Computing Research Association
Academic Member Highlight Book

Fall 2018

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

CRA
Computing Research
Association

Table of Contents

Computer Science and Software Engineering (CSSE) by the Numbers

Twenty-one Tenured/Tenure-Track Faculty, **six** Teaching Faculty, **one** Research Faculty, **five** Adjunct/Affiliate Faculty
Four NSF CAREER and **one** Presidential Early Career Award for Scientists and Engineers awardees among faculty
Four Undergraduate Degrees:
BS in Computer Science, Bachelor of Software Engineering, Bachelor of Wireless Engineering, Bachelor of Computer Science (Online)
1,110 undergraduate students (**10**% Honors students), Incoming freshmen average ACT score **29.5**
Four Graduate Degrees:
MS in CSSE, MS in Cybersecurity Engineering, MS in Data Science & Engineering (Fall 2019), PhD in CSSE
175 graduate students: **95** PhD **80** Master's

Cybersecurity Research Centers
Auburn Cyber Research Center http://cyber.auburn.edu
The McCrary Institute http://mccrary.auburn.edu

Research Highlights

Faculty Research Funded by:
- National Science Foundation
- Department of Defense
- Intelligence Agencies
- Department of Education
- Private Industry
- Private Foundations

Research Areas by Faculty:

Artificial Intelligence & Machine Learning
- Bhattacharya
- Dozier
- Liu
- A. Nguyen
- T. Nguyen
- Yilmaz
- Zhou

Big Data & Databases
- Bhattacharya
- Ku
- Qin
- Zhou

Computer Games/Human-Computer Interaction/Computer Science Education
- Narayanan
- Seals
- Thomas

Computer & Wireless Networks
- Biaz
- Chapman
- Lim
- Shu

Cybersecurity & Internet of Things
- An
- Chapman
- Dozier
- Ku
- Lim
- Shu
- Umphress

Distributed, Embedded, Energy-Efficient, High Performance & Parallel Systems
- Baskiyar
- Biaz
- Chapman
- Qin

Software Analytics & Engineering
- Chang
- Cross
- Hendrix
- Nguyen
- Umphress
- Yilmaz

Interested in finding out more? Visit http://eng.auburn.edu/csse/index.html or contact:
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Australian National University

Recent Appointments

- Sid Chi-Kin Chau (Smart Cities, Internet-of-things, Algorithms & Optimization)
- Ranald Clouston (Logic & Computation)
- Hanna Kurniawati (Robotics, Motion Planning, Randomized Algorithms)
- Kee Siong Ng (Data Science) – one of several external-joint appointments in collaboration with the Australian Transaction Reports and Analysis Centre (AUSTRAC), Australia's Financial Intelligence Agency
- Alwen Tiu (Formal Methods, Computational Logic & Computer Security)
- Liang Zheng (Computer Vision & Machine Learning)

School Highlights

- Marcus Hutter awarded $276,000 USD through the Elon Musk Future of Life Institute. This project is about a mathematical investigation of how we can keep increasingly intelligent systems under control.
- Lexing Xie received the 2018 Computing Research & Education (CORE) Chris Wallace Research award for outstanding contributions to Computer Science research.
- Kee Siong Ng was awarded one of the first two ANU Translational Fellowships to develop translational research with partners outside academia.
- CONSORT Project lead by Sylvie Thiébaux was awarded the Clean Energy Council's Business Community Engagement Award. The project has advanced to the finals of Engineers Australia's Engineering Excellence.

Organizational News

- Engaged in the creation of two new ANU Innovation Institutes - Autonomy, Agency and Assurance Institute (3Ai) and the nation's first interdisciplinary Cyber Institute.
- Entered into a long-term strategic partnership and a significant research engagement program with the Australian Signals Directorate (ASD) that includes a new building that was opened in June 2018 (also shared with our collaborators at ANU Mathematical Science Institute). The joint engagement plan with ASD will cover research, workforce development, talent identification and general STEM outreach.
- The TechLauncher program, which enables students to work in teams on projects with external clients or create their own start-up, expanded to over 300 students with 50 clients from industry, government and within the university.
- Initiated the new overtly interdisciplinary Bachelor and Master of Applied Data Analytics programs that were developed in close consultation with the Australian Public Service.
- Approved to grow the number of tenure-track staff in the ANU Research School of Computer Science by 50% over the next 5 years.
- Doubled in size over the last 3 years in terms of equivalent full-time student load.

Contact Us

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Canberra ACT 2600 Australia

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facebook.com/anu.cecs

twitter.com/anucecs

Department of Computer Science
Binghamton University

Faculty:
- 34 full-time faculty members: 8 professors, 7 associate professors, 13 assistant professors, 6 lecturers.

Students
- Close to 1,000 students: 598 undergraduate students, 326 MS students and 72 PhD students
- Fall 2018 enrollments: 154 undergraduates, 138 MS and 7 PhD students

New Faculty Hires

Xi Peng
PhD, Rutgers
Research Areas: Deep Learning, machine learning, intelligent data analytics, and computer vision.
Joined in Fall 2018
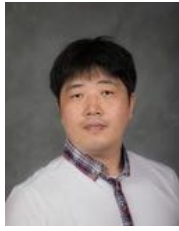
Seunghee Shin
PhD, North Carolina State
Research Areas: Computer Architecture and systems
Joined in Fall 2018

Shiqi Zhang
PhD, Texas Tech
Research Areas: Artificial Intelligence and robotics
Joined in Fall 2018

Research Highlights:
- Selected recent grants
  - *Kanad Ghose, Aravind Prakash, Yifan Zhang. "Hardware Architecture Resilience by Design (HARD)," DARPA $2.9M.*
  - *Bahgat Sammakia and Kanad Ghose. "Collaborative Center: I/UCRC in Energy-Efficient Electronic Systems." NSF, $499,997.*
  - *Yu David Liu. "SHF: Small: Lazy Data Structures for Data-Intensive Applications". NSF, $449,827*
  - *Yu David Liu. "CRI: CI-New: Collaborative Research: Extensible, Software Enabled Unmanned Aerial Vehicles," NSF, $366,251.*
- Faculty continue to publish in top venues such as*: ICDCS, USENIX ATC, MM, FAST, ASE, ICCAD, MICRO, ASPLOS, INFOCOM, WWW, CVPR, AAAI, IJCAI*

Other Highlights:
- Kanad Ghose won Chancellor's Award for Excellence in Faculty Service.
- Eight female CS students attended Grace Hopper Celebration held in Orlando in October 2017, most were sponsored by an alumni donation and the Watson School.
- Department's Invited Speaker Series had 9 distinguished speakers during 2017-2018 academic year.

Boston College Computer Science Department
2018 Highlights (more information: `http://cs.bc.edu`)

New Faculty in 2018
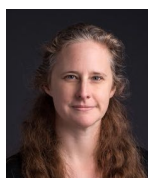
Emily Prud'hommeaux, Assistant Professor
Natural language processing, speech signal processing, applications of computing for health and accessibility, computational linguistics.
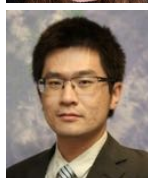
Hsin-Hao Su, Assistant Professor
Theoretical aspects of distributed systems, bio-inspired algorithms.

Faculty Research Areas

Distributed optimization, machine learning, distributed systems, natural language processing, data mining, theory of computation.

Active Research Funding

- Asst. Prof. José Bento. Predicting the emergence of antibiotic resistance through multi-omics approaches and immune system surveillance. NIH NIAID (U01), 22.5% of approx. \$10 M.

- Asst. Prof. José Bento. Design and computation of scalable graph distances in metric spaces: a unified multiscale interpretable perspective. NSF Big Data, 37.5% of approx. \$1.6 M grant.

- Asst. Prof. Emily Prud'hommeaux. Automated analysis of pragmatic language development in Autism Spectrum Disorder. NIH NIDCD (R21), approx. \$325 K of \$500 K grant.

- Asst. Prof. Lewis Tseng. Improving latency in geo-replicated storage by relaxing consistency requirements. NSF CNS, approx. \$242 K.

- Asst. Prof. Lewis Tseng. Task allocation and content placement in multiple micro vehicle clouds. Toyota InfoTechnology Center, \$20 K.

Academic Programs and Staff

Bachelor of Science and Bachelor of Arts programs in Computer Science (391 majors, July 2018). Faculty: 7 tenure-track, 2 full-time teaching, 2 visitors. One systems admin., one admin. assistant.

