchers in Canada. We have more than 100 faculty members, 60 administrative, instructional and technical staff, 4,000 undergraduate students and 475 graduate students.

Our CS research areas

- Algorithms and complexity
- Artificial intelligence and machine learning
- Bioinformatics
- Computer algebra and symbolic computation
- Computer graphics
- Cryptography, security, and privacy
- Data systems
- Formal methods
- Health informatics
- Human-computer interaction
- Programming languages
- Quantum computing
- Scientific computation
- Software engineering
- Systems and networking
- Theoretical neuroscience

Our new faculty members



Sepehr Assadi
Algorithmic graph theory, communication complexity, online algorithms, algorithmic game theory



Sihang Liu
Computer architecture, programming and system support for new and emerging architectures



Yang Lu
ML and statistical methods for genomics and proteomics data analysis



Sujaya Maiyya
Distributed data management, fault tolerance, data privacy and security



Pengyu Nie
ML and NLP for software engineering, software testing and formal verification



Shlomi Steinberg
Computer graphics, rendering and light transport, ray and wave optics



Hong Zhang
Large-scale data analytics, distributed ML training and serving systems, application and network scheduling, data centre networking, serverless computing and cloud computing

Our highlights

Cheriton School of Computer Science, top-ranked CS program in Canada for third year in a row

Maclean's 2023 University Rankings

Cheriton School of Computer Science, 22nd CS program internationally

2022 Quacquarelli Symonds World University Subject Rankings

Robin Cohen

Lifetime Achievement Award in Computer Science, CS-Can | Info-Can

Jimmy Lin

ACM Fellow

Wenhu Chen, Xi He, Gautam Kamath

Canada CIFAR AI Chairs

Sepehr Assadi

Sloan Research Fellowship

Distinguished Professor Emeritus Don Cowan

J.W. Graham Medal in Innovation and Computing

Charles Clarke, Jimmy Lin

Induction into ACM SIGIR Academy

Jo Atlee, ECE colleague Krzysztof Czarnecki, former students

10-year most influential paper award, VaMoS 2023

Daniel Berry, Sri Fatimah Tjong

Most influential paper award, REFSQ 2023

Jeremy Chen, Yuqing Huang, Mushi Wang,

Semih Salihoglu, Kenneth Salem

Best Experiment, Analysis and Benchmark Paper Award, VLDB 2022 • 2022 ACM SIGMOD Research Highlight Award

Ende Jin, Yizhou Zhang, Harvard colleague

Nada Amin

Distinguished paper award, PLDI 2023

Stacey Watson, Rochester Institute of Technology colleagues

Best paper award, MobileHCI 2022

Ryusuke Sugimoto, Christopher Batty,

Toshiya Hachisuka

Best paper award, SCA 2022

Niki Hasrati, Shai Ben-David

Best paper award, ALT 2023

Nikhita Joshi, Antony Albert Raj Irudayaraj,

Jeremy Hartmann, Daniel Vogel

Best paper award, SUI 2022

Muhammad Sulaiman, Mahdieh Ahmadi,

Mohammad A. Salahuddin, Raouf Boutaba,

Rogers colleague Aladdin Saleh

Best paper award, NOMS 2023

Lindsey Tulloch, Ian Goldberg

Best student paper award, PETS 2023

Ramazan Rakhmatullin, Andrew Qi Tang,

Kevin Wan

First place, 2023 International Collegiate

Programming Contest North America

Championship





UNIVERSITY of
WEST FLORIDA

Department of Computer Science



DEGREE PROGRAMS OFFERED

Undergraduate Programs

- BS in Computer Science (ABET accredited)
- BS in Software Design and Development
- Interdisciplinary BS

Graduate Programs

- MS in Computer Science

Certificate Programs

- Database Systems



Cyber Camp



ICPC Southeast USA Regional Contest



Cyber Competition

MAKING A DIFFERENCE IN THE WORLD OF COMPUTING.