BU | Department of Computer Science

NEW FACULTY HIRES

Derry Wijaya
Natural language processing and knowledge bases, with a focus on machine learning and deep learning applications

Manos Athanassoulis
Data systems, with emphasis on studying the interplay between new storage and computing hardware, modern complex workloads, and data systems architecture

Mark Bun
Theoretical computer science with a focus on computations complexity and foundational questions in data privacy

Francesco Orabona
CS Affiliate Professor. Parameter-free methods in machine learning, Schohastic and Online Optimization, and Statistical Learning Theory

STUDENT GROWTH AND NUMBERS

807 majors and 113 minors in Fall 2018, up 250% in the last five years

136 professional Masters students, up from 24 five years ago

88 PhD students, up from 52 five years ago

Total enrollments in CS courses up 134% in the last five years

50% of CS minors are female

ORGANIZATIONAL NEWS

Computer Science Professor Stan Sclaroff named Interim Dean of the College of Arts & Sciences

Computer Science Professor John Byers named Interim Associate Dean of the Faculty for the Mathematical & Computational Sciences

Continued partnership with Red Hat, forged in January 2017, resulted in 32 Red Hat interns from BU in Summer 2018

WWW.BU.EDU/CS
@BUCOMPSCI

RESEARCH HIGHLIGHTS

BU launched the AI Research Initiative (AIR) led by Professor Kate Saenko

Margrit Betke and Lei Guo received a 2017 Google Research Award in Information Retrieval and Real Time Content

Emily Whiting awarded an NSF grant to support new research on "Computational Joinery", collaborative with Robotics Professors at Dartmouth College and SUNY Albany

Margrit Betke and Derry Wijaya awarded a BIGDATA NSF grant to analyze public communication, with collaborators from BU COM and ECE.

OTHER HIGHLIGHTS

Alina Ene awarded an NSF CAREER Award
Ran Canetti awarded the 2018 RSA Conference Award for Excellence in the Field of Mathematics

John Byers awarded an NSF grant on revisting network QoS in the cloud era, collaborative with Tufts Professor

George Kollios awarded NSF grant on access pattern privacy, collaborative with Professors at Georgetown and Cornell

BOSTON UNIVERSITY
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
www.bu.edu/ece

3 NEW FACULTY MEMBERS HIRED THIS YEAR; 7 MORE IN THE PREVIOUS 2 YEARS:

Assistant Professor
Francesco Orabona

Assistant Professor
Gianluca Stringhini

Assistant Professor
Rabia Yazicigil

- Professor Ji-Xin Cheng
- Asst. Professor Michel Kinsy
- Asst. Professor Wenchao Li
- Asst. Professor Alexander Olshevsky
- Asst. Professor Miloš Popović
- Asst. Professor Lei Tian
- Associate Professor Chen Yang

NEW FACULTY OPENINGS: bu.edu/eng/ECEfacultysearch

RESEARCH HIGHLIGHTS:

NEW NSF Engineering Research Center Focuses on Fixing Failing Hearts

BU ECE won a $20M award from the National Science Foundation (NSF) to host a new multi-institution Engineering Research Center (ERC) tasked with synthesizing personalized heart tissue for clinical use. The grant is renewable for a total of 10 years and $40 million.

Center for Semiconductor Modeling of Materials & Devices

A new Center for Semiconductor Modeling of Materials and Devices funded by the U.S. Army Research Laboratory and headed by Professor Enrico Bellotti is developing new methodologies that will allow for a faster and more effective device development process for semiconductor-based electronic devices.

Genetic Circuit Design Automation

The Living Computing Project, which was awarded a $10 million grant from the National Science Foundation, will develop technology for systems that can harness evolution, adaptation, replication, self-repair, and more.

"It's the hits to the head, not concussions, that trigger CTE"

A new study that suggests chronic traumatic encephalopathy (CTE) is caused by head injuries and not by concussions, explains why 20% of athletes in early stages of the illness, and whose brains were examined postmortem, never had a concussion. To that end, efforts that center on protecting athletes from concussions should focus more on preventing repeated hits to the head.

Research Funding Growth:

↑ **14%**

AVERAGE ANNUAL GROWTH RATE OVER 10 YEARS

$30M
$20M
$10M

$9M — 2008
$16M — 2013
$27M — 2018
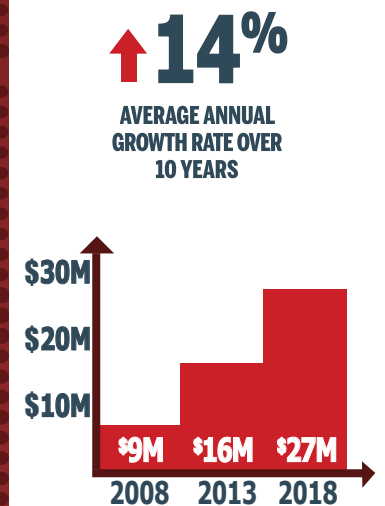
FACULTY HIGHLIGHTS:

Professor David Bishop became a fellow at the National Acadmey of Inventors. He was chosen for having "demonstrated a highly prolific sppirit of innovation in creating or facilitating outstanding inventions that [have] made a tangible impact on quality of life, economic development, and the welfare of society."

Associate Professor Vivek Goyal was a co-recipientof a 2017 IEEE Signal Processing Society Best Paper award. The work in the paper could lead to next-generation sensor systems with greatly reduced memory, communication, and power requirements to significantly impact the world around us.

Associate Professor Ayse Coskun won the 2017 IEEE CEDA Ernest S. Kuh Early Career Award for her sustained and outstanding contributions to energy-efficient system-level design. This includes temperature-aware design and management, 3D-stacked system design, and management of large-scale computing systems.

STUDENT NUMBERS AND GROWTH:

778 STUDENTS
126 PHD
227 MASTER'S
425 BACHELOR'S

AVERAGE ANNUAL ENROLLMENT GROWTH OVER 7 YEARS

↑ **20%** PHD

↑ **13%** MASTER'S

↑ **11%** BACHELOR'S

ORGANIZATION NEWS:

The College of Engineering was ranked 4th best from early-to-mid career salary increase according to Payscale, and 6th in employability worldwide by the Times of Higher Education.

BU ECE was awarded a $1M contract from the Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) to develop a system of sensors that can estimae the number of people in a room and adjust the HVAC accordingly.

https://www.bradley.edu/academic/departments/csis/

Student highlights

In Fall 2018, Computer Science and Information Systems (CS&IS) had one of its largest incoming Freshman class.

A number of undergraduate students participated in two programming contests: the CCSC-MW (Consortium for Computing Sciences in Colleges: Midwest) on September 22-23, 2017, at Calvin College, in Grand Rapids, MI. and the ACM ICPC Mid-Central (ACM International Collegiate Programming Contest) on November 4, 2017, at the University of Chicago.

Faculty research highlights

Dr. Vladimir Uskov co-edited and co-authored four chapters in a book entitled "Smart Universities"; it was published by Springer (https://www.springer.com/us/book/9783319594538).

Dr. Vladimir Uskov chaired the 5th International Conference on Smart Education and e-Learning (June 20-22, 2018, Gold Coast, Australia, http://seel-18.kesinternational.org/), co-authored and co-edited conference proceedings published by Springer (https://www.springer.com/us/book/9783319923628).

Departmental highlights

A new concentration, for CS and CIS majors, and a new minor, for all undergraduate students, are created in Data Science; these two new programs are based upon existing courses and one new course.

In 2017-2018, CS&IS conducted an academic program review and we would like to thank the chairs of the computer science departments at Lehigh University and Loyola University Chicago for helping us review our program.

Faculty updates

Dr. Tachun Lin was promoted to Associate Professor in Fall 2018. **Adam Byerly**, who joined the department as a tenure track Lecturer in Fall 2017, won the first year teaching award for the entire university. **Scott Williams** accepted a tenure track Lecturer position; he has a JD degree from Duke University and a MS degree in computer science from Bradley, and he had previously taught for the department. **David Brennan** accepted a Visiting Instructor position; he has a BS degree from Bradley and just completed an MS degree from Carnegie Mellon University in Information Systems Management, Business Intelligence and Data Analytics, and he previously worked at Caterpillar Inc. Scott and David started teaching in Fall 2018.

New faculty hires

- George Amvrosiadis: high performance computing, big data analytics, scalable machine learning
- Yuejie Chi: statistical signal processing, optimization, compressed sensing, machine learning
- Qing Li: nanophotonics, nonlinear optics, quantum frequency conversion, optical interconnects, RF signal
- Piotr Madziel: transparency and accountability in machine learning with applications to privacy and fairness
- Barry Rawn: electric power systems, photovoltaics
- Virginia Smith: large-scale machine learning and distributed optimization
- Xu Zhang: enable advanced nano-electronic devices and their system-level integration

Global program locations

Pittsburgh
Silicon Valley
Portugal
Africa
Thailand

2019 Rankings
U.S. News & World Report

Undergraduate	**Graduate**
Electrical: 9	Electrical: 8
Computer: 1	Computer: 4

Faculty highlights

74 core   **66** courtesy   **34** adjunct

- Search underway for the next department head (Jelena Kovačević has been appointed the Dean of New York University's Tandon School of Engineering)
- Radu Marculescu featured in Nature Scientific Reports for research outlining a new model for how social networks change and develop over time
- Anthony Row selected to lead a $27.5 million CONIX JUMP Center (supported by SRC and DARPA) to build more intelligence into computer networks
- Gauri Joshi received the Berkman Faculty Development Award to aid her research and acquire real-world data sets to validate her findings
- Carlee Joe-Wong received an NSF CAREER Award to establish the economic foundations for the next generation of computing
- Diana Marculescu received the Celebration of Education Award for advocating and mentoring graduate students and young faculty
- Daniel Siewiorek named the 2018 recipient of the IEEE Computer Society Taylor L. Booth Education Award
- The following professors received professorships: Shawn Blanton, Yuejie Chi, Ian Lane, Radu Marculescu, and Marios Savvides

Student highlights

- Build18, an annual student-led hardware hackathon, will celebrate its 10th anniversary in the Spring of 2019
- Carnegie Mellon Rocket Command (CMRC) finished in the top 10 in a NASA competition and received the altitude award for coming closest to hitting a one-mile target launch
- CMU-Africa celebrated its 5th graduating class
- CMU-Silicon Valley's student population exceeds 200 students

2017-18 student population: **1,195**

532 B.S.   **433** M.S.   **230** Ph.D.
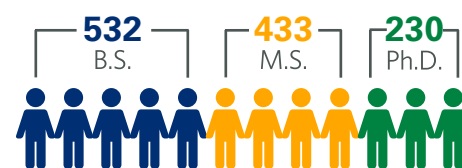
Department initiatives

Established four new M.S. concentrations for students to choose from, allowing for focused study in a specific area of electrical and computer engineering; cyber-physical systems, computer security, data and network science, and wireless systems.