SELECTED FACULTY GRANTS

- **Anthony Pinto:** NSA GenCyber (\$200,000 total over 3 years)
- **Anthony Pinto:** NSA CAE Regional Hub and Consortium (\$290,000)
- **Ashok Srinivasan:** A data analytics framework for the application of pedestrian dynamics to public health (NIH/NLM, \$394,525)
- **Ashok Srinivasan:** Collaborative: RAPID: Leveraging New Data Sources to Analyze the Risk of COVID-19 in Crowded Locations (NSF, \$200,000)
- **Ashok Srinivasan:** Cyberinfrastructure for Pedestrian Dynamics-Based Analysis of Infection Propagation Through Air Travel (NSF, \$600,000)
- **Sikha Bagui:** Center for Inclusive Computing (\$60,000)
- **Sikha Bagui, Brian Eddy:** Computer Science For All (NSF, \$300,000)
- **Sikha Bagui:** Robust Automated Risk Detection and Mitigation System for Network Intrusion Detection Systems (NSA: \$489,482)
- **Tirthankar Ghosh:** Building a Sustainable Pathway for Future Cybersecurity Workforce Through Industry Collaboration, Apprenticeships, and Articulation (Cyber Florida/Florida Department of Education: \$489,437)

NEW FACULTY MEMBERS



Wanyu Zang,
Assistant Professor

- Ph.D. from Nanjing University
- Expertise in cloud security and network security



Evorell (E.L.) Fridge,
Instructor

- Ed.D. from University of West Florida
- Expertise in full-stack web application development and software engineering

STUDENT HIGHLIGHTS

- Undergraduate and graduate students are co-authors on peer-reviewed conference and journal publications.
- Undergraduate and graduate students present at regional/national/international conferences.
- Students regularly place in competitions:
 - Southeast Collegiate Cyber Defense Competition - Top 5 of 30 Teams
 - Southeast Collegiate Penetration Testing Competition - 2nd place
 - International Collegiate Programming Contest - Southeast Region - 3rd place, Division II (March)

OUTREACH

- National Center for Women & Information Technology (NCWIT)

STUDENT ORGANIZATIONS

- Association for Computing Machinery (ACM)
- AI and Data Analytics (AIDA)

uwf.edu/computerscience



Computer Sciences
SCHOOL OF COMPUTER, DATA & INFORMATION SCIENCES
UNIVERSITY OF WISCONSIN-MADISON

Research Initiatives and Faculty Awards

Remzi Arpaci-Dusseau – Elected fellow of the American Academy for the Advancement of Science for distinguished contributions to computer research systems and development of computing systems with concomitant devotion to computing education for everyone

Eftychios Sifakis – Instrumental in developing innovative new AI tool for re-aging actors called FRAN

Barton Miller – Hosted first cyber tabletop exercise facilitated by UW Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency

Matt Sinclair & Shivaram Venkataraman – Awarded National Science Foundation CAREER Awards

Sharon Li – Awarded National Science Foundation CAREER Award and MIT Technology Review 2023 Innovator of the Year

Rahul Chatterjee – Created a clinic to help victims of domestic abuse whose attackers may be using technology to stalk them

Thomas Reps – Presented with International Conference on Computer Aided Verification 2023 Award

School of Computer, Data & Information Sciences (CDIS)

Our new building project has launched! To be completed July 2025, Computer Sciences, the Information School, and Statistics will be together under one roof. The new building will enable broad collaborations, magnifying the power of discovery across the university in medicine, engineering, agriculture, business, and beyond.



Our newest faculty



Ethan Cecchetti
Language-based security

Tej Chajed
Systems verification

New Degrees

MS in Data Science:
Joint program with the Statistics Department, fastest growing major on campus

MS in Data Engineering:
Professional program that prepares students for careers

Plus One Program:
Allows undergraduates to complete a Professional Master’s Degree with one more year of courses

Ranked top-10 by CSRankings.org for...

- Computer Architecture
- Databases
- Logic and Verification
- Operating Systems
- Programming Languages
- Visualization



Visit: www.cs.wisc.edu

DEPARTMENT NEWS

Institute for Software Integrated Systems celebrates 25 years

The institute continues to generate research and technologies that have had real-world impact, a roster of influential researchers, and thought leadership across multiple disciplines.

Future of Learning and Generative AI

Professor Jules White will lead the new Vanderbilt initiative, whose purpose is to explore how to leverage the best of this cutting-edge technology.