Carnegie Mellon University and King Mongkut's Institute of Technology Ladkrabang, a leading engineering university in Thailand, announced a long-term collaboration to significantly expand research and education.

Carnegie Mellon University's College of Engineering and Howard University partnered to cover a wide range of initiatives between the two institutions, including a dual-degree Ph.D. program that allows students to earn a Ph.D. degree from both schools.

SCHOOL OF COMPUTING
CLEMSON UNIVERSITY

4 Divisions

COMPUTER SCIENCE
HUMAN-CENTERED COMPUTING
VISUAL COMPUTING
FACULTY OF INSTRUCTION

8 New Faculty Members

24 Research Labs/Groups

Degrees

3 Undergraduate

BS Computer Science

BA Computer Science

BS Computer Info Systems

7 Graduate

PhD/MS Computer Science

PhD/MS Biomedical Data Science & Informatics

MFA/MS Digital Production Arts

PhD Human-Centered Computing

Paige Rodeghero
Assistant Professor
Ph.D. University of Notre Dame

Long Cheng
Assistant Professor
Ph.D. Virginia Tech

Julian Brinkley
Assistant Professor
Ph.D. University of Florida

Guo Freeman
Assistant Professor
Ph.D. Indiana University

Federico Iuricich
Assistant Professor
Ph.D. University of Genova

Daljit Dhillon
Assistant Professor
Ph.D. University of Bern

Andrew Hill
Lecturer
M.S. Clemson University
M.S. NC State

Roger Van Scoy
Professor of Practice
M.S. Johns Hopkins
M.S. University of Pittsburgh

48 FACULTY 17

Core   Affiliated

218 GRADUATE STUDENTS
2017-18

- MS CPSC
- MS/PhD BDSI (NEW)
- PhD CPSC
- PhD HCC
- MS/MFA DPA

860 UNDERGRAD STUDENTS
2017-18
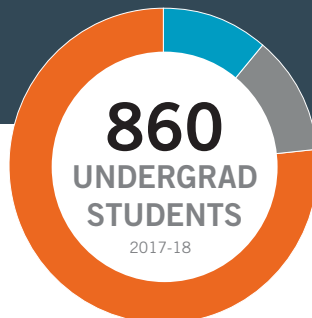
- BS-CS
- BA-CS
- BS-CIS

Carnegie Classification of Institutions of Higher Education
Doctoral Universities: Highest Research Activity

A leader in computer science research and education, and in the definition and advancement of emerging interdisciplinary fields that integrate computation with the sciences, engineering, healthcare, arts, and humanities.

www.clemson.edu/computing

CLEMSON
1889
School of COMPUTING

Colgate University

Hamilton, NY USA

Department of Computer Science

https://cs.colgate.edu

Colgate University is a highly selective, private, liberal arts, undergraduate institution with roughly 2,900 students.

We value high-quality teaching and we have a strong research culture. Our energetic faculty have active research programs and involve student researchers during the summer and the academic year.

Research Highlights

- 18 undergraduate summer research fellows hosted during Summer 2018, under the direction of 7 faculty members
- Papers co-authored with undergraduates published in each of the last three years; students have presented work at regional, national, and international conferences
- Faculty have secured external grants from NSF & DARPA as well as many internal grants, including from the Colgate Picker Interdisciplinary Science Institute

Other Highlights

- Two very active student clubs: Women in Computer Science and <ColgateCoders>
- Students run after-school coding lessons at the local elementary school
- Summer workshop at Camp Fiver in nearby Poolville, NY, part of a youth-development organization for children from underserved communities
- Students won scholarships from CRA-W and other organizations to attend the Grace Hopper Conference (GHC) in each of the last three years
- The department is sending 11 students to GHC and the Tapia Conference in 2018, and is committed to diversifying our student population

Student Numbers and Growth

- The department is committed to small class sizes; still, more than 200 students take our CS1 course each year
- 200% increase in majors from class of 2013 to class of 2018, with students continuing on to top-tier industry positions and graduate programs
- Faculty size has doubled from 2012–2018
- We are hiring two new tenure stream faculty to start in 2019

Highlights for 2017–2018

- Qun Li was named a Fellow of the IEEE.

- Adwait Jog received an NSF CAREER Award. His project is *Addressing Scalability Challenges in Designing Next-generation GPU-Based Heterogeneous Architectures*.

- Denys Poshyvanyk received an ACM SIGSOFT Distinguished Paper Award at the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE'17) for the paper *Automatically Assessing Code Understandability: How Far Are We?*, by S. Scalabrino, G. Bavota, C. Vendome, M. Linares-Vásquez, D. Poshyvanyk, and R. Oliveto.

- Dmitry Evtyushkin was a co-author of *SafeSpec: Banishing the Spectre of a Meltdown with Leakage-Free Speculation*, which proposes a solution to mitigate the Spectre and Meltdown attacks. Dmitry's earlier work on branch target buffer side-channel attacks figured in the discovery of these attacks.

- Xu Liu and his student Sasha Wen received a Best Paper Award at the 23rd ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP '18) for the paper *Featherlight On-the-Fly False-sharing Detection*, by M. Chabbi, S. Wen, and X. Liu.

- Phil Kearns retired in Spring 2018 after more than 30 years with the department.

Student highlights:

- The department sent 11 students to the 2018 Grace Hopper Conference.

- The department sent 11 students to the 2018 ACM Richard Tapia Celebration of Diversity in Computing.

DEPARTMENT OF COMPUTER SCIENCE

COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

New Faculty (woo hoo!)

Vibhuti Dave
Joined Fall 2018
Teaching Professor

Laura Hobbes LeGault
Joined Fall 2018
Teaching Assistant Professor

2017-18 Distinguished Speakers
Michael Reiter (UNC)
Fran Berman (RPI)
Dieter Fox (UW)
Lucy Sanders (NCWIT)
Tom Cortina (CMU)
Peter Breunig (Chevron)
Thanks for visiting CS@Mines!

Recent Highlights

➢ Bo Wu received an **NSF CAREER Award** to develop techniques to support multitasking in graphics processing unit (GPU) computing. The project, titled "Compiler and Runtime Support for Multi-Tasking on Commodity GPUs," will receive $501,546 over five years.
➢ Several additional recent research grants received from **DOE, NSF, NASA, and NSA**.
➢ Tracy Camp was honored with the 2018 Computer Science and Engineering **Distinguished Alumni Award** from Michigan State University, College of Engineering.

Student Achievements, Numbers, and Growth

➢ Lodewijk "Lou" Brand, a doctoral student in CS@Mines, received a Department of Defense **fellowship** for his proposed project: Data-Enabled Additive Manufacturing.
➢ Matthew Sanders (Ph.D. student) and Chuan Yue (CS@Mines faculty member) received the **Outstanding Paper Award** at the ACM Conference on Data and Applications Security.
➢ Three CS@Mines undergraduate students (Matthew Baldin, Samuel Reinehr, and Allee Zarrini) won our regional ACM International Collegiate Programming Contest, which got them (and Coach Jeff Paone) an invitation to the **ICPC World Finals** in Beijing, China.
➢ 539 Undergraduate Students (38% increase from a year ago)
➢ 81 Graduate Students (43% increase from a year ago)

Organizational News

➢ CS@Mines launched the first disciplinary specific **research honors program** at Mines.
➢ Over **500 girls** participated in our outreach program during 2017-18: tech.mines.edu.
➢ **22 companies** (46% increase from a year ago) partnered with CS@Mines via our Computing-Mines Affiliates Partnership Program (mapp.mines.edu), which provided 59 scholarships to current CS students.
➢ NCWIT Surging Enrollment Seed Fund award created UCLIMB, a new **near-peer mentoring program** that trains selected students who have recently mastered our CS0 course to mentor students currently enrolled.
➢ CS@Mines now holds a **Computing Innovation Fair** each semester to showcase student projects to industry partners and the Mines community.
➢ **5 Pilot Scholars** helped launched a new CS@Mines scholarship program for academically talented, low income students: paths.mines.edu.

CS@Mines

New Faculty, 2018 - 2019

Tim Roughgarden
Roughgarden works on algorithmic game theory and on the design, analysis, applications, and limitations of algorithms.

Baishakhi Ray
Ray's research focus is software engineering with the intent to improve software reliability and security.

Carl Vondrick
Vondrick's research interests are in computer vision and machine learning.

Tony Dear
Dear studies the intersection of mechanics, control, and robot locomotion. He incorporates active learning in the STEM courses he teaches.

Shuran Song
Song is an expert in computer vision and robotics, whose research is focused on data-driven scene understanding in 3D.

Brian Smith
Smith's research combines computer vision, ubiquitous computing, and augmented reality to create the next generation of interactive systems.

Test of Time Awards

An Analysis of the Skype Peer-to-Peer Telephony Protocol (2006)
Award: Test of Time Award, IEEE INFOCOM
Authors: Henning Schulzrinne, Salman Baset

Discriminative Training Methods for Hidden Markov Models: Theory and Experiments with Perception Algorithms (2002)
Award: Test of Time Award, NAACL
Author: Michael Collins

Anomalous Payload-based Network Intrusion Detection (2004)
Award: Most Influential Paper, RAID 2017
Authors: Salvatore Stolfo, Ke Wang

A Touring Machine: Prototyping 3D mobile Augmented Reality Systems for Exploring the Urban Environment (1997)
Award: Inaugural Early Innovator Award, ISWC 2017
Author: Steven Feiner, Blair McIntyre, Tobias Höllerer, Anthony Webster

Department Numbers

#13 (tie), up from **#15** (tie), in *US News and World Report* ranking of US Computer Science Departments

56 Faculty
1457 CS majors, a 29% increase from last year
12,166 CS class enrollments
40% of CS majors are women
(of 1,004 students reporting gender)
All student stats from 2017-2018 academic year

Major Faculty Awards

Best Paper Awards

AirCode: Unobtrusive Physical Tags for Digital Fabrication
One of three Best Paper Awards at UIST 2017
Authors: Dingzeyu Li, Avinash S. Nair, Shree K. Nayar, and Changxi Zheng

DeepXplore: Automated Whitebox Testing of Deep Learning Systems
Best Paper at ACM 2017 SOSP
Authors: Kexin Pei, Yinzhi Cao (Lehigh), Junfeng Yang, Suman Jana

'Lighter' Can Still Be Dark: Modeling Comparative Color Descriptions
One of two Best Short Paper Awards at ACL 2018
Authors: Olivia Winn and Smaranda Muresan
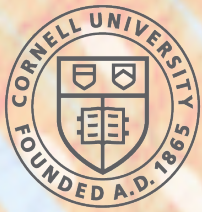
Four New Faculty Members Hired in Computer Science
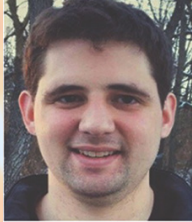
Assistant Professor Austin Benson Networks and scientific computing

Assistant Professor Eshan Chattopadhyay Complexity theory

Assistant Professor Nika Haghtalab Machine Learning (starting Fall 2019)

Asst Prof -- Cornell Tech Volodymyr Kuleshov Machine Learning and Computational Biology (starting Fall 2019)

Faculty Highlights

Cornell CS welcomes a new chair this year -- **Prof Kavita Bala**. Bala specializes in computer vision and computer graphics leading research in recognition, perception and physically-based rendering.

IC3 (Initiative for Crypotocurrencies and Contracts) continues to lead the blockchain field in research, holding its third IC3-Ethereum Crypto Boot Camp and annual retreats to discuss solutions for widespread blockchain adoption.

CS faculty and students were honored at SIG-COMM 2018 with a Rising Star Award (Prof **Nate Foster**) , a Networking Systems Award (Prof **Robert Kleinberg**), and a Best Student Paper Award (grad students **Saksham Agarwal** and **Shijin Rajakrishnan**, Prof **David Shmoys,** Prof **Rachit Agarwal**).

Other awards this year include: two NSF Career Awards; a Sloan Fellowship; the Casper Bowden Award for Outstanding Research in Privacy Enhancing Technologies; SIAM's Sonia Kovalevsky Lecture; the NSF Tripods Grant; the ACL Test of Time Award; Most Influential Paper at ASPLOS; NEC's C&C Prize; ACL and ACM Fellows.

Student Statistics

In 2017-2018 women accounted for **38%** of computer science majors. Among this year's incoming engineering class, **55%** of students indicating interest in computer science are **women**.

In 2018 **34** Cornell undergraduates are receiving all-expenses-paid trips to Grace Hopper Celebration of Women in Computing and **43** to the Tapia Celebration of Diversity in Computing Conference.

In 2018 **11%** of computer science majors are from **underrepresented minority groups**.

This year's incoming PhD computer science class welcomes **36% women** and **15% URMs**.

In The News

Cornell University Named #1 University to Study Blockchain by Trustnodes.

If you're into computer science with an interest in blockchain technology, the best place to go is Cornell.

CIS Program Aim to Draw Minority STEM Students Into Academic Careers

The SoNIC Summer Research Workshop brings 25 URM students to Cornell CS to experience cloud computing and network research firsthand.

WHO WE ARE

Cornell University's Department of Information Science brings together leading scholars from across Cornell's Ithaca and New York City campuses to study the use of technology and its impacts. We are nimble, adaptive, interdisciplinary, inclusive, and collaborative, comprised of faculty and students who explore technology through a variety of lenses, including law, sociology, policy, economics, design and much more. Formed in 2005, Info Sci is housed along with Computer Science and Statistical Science under the college of Cornell Computing and Information Science (CIS).

NEW FACULTY

René Kizilcec
Assistant Professor
social psychology, HCI, digital learning

Cheng Zhang
Assistant Professor
ubiquitous computing, wearable computing, HCI

FACULTY
35

2018 RESEARCH AWARDS
as of Fall '18
$6.3 million

GRADUATE STUDENTS
87 Masters
58 PhDs

UNDERGRAD MAJORS

0	100	200	300	400
2017-2018				
2016-2017				
2015-2016				
2014-2015				

FALL '18
374 MAJORS

enrollment data by academic year

SELECT HIGHLIGHTS

Cornell Info Sci gains another homebase: **Cornell Tech** on Roosevelt Island in NYC is officially dedicated.

Info Sci pairs with Cornell Law to launch the **Tech/Law Colloquium**, a public series exploring AI, policy, ethics, and law.

PhD candidate **Justine Zhang** is named one of 10 fellows accepted to the Microsoft Research PhD Fellowship program.

Info Sci researchers **shine at CHI '18**, with 20 accepted papers, including two Best Papers and an Honorable Mention.

Info Sci launches **"Designing for Social Impact"**, a summer workshop for underrepresented minorities in STEM fields.
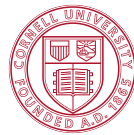
Professors Cristian Danescu-Niculescu-Mizil and Nicola Dell receive **NSF** and **Google Research** awards.

All PhDs from the class of 2017 **land prestigious jobs in academia and industry**.

Professor **David Mimno receives an NSF CAREER award** to explore machine-learning methods to unlock vast digital libraries.

Faculty Changes
- Newly hired: Fereshteh Ghahramani, Cybersecurity
- Newly tenured: Enid Montague, Health Informatics; and Alexander Rasin, Databases

Selected Recently Awarded Grants
- Dettori, Lucia, "Bridges to CS4All: Advancing High School Computer Science through Math and Science Integration," NSF, $1,249,821.
- Dettori, Lucia, "Chicago Alliance for Equity in Computer Science (CAFÉCS)," NSF, $865,945 (DePaul portion of a $2M collaborative grant).
- Godage, Isuru, "RI: Small: Collaborative Research: A Modular Approach to Robot Systems Incorporating Compliant and Soft Elements," NSF, $289,900.
- Sharevski, Filipo and Labruyere, Jean-Philippe, "CORE: Platform for Cybersecurity Education through Gamification," NSA, $154,634.
- Stan Raicu, Daniela and Furst, Jacob, "REU Site: MedIX: MEDical Informatics eXperiences in Undergraduate Research," NSF, $371,988 (for the continuation of research).
- Westbrook, J., Trowbridge, A., Sharevski, F., "Secure Design: Course and Experimentation Workshop," NSA, $141,294.

Data Science Summer Academy for High School Students
Through a SIGKDD Impact Program grant awarded to faculty in our Center for Data Mining and Predictive Analytics, we held a Data Science Summer Academy for Chicago Public School high school students. Students explored the techniques used to analyze and interpret data and create innovative solutions using digital information.

Student Recognition
- Our Computer Science Society student organization planned and orchestrated their first annual student hackathon, DemonHacks. There were 115 participants from at least five different states.
- Six students were selected for the Illinois Technology Foundation's "Fifty for the Future" list.
- PhD student Redar Ismail, along with a team of three others, won first prize at the BuiltWorlds Hackathon. Additionally, Redar and student Badar al Lawati were the leaders of the winning Campus 1871 team.
- MS Data Science student Sierra Sellman was a finalist for the Women in Technology Leadership Award.