Vanderbilt joins NSF coalition on transportation innovation

The \$1 million Regional Innovation Engines Development award will support the creation of a roadmap to outline a statewide transportation mobility strategy in Tennessee.

3D system helps improve kidney stone treatment

A team at the Vanderbilt Institute for Surgery and Engineering (VISE) is working to create a navigational system to decrease residual stone fragments left behind after kidney stone surgery.

NSF grant supports alliance's effort to boost AI medical imaging

Vanderbilt researchers are part of an alliance supported by the National Science Foundation that seeks to build on the use of artificial intelligence (AI) in medical imaging in Middle Tennessee.

Community-based app helps manage mobile security and privacy

A Vanderbilt computer science graduate student has co-authored a study evaluating how technology can help people manage mobile privacy and security as a community.

Ph.D. Students

2022	2023
141	150



6%

Master's Students*

2022	2023
225	277



23%

*includes in-person and online

Bachelor's Students

2022	2023
757	766



1.1%

HIGHLIGHTS

Network Analysis

Prof. Tyler Derr won an NSF CAREER Award to advance network analysis methods for e-commerce and social media data that contain both positive and negative interactions.

Optimizing societal-scale systems

Prof. Abhishek Dubey has received a NSF CAREER Award to design decision procedures for systems such as traffic networks, emergency responders and power grids.

ORAU Powe Award

Prof. David Hyde received a grant from Oak Ridge Associated Universities for work on sonoluminescence—a process by which light is emitted by small bubbles in liquid when bombarded by blasts of high-pitched sound.

Hungarian Academy

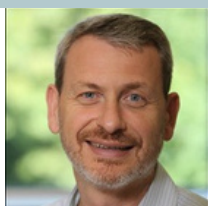
Prof. Gabor Karsai has been elected an External Member of the Hungarian Academy of Sciences, Engineering Sciences Section.

Vanderbilt
Computer
Science

615-322-2796

engineering.
vanderbilt.edu/cs

COMPUTER SCIENCE LEADERSHIP



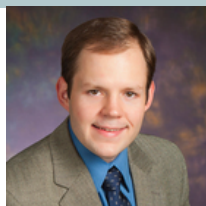
Xenofon Koutsoukos
Department
Chair



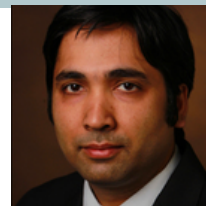
Douglas Schmidt
Associate
Chair



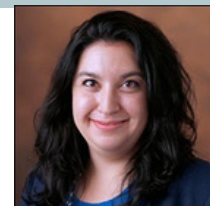
Julie Johnson
Director of
Undergraduate
Studies



Taylor Johnson
Director of
Graduate Studies,
Ph.D.



Abhishek Dubey
Director of
Graduate
Studies, MS



Ipek Oguz
Director of
Graduate
Recruiting



Computer Science

CYBERSECURITY: VCU leads the central-Virginia node of the Commonwealth Cyber Initiative

- DoD Cyber Crime Center (DC3) Education Partnership
- Agreement between Dept. of Defense for excellence in digital forensics
- NSA Center of Academic Excellence in Cyber Research
- NSA Center of Academic Excellence in Cyber Defense
- Member of US CYBERCOM Academic Engagement Network
- Partnership with Cybersecurity Manufacturing Innovation Institute (led by UTSA)

DATA SCIENCE: VCU leads the Commonwealth Center for Advanced Computing

ACADEMIC PROGRAMS:

Undergraduate

- Bachelor of Science in Computer Science
 - Concentration in CyberSecurity
 - Concentration in Data Science
 - Concentration in Software Engineering
- Accelerated B.S./M.S. in Computer Science
- Post-baccalaureate certificate in Computer Science

Graduate

- MS in Computer Science (with specializations in data science and cybersecurity)
- Ph.D. in Computer Science
- Graduate Certificate in Cybersecurity
- Graduate Certificate in Data Science
- Bridge to MS (for students with non-CS backgrounds)
- International Partnerships for MS program
- MS in Computer and Information Systems Security (with School of Business)

COMPUTING FOR ALL

Fundamentals of Computing online certificate for students with no STEM background. Students earn Digital Generalist credential after completing 3 courses from the selection of programming, data science, cybersecurity and software engineering & web development fundamentals.

FACTS & FIGURES

- VCU is a Minority-Serving Institution (MSI)
- In Dec. 2022, the National Science Foundation ranked VCU in the top 50 nationally for fiscal research expenditures.
- 850 undergraduate and 60 graduate students (26% Asian, 20% Black/African American, 10% Hispanic/Latino, 34% White)
- 17 tenure/tenure-track faculty; 6 term/teaching faculty

EVENTS: Annual events attracting hundreds of students

- RamHacks, one of the top ranked and largest hackathons in the U.S.
- NSA funded GenCyber Bootcamp in cybersecurity
- Cyber4n6: industry-focused experiential learning program in digital forensics partnering with Virginia State Police
- Summer REU: Software Engineering, Robotics, CodeBeats: Programming&Music, NLP/ML
- Programming competition for high school teams from across Virginia, D.C. and Maryland

FOCUS AREAS:

- Cybersecurity, Digital Forensics
- AI/ML, NLP, High Performance Computing
- Bioinformatics, Computational Biology, Biomedical Informatics
- IoT, Cyber-Physical Systems
- Software Engineering, Robotics
- Quantum Computing

Renowned Faculty:

- 2 IEEE Fellows
- 3 AIMBE Fellows
- 2 Fellows of Asia-Pacific Association of AI
- 2 Members of European Academy of Sciences and Arts
- 6 Faculty in world's top 2% of most-cited researchers in 2022
- CS faculty are funded by federal (NSF, NIH, DoD, DoE, DARPA, DHS, NSA, VHA, INL) and industry research awards (Google, Bank of America etc.)



Fact Sheet • Fall 2023

Students and Degree Programs

Undergraduate		18% women		Ranked 27th by US News & World Report	Graduate		28% women		Ranked 35th by US News & World Report
	1548 students* <small>*Sophomore, junior, senior</small>		526 BS degrees awarded <small>in 22/23</small>			608 Masters & 286 PhD students		61 MS, 246 MEng & 18 PhD degrees awarded <small>in 22/23</small>	

The Computer Science Department offers Bachelor of Science (BS), Master of Science (MS), Master of Engineering (MEng), and Doctoral (Ph.D.) degrees in Computer Science. The Department also offers an accelerated BS/MS degree in Computer Science and contributes to several additional degree programs at Virginia Tech, including...

- minors in CS, Cybersecurity, and Human-Computer Interaction (HCI).
- the BS in Computational Modeling & Data Analytics (CMDA).
- the PhD in Genetics, Bioinformatics & Computational Biology (GBCB).
- the online Masters of Information Technology (MIT).

Faculty and Staff

Faculty	81 total	Staff	9 research scientists and post-docs
	63 tenured/tenure-track (25 full, 13 assoc, 25 asst)		19 courtesy/affiliate faculty
	4 chaired professors		18 administrative and support staff
	11 collegiate faculty		16 administrative professional faculty
	2 professors of practice		
	5 instructors		

Research Strengths and Impacts

The Computer Science Department supports highly productive faculty with a strong tradition of interdisciplinary research.

Research Areas						Research Centers	Center for Human-Computer Interaction (CHCI)	19 NSF Career Award Winners
	Computational Biology & Bioinformatics	Data Analytics, Machine Learning, & NLP	Digital Education	HPC & Computational Science	Human Computer Interaction		Center for Synergistic Environments for Experimental Computing (SEEC)	
							Center for AI & Data Analytics (SCAIDA)	\$16M in research expenditures in 22/23
	Theory & Algorithms	Security	Software Engineering	Systems	Quantum Computing	STACK@VT (systems research)		

The Computer Science Department at Virginia Tech...