Updated Facilities
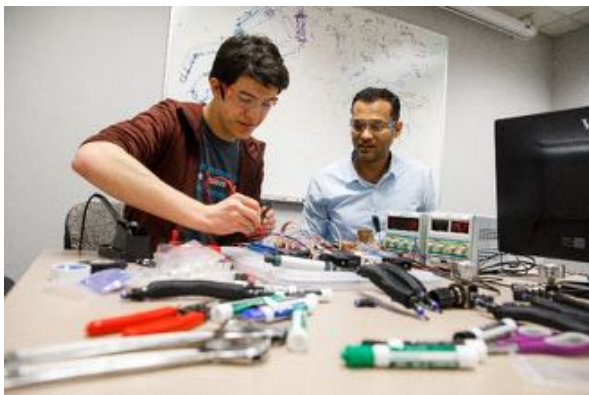
Students and faculty in the Robotics and Medical Engineering (RoME) Lab develop tele-operable, MRI-guided/compatible robots to safely carry out intricate surgical procedures in previously inaccessible regions.
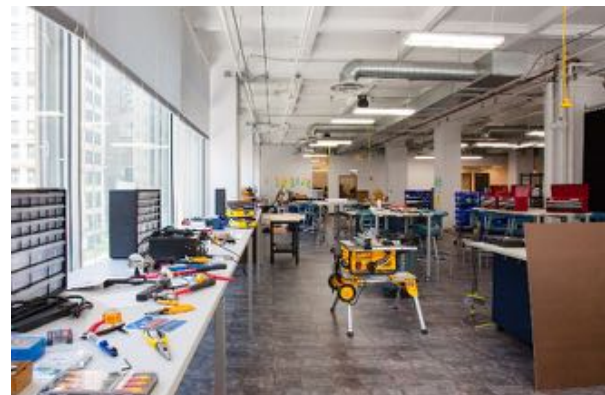
The Idea Realization Lab is an on-campus, 4500 square foot, student-driven makerspace that encourages the pursuit of thinking through making.

Growing Enrollment, Expanding Programs and Increasing Diversity

With nearly **1,900 students**, Drexel University's College of Computing & Informatics (CCI) is one of the **largest, most comprehensive and rapidly growing information and technology programs in the country**. CCI experienced tremendous growth in its undergraduate enrollment, with an estimated 370 students joining the College in fall 2018. The undergraduate enrollment numbers signify an 80% growth since fall 2016, and comprise more than 9% of incoming freshmen Drexel-wide and 46% if University-wide freshman class growth.

In September 2018, CCI launched a **comprehensive suite of graduate and professional development programs in one of tech's fastest growing areas: data science**. The College now offers a **Master of Science in Data Science** (online and on campus), **Post-Baccalaureate Certificates in Applied Data Science and Computational Data Science** (online and on campus), and **graduate minors in Applied Data Science and Computational Data Science**. CCI's graduate data science programs draw on the expertise of the College's world-class faculty, who bring a wide range of academic interests and industry experience to the classroom. The interdisciplinary format of CCI's new data science programs will also uniquely capitalize on the College's strength as one of the few institutions in the country housing both computing and information science under one roof.

CCI continues its commitment to increasing diversity and inclusion at Drexel through its **Women in Computing Initiative**, launched in fall 2017. This Initiative's overarching goal is to provide sustainable, scalable solutions to the tech gender gap. The Initiative has a **three-part strategy to ensure success and sustainability**: Focus on the recruitment and retention of women in CCI as a sustained college-wide priority, including financial investments and tailored programming; strengthen and sustain partnerships with targeted high schools and two-year colleges to expand awareness, enhance early stage training, and build a recruitment pipeline; and create overarching industry and donor partnerships to enhance large-scale mentorship networks and increase financial support. Towards the goal of increasing the overall enrollment of women students by 50% in five years, the Initiative is already seeing strong growth in the number of women applicants and accepted students in the incoming fall 2018 freshmen class. The Initiative has seen early success with an estimated **40% growth of women students over the past academic year**, and saw an **increase in percentage of women students from 15% to 19% in its incoming freshmen class**. As part of the initiative, CCI awarded 25 newly established scholarships to incoming women students.

Engaging Industry and Strengthening Partnerships

The **CCI Corporate Partners Program** (CPP), one of the most ambitious industry partnerships in Drexel University's history, celebrated its one-year anniversary in June 2018. Over the past year, the program has achieved tangible progress in expanding key relationships with top industry leaders in the region, such as hosting dozens of events and workshops for students and two well-attended career networking events, and establishing a professional staff director position to help facilitate the program.

The Corporate Partners Program aims to create a large scale, sustainable ecosystem for the development, recruitment and retention of top tech talent and serve as a top driver for tech talent in the Philadelphia region and beyond. In its first year, the Corporate Partners Program exceeded all initial targets to welcome more than 15 Partners from a significant cross section of major industries including healthcare, technology, financial services, and retail, among others.

CCI hosted a symposium for its **NSF Center for Visual and Decision Informatics (CVDI)** in March. **CVDI is the largest center of its kind in the U.S. and is the only such NSF Center in the nation that focuses on data science, big data analytics and visual analytics.** CVDI industry membership gives companies, organizations, and government agencies access to leading edge developments in visual and decision informatics. Drexel is one of the founding members of the Center, which now boasts five academic partners from around the world, more than 60 interdisciplinary faculty researchers, more than 20 industry partners, and major agency sponsors such as NSF and Business Finland.

Celebrating Faculty Achievements

Research by **Rachel Greenstadt, PhD,** an associate professor of computer science in the College of Computing & Informatics (CCI), was featured in **Wired magazine**. Greenstadt, along with **Aylin Caliskan**, Greenstadt's former PhD student and now an assistant professor at George Washington University, developed **a program that can identify anonymous computer coders by analyzing characteristics of their coding style**. Greenstadt and Caliskan presented their findings during a session at DEF CON 26, held in Las Vegas in August 2018.

Professor & Department of Information Science Head **Xia Lin, PhD** and **Alice B. Kroeger Professor Jane Greenberg, PhD** were awarded more than $300,000 from the **Institute of Museum and Library Services' Laura Bush 21st Century Librarian Program** for their project titled "LIS Education and Data Science-for-the National Digital Platform (LEADS-4-NDP)." Their project will develop the Library Education And Data Science (LEADS) program, a transformative doctoral training initiative grounded in library science foundations and integrating a new data science focus.

Department of Electrical, Computer, Software, and Systems Engineering
Embry-Riddle Aeronautical University
Daytona Beach, Florida
ecsse.net

Programs and Enrollment

Program	Fall 2018 (Δ)	Program	Fall 2018 (Δ)
BS Computer Engineering	53 (+5)	MS Cybersecurity Engineering	23 (+8)
BS Computer Science	58 (+1)	MS Electrical and Computer Engineering	25 (+9)
BS Electrical Engineering	77 (+10)	MS Software Engineering	19 (-3)
BS Software Engineering	72 (+15)	MS Systems Engineering	17 (-3)
Undergraduate	*260 (+31)*	MS Unmanned and Autonomous Systems Engineering	10 (-1)
		PhD in Electrical Engineering and Computer Science	16 (0)
		Graduate	*110 (+10)*

Points of Note

- ECSSE, pronounced "ecks-ee"
- PhD in EE&CS started fall 2015, now 16 students
- Ongoing search, multiple positions: cybersecurity, AI/ML, systems engineering
- Strategic research thrusts: Cybersecurity and assured systems engineering; modeling and simulation for aviation and aerospace; detect and avoid for unmanned systems
- Nineteen faculty members
- Faculty affiliated with ASSURE (FAA COE for UAS), TTHP (FAA COE for Technical Training and Human Performance), NEAR (Next-Generation Embry-Riddle Applied Research) Lab
- Hands-on undergraduate and masters programs; increasingly accurate approximation to engineering/computing practice
- Two-semester cross-disciplinary capstone (all ECSSE undergrad programs) uses Scrum, industry tools, for project development, management
- Near 100% placement
- Employers of program graduates: Amazon, Blue Origin, Boeing, Booz Allen Hamilton, Dassault Falcon, Deloitte, Garmin, GE Aviation, General Atomics, General Dynamics, Google, Harris, Insitu, Lockheed Martin, Microsoft, MITRE, NASA, Northrop Grumman, Qualcomm, Raytheon, Rockwell-Collins, Space X, Symantec, Textron, USAF, YouTube

Recent Grants and Contracts

- Barott, Passive Radar Performance in Uncertain Conditions, AFRL/Matrix Research, $498k, two years
- Butka et al., Multi-Domain Approach to Increased USV [Unmanned Surface Vehicle] Capability for Future Naval Missions, ONR, $900k, five years
- Jafer, ATC Scenario Training Technology, FAA Center of Excellence on Technical Training and Human Performance, $350k with $350k in-kind industry match (RTSync), 18 months
- Towhidnejad et al., Multi-level Model of Swarm Intelligence for Resilient Autonomous Systems, AFRL Information Directorate, $664k, two years
- Yuan and Seker, REU Site: Cybersecurity Research of Unmanned Aerial Vehicles, NSF, $288k, two years

Student Organizations and Activities

- Artificial Intelligence Club
- EcoCAR
- IEEE, HKN, WIE
- Robotics Association
- Tech Eagles (HackRiddle hackathon)
- UPE
- White Hat Eagles Cybersecurity Club

Computer Science
Emory University
http://cs.emory.edu

New faculty:

Nosayba El-Sayed
Lecturer
Systems & HPC
Joined Emory from MIT, UToronto

Notable honors:

Joyce Ho
Assistant Professor
NIH K01Career Award
KDD WS Best Paper 2018

Selected Highlights:

• Emory Team competes in the Amazon Conversational AI Challenge: a team of Emory CS students, advised by Prof Eugene Agichtein, are one of 8 teams worldwide competing for the Alexa Prize 2018.
• Best workshop paper award KDD-MLM 2018: PIVETed-Granite: Computational Phenotypes through Constrained Tensor Factorization, Prof Joyce Ho (Emory) and co-authors Henderson, Malin, Ghosh (UT).
• Best paper runner-up award IEEE MDM 2018: Privacy Preserving Reverse k-Nearest Neighbor Queries, Layla Pournajaf, Farnaz Tahmesebian, and Profs Li Xiong, Vaidy Sunderam, and Cyrus Shahabi (USC).
• Best paper honorable mention at WWW 2018: Did You Really Just Have a Heart Attack?: Towards Robust Detection of Personal Health Mentions in Social Media, by Payam Karisani and Prof Eugene Agichtein.
• Prof Avani Wildani gives invited lecture at ACM Tapia Celebration of Diversity in Computing conference
• Prof Eugene Agichtein receives 2018 SIGIR Test-of-Time award for pioneering paper on web search ranking and 2018 WSDM Test-of-Time award for work on finding high quality content in social media.