Presence	offers graduate programming in the Metro D.C. area with campuses in Falls Church and Arlington that include 14 faculty, 6 staff, and more than 300 graduate students.	Partnership	enjoys a strong industrial partnership program with more than 45 companies. Benefits of this partnership include: fall & spring career fairs exclusively for CS undergraduate and graduate students; student engagement with experiential learning opportunities; and sponsorships for capstone learning projects.
Leadership	is the leading participant in Virginia Tech's new Innovation Campus, under construction in Alexandria, VA.	Inclusivity	is committed to diversity and inclusion and seeks to recruit and retain the most qualified individuals in the field. Since 2007, the percentage of undergraduate students identifying as female rose from 4% to 18%, and the number of female faculty has more than doubled.



cs.wfu.edu



WAKE FOREST
UNIVERSITY

Department of Computer Science

RESEARCH AREAS

- Computer Systems, Security, Privacy, and Networks
- Machine Learning
- Data Mining
- Computational Biology and Biophysics
- High Performance Computing
- AI Based Drone Navigation and Image Analysis



NEW FACULTY



Dr. William Cochran



Dr. Aditya Devarakonda



Dr. Xueyuan (Michael)
Vanbastelaer



Dr. Fan Yang

RECENT NEWS

- National Science Foundation CAREER awards (2020, 2023)
- Computing Research Association Outstanding Undergraduate Researcher finalists (2022, 2023)
- Development of machine learning techniques for earth observation published in *Nature* manuscript "A global rise in alluvial mining increases sediment load in tropical rivers"
- Core members of DOE Sparsitute multi-institutional team developing high performance computing techniques to address sparse computational problems

Department of Computer Science & Engineering

2023



ABOUT CSE AT WASHU

Research in the Department of Computer Science & Engineering targets domains that are relevant to the future of society and leverages other strengths across the university. The rise of autonomous systems and artificial intelligence drives our research. And we leverage collaborations with the School of Medicine and other schools to advance many of our efforts ranging from imaging science to using data to improve health care and society.

CS continues to grow at the undergraduate level and is one of the largest majors at Washington University with more than 1,200 students — 18% of the population — studying computer science.

QUICK FACTS

Graduate programs:

- » PhD in Computer Science or Computer Engineering
- » MS in Computer Engineering
- » MS in Cybersecurity Engineering
- » MEng in Computer Science & Engineering
- » MS in Computer Science
- » Graduate Certificate in Cybersecurity Engineering
- » Graduate Certificate in Data Mining & Machine Learning

Interdisciplinary programs:

- » PhD in Computational & Data Science
- » PhD in Imaging Science

Undergraduate programs:

- » BS in Business + Computer Science
- » BS in Computer Engineering
- » BS in Computer Science
- » BS in Computer Science + Economics
- » BS in Computer Science + Math
- » BS in Data Science

Enrollments (Fall 2022):

- » Undergraduate: 1,024 (majors)
- » Master's: 253
- » Doctoral: 80
- » 26% of CSE students are women

46

Full-time faculty:
34 Tenured/tenure-track
12 teaching faculty

#1

Research in embedded
& real-time systems
(csrankings.org.)

100%

of faculty tenured over the
past five years have received
the NSF CAREER Award or
Young Investigator award

NEW FACULTY (2023-24)



Jiaxin Huang
Assistant Professor
*Natural language processing
and data mining*



Umar Iqbal
Assistant Professor
*User privacy
and security*



Hussein Sibai
Assistant Professor
*Trustworthy
autonomous systems*



Chongjie Zhang
Associate Professor
*Deep reinforcement
learning and AI*



NEW BUILDING

McKelvey Hall, the new home for CSE, opened in January 2021. The open concept that permeates the design fosters greater interactions and collaborations and broaden the impact of computing.

RESEARCH NEWS

- » The NSF is investing \$3 million in a research traineeship program: Artificial Intelligence (AI) Advancements and Convergence in Computational, Environmental and Social Sciences (AI-ACCESS) program.
- » Ning Zhang to investigate software system availability for cyberphysical systems with nearly \$521,000 NSF CAREER Award.
- » Chenyang Lu received the Test of Time Award from ACM Conference on Embedded Networked Sensor Systems (SenSys).
- » Patrick Crowley earned two NSF grants totaling more than \$2.1 million to develop networking systems and protocols.



Associate Professor **Daniel Grosu** was named IEEE Computer Society Distinguished Contributor.

Professor **Nathan Fisher** will chair the 45th IEEE Real-Time Systems Symposium.

Professor **Robert Reynolds** received the IEEE-Wiley Book of the Year award.

Three former Ph.D. graduates received **NSF CAREER awards** in the last decade: Lena Mashayekhy (2022), Sonia Haiduc (2019) and Denys Poshyvank (2013).

Three former Ph.D. students were recently **hired by R1 universities** as tenure-track assistant professors.

The **Wayne State Robotics Club** finished in sixth place out of 22 teams in the design phase of the 30th Intelligent Ground Vehicle Competition.

Ph.D. student Tyler LaFrance received the 2023-24 Michigan Space Grant Consortium Graduate Fellowship.

NEWS



CNS Core: Medium: Parallel and Real-Time Multicore Scheduling for an Efficiently-Used Cache (PARSEC)

PIs: Abusayeed Saifullah, Nathan Fisher NSF: \$570,016

Handling Coexistence of LPWAN with Other Networks

PI: Abusayeed Saifullah ONR: \$302,308

Neural Conversational Agent for Automated Weight Loss Counseling

PI: Alexander Kotov NIH: \$403,501

Elements: MVP: Open-Source AI-Powered MicroVessel Processor for Next-Generation Vascular Imaging Data

PIs: Zichun Zhong, Jing Hua NSF: \$599,921

HCC: Small: Understanding Online-to-Offline Sexual Violence through Data Donation from Users

PI: Dongxiao Zhu NSF: \$196,892

NEW FUNDED RESEARCH



RESEARCH AREA	U.S.	WORLDWIDE
Embedded and Real-Time Systems	#6	#11
Visualization	#35	#89
Computer Graphics	#48	#128
Computer Vision	#50	#144
Software Engineering	#67	#171
Artificial Intelligence	#79	#221

CSRANKINGS



- B.S./M.S./Ph.D. in Computer Science
- B.S. in Information Technology
- M.S. in Artificial Intelligence
- M.S. in Data Science and Business Analytics
- M.S. in Robotics
- Graduate Certificate in Mobility

DEGREE PROGRAMS



1,238 UNDERGRADUATE STUDENTS

25% FEMALE

14.4% UNDERGRADUATE ENROLLMENT FROM 2022 TO 2023

11.5% BLACK OR AFRICAN-AMERICAN

206 DEGREES AWARDED IN 2022
159 B.S., 36 M.S., 11 PH.D.

4.6% HISPANIC OR LATINO

29 FULL-TIME FACULTY

\$1.5-2M BETWEEN IN ANNUAL R&D EXPENDITURES

19 INBOUND EXCHANGE STUDENTS FROM 6 INTERNATIONAL UNIVERSITIES SINCE 2016

FACTS AND FIGURES



Nathan Fisher received his Ph.D. from the University of North Carolina at Chapel Hill, his M.S. from Columbia University, and his B.S. from the University of Minnesota, all

in computer science. He has received the NSF CAREER award and best paper awards from RTSS, ECRTS and IEEE Transactions on Industrial Informatics. He also received the "Most Influential Paper Award" during the 25th Anniversary of RTNS. Additionally, he has served as treasurer of the IEEE Technical Committee on Real-Time Systems (TCRTS) and was the program committee chair for ECRTS in 2016 and RTSS in 2024.

NEW CHAIR



WELLESLEY COLLEGE COMPUTER SCIENCE



The Wellesley College Computer Science department consists of faculty with a range of research interests and an underlying dedication to a multi-faceted liberal arts education for our students. Our goal is to prepare students to engage with and lead in a world shaped by computation and data. We aim to provide students with theoretical, technical, and ethical foundations so that they can collaborate effectively to design and build applications and tools that make a positive impact for individuals, communities, and society. The educational and research missions of the department are tightly coupled.

Research is integral to the computer science community at Wellesley. The educational and research missions of the department are tightly coupled: CS faculty regularly integrate their research into their courses at Wellesley and involve undergraduate students in their research projects. Computer science faculty at Wellesley lead vibrant programs of research in a broad range of fields:

Algorithms, systems, machine learning, artificial intelligence, computational linguistics, distributed computing, computational biology, data science, human-computer interaction, social computing, and games.