Research Awards and Honors:

• Prof Lars Ruthotto receives NSF CAREER award for "A Flexible Optimal Control Framework for Efficient Training of Deep Neural Networks".
• Profs Joyce Ho and Li Xiong receive NSF BIGDATA Graph Mining research grant.
• Profs Ymir Vigfusson, Lars Ruthotto, and Rebecca Mitchell receive CDC bioinformatics contract.
• Prof Avani Wildani receives NSF CRII grant for Workload Characterization project.
• Prof Jinho Choi receives multiple research awards and gifts from industry for NLP research.

Students and Education Programs:

• Robust interest continuing CS undergrad and grad courses: 1500 students enrolled, 200+ majors.
• Awarded 70 Bachelors, 12 Masters, and 6 Ph.D. degrees in 2018.
• Prof Davide Fossati innovates teaching CS1 in group format and flipped classroom.
• CS graduates joined leading universities and companies including Google, FB, Amazon, Microsoft.
• Department launches *"Towards Computing for All"* curricular and co-curricular initiatives.

Department News:

• CS continues to build on innovative and impactful research and teaching in Data Science and Systems
• New department of Computer Science approved by Emory Trustees, inaugurated September 1 2018

A few Emory CS research groups:

George Mason University
Department of Computer Science
http://cs.gmu.edu

Fast Facts:

- Number of faculty: 50 (41 tenure-track)
- Undergraduate student enrollment: 1611 (140% increase in the last 5 years)
- Graduate student enrollment: 130 (Ph.D. program), 335 (in four M.S programs)
- Research Expenditures (FY 18): $8.6M

Recent Tenure-track Faculty Hires:

- Foteini Baldimtsi, Ph.D. (Brown University), Postdoc (Boston University) – Area: Cryptography, Electronic cash, Bitcoin and blockchain technology
- Jonathan Bell, Ph.D. (Columbia University) – Area: Software engineering, Software systems
- Yue Cheng, Ph.D. (Virginia Tech) – Area: Distributed Systems, Storage Systems, Cloud Computing
- Dov Gordon, Ph.D. (University of Maryland), Postdoc (Columbia) – Area: Cryptography, Secure Computation
- Song Min Kim, Ph.D. (University of Minnesota) – Area: Wireless networks, Internet of Things
- Thomas LaToza, Ph.D. (Carnegie Mellon), Postdoc (UC Irvine) – Area: Software Engineering, Human-Computer Interaction
- Eric Osterweil, Ph.D. (UCLA): Area: Network Security
- Parth Pathak, Ph.D. (North Carolina State), Postdoc (UC Davis) – Area: Next-generation wireless networks, Cyber-physical systems
- Craig Yu, Ph.D. (UCLA) – Area: Computer Graphics, Virtual Reality

Summer 2018 undergraduate participants in the NSF REU site focused on Educational Data Mining

Recent Research Highlights:

- $7.4M IARPA award received by Gheorghe Tecuci for project "Co-Arg: Cogent Argumentation System with Crowd Elicitation"
- $4M DARPA award received by Angelos Stavrou for project "Democratizing DDoS Defenses Using Secure Indirection Networks"
- Google Computer Science Capacity award received by faculty team led by Jeff Offutt for project "SPARC: Self-Paced Learning Advances Retention and Capacity" to explore an alternative self- paced teaching model for introductory CS-1 and CS-2 programming courses
- Multi-disciplinary Center for Criminal Investigations and Network Analysis (CINA) established at GMU with funding from the Department of Homeland Security (DHS)
- NSF provides funding for REU site at GMU focused on educational datamining (PI: Huzefa Rangwala)
- Best paper awards received by faculty: Robert Simon (MILCOM 2017), Song Min Kim (ICDCS 2018), Alex Brodsky and Daniel Menasce (IFIP DSS 2018)

Georgetown University's Department of Computer Science offers BS/BA, MS and PhD programs. The CS faculty perform research in many areas including algorithms, artificial intelligence, bioinformatics, computer and network security, cryptography and privacy, database systems, data mining, distributed algorithms, human-computer interaction, information assurance, information retrieval, machine learning, networking, parallel algorithms, systems, theory, and visual analytics. Being in the heart of Washington, DC gives our students a strong quality of life and opportunities to engage in public and private sector internships, local computing groups, and regional events.

New tenured/tenure-track faculty in past 3 years:

Kobbi Nissim
McDevitt Term Chair
Cryptography, differential privacy, privacy law and policy

Nathan Schneider
Assistant Professor
Computational linguistics, natural language processing
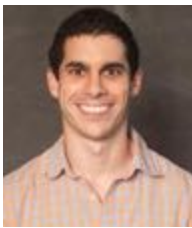
Justin Thaler
Assistant Professor
Algorithms for massive data sets, computational learning, verifiable computation

Nitin Vaidya
McDevitt Chair
Distributed computing, Fault-tolerance, Wireless networks

New teaching faculty in the past year:

Philip Buffum
Assistant Teaching Professor
Intelligent virtual agents, game-based learning, CS education

Raymond Essick
Lecturer
Switched and hybrid systems control, distributed semidefinite programming

Recent awards and recognitions:

Kobbi Nissim received the 2017 Gödel Prize, a prize for outstanding papers in the area of theoretical computer science.

Kobbi Nissim received the 2018 Test-of-Time Award and the 2016 Test-of-Time Award from the Theory of Cryptography Conference (TCC).

Ophir Frieder inducted into the European Academy of Sciences and Arts in 2018 and elected into 2018 class of Academia Europaea.

Andrew Yates, Arman Cohan and Nazli Goharian received the Best Long Paper Award at the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP).

Zhiwen Tang and Grace Hui Yang received Best Student Paper Award at the 2017 ACM International Conference on the Theory of Information Retrieval (ICTIR).

Justin Thaler received the 2016 Best Newcomer Paper Award, International Conference on Database Theory (ICDT).

Arman Cohan, Bart Desmet, Andrew Yates, Luca Soldaini, Sean MacAvaney and Nazli Goharian received the Area Chair Favorite honor at the 2018 International Conference on Computational Linguistics.

Tavish Vaidya, Yuankai Zhang, Micah Sherr, Clay Shields, Wenchao Zhou, and collaborators from UC Berkeley won the 2016 Best Paper Award at NYU Cyber Security Awareness Week Applied Research Competition (based on their USENIX Security 2016 paper).

Department highlights:

NSF *CAREER* award recipients: Micah Sherr, Grace Hui Yang, Wenchao Zhou.

Our PhD students are guaranteed 5 years of funding.

Computer science undergraduate class of 2018 graduated approximately equal numbers of women and men.

Our women coders group (guWeCode) focuses on building digital literacy and a community of women technologists across campus (over 900 members).

School of Computer Science

By the numbers:
- **40** professors
- **142** Ph.D. students
- **59** cybersecurity master's students

New Faculty Hires:

SCS has hired a record number of tenure-track assistant professors.

- **Joy Arulraj** combines data analytics, main memory systems, and machine learning to develop new database management systems.
- **Alexandros Daglis** studies computer architecture to target the most challenging communication-intensive services in datacenter environments.
- **David Devecsery** focuses on software systems and program analysis to create systems and tools for monitoring complex system behavior.
- **Paul Pearce** works on network security, specifically politically and economically motivated attacks, such as cybercrime, censorship, and advanced persistent threats.
- **Qirun Zhang** researches software engineering and programming languages, with an interest in improving software reliability and security.

Innovations

- Assistant Professor **Jacob Abernethy** used an active learning algorithm and data science to help replace service lines in the Flint Water Crisis.
- Assistant Professor **Richard Peng** and his students developed a faster algorithm for geometric 3-D truss linear equations, the first improvement for this class of problems since 1990.
- Professor **Santosh Vempala** helped discover a breakthrough theorem that makes progress toward the KLS conjecture.
- Cybersecuity researchers, including Professors **Wenke Lee, Alessandro Orso**, and Assistant Professor **Taesoo Kim**, have made many breakthroughs, such as a real-time Captcha technique and stronger forensics for cyberattacks.