Inclusive Excellence:

Our department aspires to be a leader in broadening participation in computing. We value diversity, equity and inclusion in the field of computing. Our community value statement and Broadening Participation in Computing plan are available [here](#).

CONTACT:

Co-Chair Sohie Lee (slee at wellesley.edu)
Co-Chair Orit Shaer (oshaer at wellesley.edu)

NEW FACULTY (2023-2024):



Assistant Professor Vinitha Gadiraju conducts research in human-computer interaction and accessibility, particularly for learning and education. Her research on building collaborative, equitable tools for people with disabilities was recently published in ACM CHI 2020 and 2021.

Assistant Professor Alexa VanHattum conducts research in systems and programming languages, with a focus on applying lightweight formal methods to the compiler stack. Her work on verifying instruction selection was recently accepted to ACM ASPLOS 2024.



FACULTY RESEARCH HIGHLIGHTS:



Assistant Professor Carolyn Anderson explores the semantics of natural languages and programming languages using techniques drawn from cognitive modeling, deep learning, and formal semantics.

Assistant Professor Brian Brubach applies algorithmic fairness to intractable problems in machine learning, optimization under uncertainty, and the implementation of democratic systems.



Assistant Professor Christine Bassem was awarded an NSF CRII grant titled "Mobility Coordination of the Crowds in Mobile Crowd Sensing Platforms". She has served as a member of the inaugural ACM Future of Computing Academy.

Assistant Professor Catherine Delcourt conducts research in social computing and human-computer interaction. Her research on prototyping for social wellbeing with diverse early social media users was recently published in ACM CHI 2021 and 2022.



Associate Professor Eni Mustafaraj received an NSF award, titled "Pathways to Ethics of Technology in the Liberal Arts Curriculum", with a co-PI in the Wellesley Philosophy department, Julie Walsh. She also received NSF CAREER grant titled "Signals for evaluating the credibility of web sources and advancing web literacy".

Professor and co-Chair Orit Shaer published the book "Weaving Fire into Form: Aspirations for Tangible and Embodied Interaction" (ACM Books 2022). She received an NSF grant titled "US-German Research on Human-Automation Interaction for the Future of Work".



RESEARCH & TEACHING FACILITIES:

- Human-Computer Interaction Lab
- Mixed Reality Playable Media Lab
- Computer Architecture & Systems Lab
- Media Arts Lab

EXTERNAL
FUNDING:





LANE DEPARTMENT OF COMPUTER SCIENCE AND ELECTRICAL ENGINEERING

Faculty / 2023 NEW FACULTY HIRES / FACULTY RESEARCH HIGHLIGHTS



Yasser Alshehri
Assistant Teaching Professor,
Software Engineering
Computer Engineering



Prashna K Gyawali
Assistant Professor
AI and Cybersecurity
Healthcare



Prof. Nasser Nasrabadi (IEEE Fellow), received nearly \$1.1 million in funding for research that could improve counterterrorism, protection of critical infrastructure and transportation facilities, military force protection and border security. IARPA is funding the multi-year research effort called the Biometric Recognition and Identification at Altitude and Range program, which spans government agencies, contractors and multiple universities.



Prof. Gianfranco Doretto is leading a team of researchers in a four-year study of unsupervised continual machine learning, applying the results of experiments on electric fish to the development of software that will allow a robot to learn to navigate different terrains funded by a \$2 million National Science Foundation EFRI/BRAID grant.



Prof. Anurag Srivastava (IEEE Fellow), Lane Department chair and professor was lead author on the textbook titled "Cyber Infrastructure for the Smart Electric Grid" recently published by the Institute of Electrical and Electronics Engineers and Wiley.

Statler College of Engineering and Mineral Resources

AWARDS

Katerina Goseva-Popstojanova / Professor Educator of the Year

Tom Devine / Teaching Assistant Professor Educator of the Year

Jeremy Dawson / Associate Professor Outstanding Mentor of the Year

Kevin Bandura / Associate Professor Researcher of the Year

Gianfranco Doretto / Associate Professor Researcher of the Year

Brian Powell / Teaching Assistant Professor Excellence in Diversity, Equity and Inclusion Award for promoting a welcoming, supportive and nurturing campus environment

Faculty and student recognitions

13

CyberWVU, a WVU student organization placed 13th in the eighth annual CyberForce Competition. The event, which is sponsored by the U.S. Department of Energy and led by the Argonne National Laboratory, challenged 144 U.S. college and university teams from 35 states and Puerto Rico to thwart a simulated cyberattack.

35

Total number of faculty in the department

DEGREES

- BS: Computer Science
- BS: Cybersecurity
- MS: Online MS in Software Engineering
- MS: Computer Science
- PhD: Computer Science

Flexibility to take major and minor, dual major, or AoE in the same department

USCYBERCOM and All

Members of the USCYBERCOM academic engagement network and AFRL Information Institute.

CITeR and DHC

NSF I/UCRC Center for Identification Technology Research and College level Digital Health Center

INTERNATIONAL CHAMPIONS

Team Mountaineers, WVU Robotics team topped dozens of other teams from 10 countries in a competition to design and build the next generation of Mars rovers during the 2023 University Rover Challenge held May 31-June 3 at the Mars Desert Research Station in Hanksville, Utah.

Real-World Learning

Newly dedicated Learning and Collaboration space, Energy Systems Lab and a newly funded AWS based Cybersecurity Range that will benefit cybersecurity, engineering and computer science students.

TOP 2

WVU finishes 2nd overall in EcoCAR Mobility Challenge.

CENTER FOR CYBERSECURITY EXCELLENCE

WVU's cybersecurity program redesignated as National Center of Excellence by U.S. National Security Agency and Department of Homeland Security.



West Virginia University

BENJAMIN M. STATLER COLLEGE OF ENGINEERING AND MINERAL RESOURCES

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New Tenure-Track Faculty



Katerina Sotiraki
Post-quantum cryptography
and secure computation



Manolis Zampetakis
Theoretical machine learning
and optimization



Quanquan Liu
Theory and practice of
algorithms for large data

Recent Faculty Accomplishments

Abhishek Bhattacharjee is the recipient of the 2023 ACM SIGARCH Maurice Wilkes Award, the most prestigious mid-career award in the computer architecture community, for his “contributions to memory address translation used in widely available commercial microprocessors and operating systems.”

Theodore Kim won a 2022 Scientific and Technical Academy Award, along with collaborators, for the design and development of Pixar’s Fict2 elastic simulation system.

Yang Cai won the 2022 FOCS Test of Time Award with colleagues for their 2012 article “Optimal Multi-dimensional Mechanism Design: Reducing Revenue to Welfare Maximization.”

Charalampos (Babis) Papamanthou won the Test of Time Award at ACM CCS 2022 for his 2012 paper, “Dynamic Searchable Symmetric Encryption.”

Ruzica Piskac and colleagues won a Distinguished Paper Award at ACM CCS 2022 for their paper, “Proving UNSAT in Zero Knowledge.”

Abhishek Bhattacharjee and his student **Karthik Sriram** won the Distinguished Paper Award at ASPLOS 2023 for their paper, “Mosaic Pages: Big TLB Reach with Small Pages.”

Rajit Manohar, **Anurag Khandelwal**, and **Abhishek Bhattacharjee**, et al. were awarded the ISCA 2023 Best Paper Award for “SCALO: An Accelerator-Rich Distributed System for Scalable Brain-Computer Interfacing.”

Marynel Vázquez, **Brian Scassellati**, et al. were awarded the Best Technical Paper at the ACM/IEEE HRI 2022 for their paper, “Interactive Policy Shaping for Human-Robot Collaboration with Transparent Matrix Overlays.”

Daniel Rakita and co-authors received the Best Systems Paper at HRI 2022 for their paper, “Lively: Enabling Multimodal, Lifelike, and Extensible Real-time Robot Motion.”

Theodore Kim and collaborators were awarded the Best Paper Award at ACM SIGGRAPH/EGSCA 2023 for their work, “Lifted Curls: A Model for Tightly Coiled Hair Simulation.”



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