Accolades

- New Associate Chair **Alexandra Boldyreva** co-chaired this year's largest cryptography conference, Crypto.
- SCS researchers teamed up with top South Korean hackers to win DEFCON's capture the flag competition.
- Professor and Institute for Information Security and Privacy Co-Director **Wenke Lee** was named an ACM Fellow.
- Ph.D. students **Ashish Bijlani** and **Ruian Duan** won the Atlanta Startup Battle and other funding for OSSPolice, a cloud-based tool for mobile app developers to easily and quickly identify OSS license violations and security vulnerabilities

Upcoming Research

- Professor **Constantine Dovrolis** is reapplying neuroscience to neural networks thanks to a $2 million grant from DARPA.
- Assistant Professor **Bill Harris**, Professors **Wenke Lee** and **Alessandro Orso**, Associate Professor **Santosh Pande,** and Assistant Professor **Taesoo Kim** were awarded $7.5 million from the Office of Naval Research to develop a customized attack-resistant software stack.
- Professors and CRNCH Co-Directors **Tom Conte** and **Vivek Sarkar** are part of a team working on a $4.5 million DARPA project to build a new programming system for software-defined hardware.

scs.gatech.edu

School of Computational Science and Engineering

New Faculty Hires:
• **Chao Zhang**: Assistant Professor joining the CSE after receiving his Ph.D. in computer science from University of Illinois at Urbana-Champaign.

Research Highlights:
• **D. Bader,** O. Green, DARPA, "SHARP: Software Toolkit for Accelerating GrapH AlgoRithms on HIVE Processors," Apr 2017-Oct 2021, **$6.8M**
• **D. Bader** (Co-PI), V. Sarkar, T. Conte, "DDARING: Dynamic Data-Aware Reconfiguration, INtegration and Generation," DARPA, Software Defined Hardware (SDH) Program, **$4.5M**
• **S. Aluru** (PI), W. Feng, K. Olukotun, P. Schnable, C. Sing, and J. Zola, "BIGDATA: Mid-Scale: DA: Collaborative Research: Genomes Galore - Core Techniques, Libraries, and Domain Specific Languages for High-Throughput DNA Sequencing," NSF/NIH Bigdata Initiative, **$2M**
• **R. Fujimoto** (PI), T. Blum, S. Kalidindi, W. Newstetter, and H. Zha, "Computation-Enabled Design and Manufacturing of High Performance Materials," National Science Foundation, **$2.8M**
• **J. Sun** (PI), "High-throughput Phenotyping on Electronic Health Records using Multi-Tensor Factorization." Smart Connect Health, National Science Foundation, **$2.1M**
• **P. Chau** (PI), Taesoo Kim, Le Song, and Wenke Lee, "SaTC: CORE: Medium: Understanding and Fortifying Machine Learning Based Security Analytics," National Science Foundation, **$1.2M**

Student Highlights:
• **CSE Student enrollment numbers for FY18:** 190 Master's Students, 71 Ph.D. Students

Organizational News:
• New Center: Center for Research into Novel Computing Hierarchies (CRNCH): Director Tom Conte (SCS), Associate Directors: **David Bader** (CSE), Rich DeMillo (C21U), Marilyn Wolf.

Other News:
• **The top school at the College of Computing for research expenditures per faculty** with an average of $620,000 per faculty and a total of $7.5 million last year.
• **Over 21 Pinnacle Projects** with approximately $67 million in active awards (FY 2018) across 76 active projects.
• **ACM Fellow:** Professor **Richard Fujimoto** earned the distinction of being named an Association for Computing Machinery fellow this year.
• **Strategic Partnership Program**: Entering its fourth year, the SPP program brings experts together to tackle industry's challenges regarding high-perforamnce computing, data science, machine learning, and more. Firms represented included Accenture, Booz Allen Hamilton, Ford Motors, IBM, Keysight Technology, LexisNexis, NVIDIA, Yahoo, National Security Agency, Oak Ridge National Laboratory, and Sandia National Laboratories.

cse.gatech.edu

School of Interactive Computing
@ICatGT

Student Highlights:
• **IC FY18 enrollment numbers:** 134 Ph.D. students, 107 Master's students; 185 total Ph.D. graduates to date

Organizational News:
• IC appointed Professor **Ayanna Howard**, also a CRA Board member, its new school chair. Her term of service began on Jan. 1, 2018.
• The Machine Learning Center at Georgia Tech, officially launched in 2016, has grown to over 100 affiliated faculty members from five Georgia Tech colleges. The Center is led by IC Professor **Irfan Essa.**

Other News:
• The School brought in $9.1 million in research awards in FY18, giving it nearly $60 million in total sponsored funding in its 12-year history.
• Professor **Tucker Balch** was tapped by the White House Office of Science and Technology Policy to advise the G7 on artificial intelligence policy.
• Professor **Charles Isbell** was appointed to the Computing Research Association Board of Directors and testified before the House Oversight Committee's Subcommittee on Information Technology about the national and global impact of AI.

New Faculty Hires:
• **Seth Hutchinson**, Professor, Robotics; joining IC after 27 years at the University of Illinois, Urbana-Champaign.
• **Sauvik Das**, Assistant Professor, HCI and Cybersecurity; joining IC after receiving his Ph.D. from Carnegie Mellon University.
• **Carl DiSalvo**, Associate Professor, Socially-Engaged Design and Civic Media; joining IC as joint appointment with Georgia Tech's School of Literature, Media, and Communication.
• **Matthew Gombolay**, Assistant Professor, Robotics, AI and HRI; joining IC after receiving his Ph.D. from MIT.
• **Zsolt Kira**, Assistant Professor, Machine Learning; joining IC after serving as senior research scientist at the Georgia Tech Research Institute.
• **HyunJoo Oh**, Assistant Professor, Computational Design; joining IC as a joint appointment with Georgia Tech's School of Industrial Design after receiving her Ph.D. from the University of Colorado, Boulder.

Research Highlights:
• **S. Chernova**, U.S. Army Research Laboratory, grant awarded to alliance headed by University of Pennsylvania and including Georgia Tech to develop methods of creating autonomous, intelligent, and resilient teams of robots, **$27M**
• **A. Endert, J. Stasko**, DARPA, User-Driven Model Steering and Curation via Inference from interaction and Model-Space Sampling, **$2.7M**
• **J. Rehg, A. Rozga**, National Institutes of Health, Data-driven Multidimensional Modeling of Nonverbal Communication in Typical and Atypical Development, **$1.7M**
• **B. DiSalvo**, National Institutes of Health, Hemonauts – Interactive Digital Media for Increased STEM Learning Among Chronically Ill Children and Their Support Networks, **$1.5M**
• **T. Balch**, National Science Foundation, Detecting Financial Market Manipulation: An Integrated Data- and Model-Driven Approach, **$1M**

Department of
Computer Science

CS.GSU.EDU

DEPARTMENTAL & UNIVERSITY HIGHLIGHTS:

- GSU ranks #2 for most innovative university (US News & World Report)
- GSU ranks #2 in undergraduate teaching (US News & World Report)
- CS Ph.D. program ranks among best in the Southeast (National Research Council)
- High ranking in multiple categories by PhDs.org
- Diverse undergraduate student body with 22% female population
- 29 Full-time faculty
- 6 NSF CAREER awards and 1 NSF CRII award

FACULTY HIGHLIGHTS:

- Rafal Angryk awarded NSF CIF21 DIBBs grant for Spatiotemporal Solar Astronomy Data, $1.5M
- Zhipeng Cai and Yingshu Li awarded NSF CyberTraining Collaborative Research grant for Mobile Security Education, $500K
- Robert Harrison awarded NIH grant for Inhibition of Resistant Variants of HIV Protease, $1.4M
- Yingshu Li and Zhipeng Cai awarded NSF Collaborative Reasearch grant on Dynamic Big Sensory Data in Smart Cities, $1.1M
- Sushil Prasad awarded NSF CNS Collaborative Research grant for Parallel and Distributed Computing curriculum development, $1.2M
- Robert Harrison won best paper award at NAFIPS (2017)
- Pavel Skums received the CDC National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention Honor Award
- Zhisheng Yan received the ACM SIGMM Award for Outstanding PhD Thesis in Multimedia Computing, Communications and Applications (2018)
- Zhisheng Yan won Best Demo Award at ACM HotMobile (2018)

UNDERGRADUATE ENROLLMENT DATA:
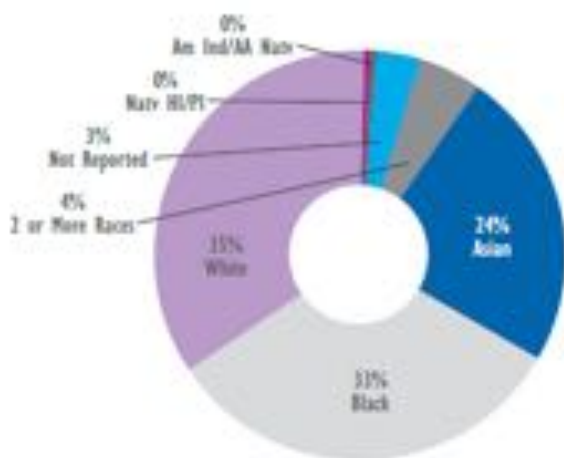
Enrollment Fall 2018

BS	1,792
MS	111
PhD	86

NEW FACUTLY HIRES

Wei Li
Secure Computing

Ashwin Ashok
Cyber-Physical Systems

Daniel Pimentel-Alarcón
Machine Learning

Juan Banda
Astroinformatics

Pavel Skums
Bioinformatics
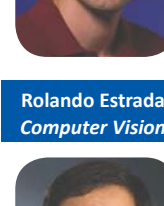
Rolando Estrada
Computer Vision

Yubao Wu
Big Data Analytics

Jonathan Shihao Ji
Machine Learning

Zhisheng Yan
Mobile Computing

Department of Computer Science
Illinois Institute of Technology
http://science.iit.edu/computer-science

New faculty/research staff hires:

Rujia Wang
Assistant Professor
Secure and reliable memory
architectures, system reliability
and high-performance computing

Ola Tannous
Senior Lecturer
Software engineering,
reliability analysis of warm
standby systems

Anita Nikolich
Visiting Fellow
Cybersecurity and privacy,
software defined networks,
blockchain and cryptocurrencies

Research Highlights:
- $8.4M in CS-lead grants/projects with 20 tenure-track faculty
- 83% of CS faculty are leading PI of funded research projects
- 6 NSF CAREER/DoD YIP Awardees

Other Highlights:
- 3 best paper awards
- Multiple sessions of Discovery Camp for Middle-School Girls to Learn to Program Robots
- CS Tech Programming Team Advances to World Finals
- CS student team ranked 6th in the Student Cluster Competition (SCC)
- 67% of CS Full Professors are Fellows of Professional Societies (IEEE/ACM/AAAS/etc.)

Student Numbers and Growth:
- Awarded 59 Bachelors, 362 Masters, and 8 Ph.Ds in 2018
- CS department has doubled the number of students in the last 5 years to approximately 1100 (15% of the total university enrollment)
- Master in Data Science program has grown to 84 students in its 4th year (Fall 2018)
- New Master of Science in Computational Decision Science and Operations Research has 11 students

Organizational News:
- University is committed to growth and investment of CS department and plans to increase the number of CS faculty by 50%
- CS department office space doubled since 2016
- $7.6 million gift by, Chris Gladvin, the founder of Cleversafe

IOWA STATE UNIVERSITY

Department of Computer Science
www.cs.iastate.edu

New Faculty Hires:

Myra Cohen, Professor, Lanh and Oanh Nguyen Endowed Chair of Software Engineering
Software Testing, Configurable Software/Software Product Lines, Search-based Software Engineering
Borzoo Bonakdarpour, Assistant Professor
Hybrid/Cyber-physical Systems, Formal Methods

Research and Scholarship Highlights:
- Faculty submitted grant proposals totaling over $38M in academic year 2017. Research awards during this time was nearly $5,000,000.
- Three of our faculty (Hridesh Rajan, Adisak Sukuk, Pavan Aduri) organized the second **Midwest Big Data Summer School for Early Career Researchers** held July 10-14, 2017 at ISU, and attended by 145 participants.
- Association for Computing Machinery recognized Professor Hridesh Rajan, Kingland Professor of Data Analytics, was recognized as a 2017 ACM Distinguished Member for his scientific contributions to computing.

Engagement and Outreach:
- Outreach Committee provided computational thinking workshops for over 300 K-12 students with industrial funding provided by Rockwell Collins.
- Associate Professor Soma Chaudhuri to serve as a member of the Iowa Governor's STEM Advisory Council Working Group Committee for STEM Support of Computer Science.
- The Computer Science Department hosted the regional competition for the ACM Inter Collegiate Programming Contest at Iowa State University.

Students and Department Growth, and Curricular Developments:
- Iowa State Computer Science ranked in the top 15% as the 35th best computer science department and the 3rd in best value.
- Undergraduate enrollment in Computer Science and Software Engineering is over 1,500 students, more than doubled in five years.
- Graduate enrollment in Computer Science reached nearly 200 students, almost doubling in 5 years, split evenly between M.S. and Ph.D. students.
- The department began to implement a multiple tracks curriculum for the undergraduate computer science degree. Track specializations include Computer Gaming, Software Systems, and Bioinformatics and Computational Biology.
- ISU Computer Science is a core department in the new Data Science degree approved at ISU.

NEW FACULTY HIRES:
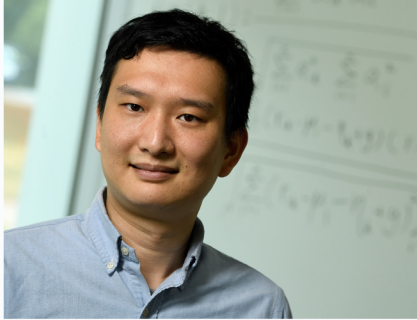
Yinzhi Cao, Assistant Professor (August 2018) *Web Security, Network Security, Mobile Security*

Soudeh Ghorbani, Assistant Professor (July 2018) *Systems and Networking, Algorithms and Theory*

Ali Darvish, Lecturer (August 2018) *Software Engineering, Software Testing, Computer Science Education*

OTHER HIGHLIGHTS:

- Randal Burns named interim chair of Computer Science Department
- Steven Salzberg elected to American Academy of Arts and Sciences
- Xin Jin received Facebook Communications & Networking research award

- Suchi Saria named a 2018 Sloan Research Fellow
- Gregory Hager named a Fellow of the Association for Computing Machinery
- Benjamin Langmead received the William H. Huggins Award Excellence in Teaching Award and the Joel Dean Excellence in Teaching Award

STUDENT NUMBERS AND GROWTH:

109 Bachelors

76 Masters

22 Ph.D. degrees

444 Undergraduates, up 10% from last year

173 Students currently enrolled in CS PhD program

138 Students enrolled in the CS Master's program

175+ Students enrolled in CS affiliated master's programs in Security Informatics and Robotics

31 Tenure Track Faculty

3 Teaching faculty

5 Research faculty

10 Research scientists and postdocs

DEPARTMENT MILESTONE:

- The CS Department made history by graduating its largest class to date! Forty-seven percent of the class earned departmental honors.

JOHNS HOPKINS WHITING SCHOOL *of* ENGINEERING | Computer Science

Programs and Enrollment

The KAIST School of Computing is the largest and leading institute for computer science in Korea and offers specialized programs including the Information Security Program, the Web Science Technology and the Software Graduate Program. The School comprises about one thousand students and 50 faculty members. To date, the School has produced approximately 1,800 bachelors, 2,600 masters, and 800 Ph.D.s.

New Faculty Hires
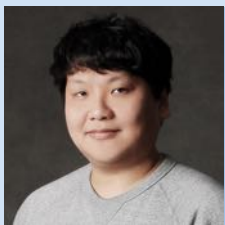
machine learning, computer vision

Sung Ju Hwang

operating systems, system security

Youngjin Kwon

programming languages

Hongseok Yang

security, privacy

Sooel Son

Awards and Honors

• Professor **Otfried Cheong** was named an ACM Distinguished Scientist in 2017.
• Professor **Kwangjo Kim** was named a Fellow of International Association for Cryptologic Research (IACR) in 2017.
• Professor **Sung-Eui Yoon** won the Best Paper in Robotic Planning award at ICAR 2017.
• Professor **Shin Yoo** won the 2017 Human Competitiveness Award (Humies) Silver Award at the Genetic and Evolutionary Computation Conference (GECCO) held by ACM SIGEVO.

Research Highlights

• Professor **Insik Shin** introduced a novel mobile platform that allows multiple smart devices to easily share their various functionalities without modifying applications, presented at MobiSys 2017.
• Professor **Jaehyuk Huh** developed a new translation architecture, hybrid coalescing, which is a new and efficient way of storing complex mapping information between the flat virtual space and heterogeneous physical memory space, presented at ISCA 2017.
• Profesor **Min H. Kim** has devised a method of low-cost accurate hyperspectral imaging, ridding the process of the need for expensive equipment and complex coding, presented at ACM SIGGRAPH Asia 2017.
• Professor **Juho Kim** presented two user studies that explore instructor and learner perceptions of in-video prompting where learners answer reflective questions while watching videos, presented at ACM CHI 2018.

Student Highlights

• Ph.D. students, Seung-Hwan Baek and Chang Hyun Park, received the 2017 Microsoft Research Asia Fellowship Award.
• A Ph.D. student, Sangeun Oh, was awarded the 2017 Google Ph.D. Fellowship in the area of Mobile Computing.
• Undergraduate students, Jihoon Ko, Hanpil Kang, and Jongwon Lee, received the Bronze medal and the First Problem Solver Award in the 41st ACM ICPC World Finals.

COMPUTER SCIENCE AT KANSAS STATE UNIVERSITY

2017-2018

Research

Our Four Core Focus Areas:

Cybersecurity

Cyberphysical Systems

High Assurance Software

Data Science

Expenditures: $2.3M

Newly Awarded Grants: $5.7M

Students

Degrees Awarded:

98 Undergraduates

23 Masters

2 PhD

Number of Students:

588 Undergraduates

38 Masters

43 PhD

Other Facts:

83.9%
Freshman to Sophomore retention rate

400%
5 year growth in female students

97%
5 year Growth in Students

26%
5 year growth in PhD students

Faculty

Stats:

16 Tenure Track

5 Instructional

2 Endowed Positions

7 NSF Career Awards

1 ONR Young Investigator Award

Keystone Scholars Award:

Doina Caragea

Cornelia Caragea

George Amariucai

Arslan Munir

New Endowed Positions:

Cornelia Caragea
Lloyd T. Smith Creativity in Engineering Chair

Pavithra Prabhakar
Peggy and Gary Edwards Chair in Engineering

State-of-the-Art Facilities

New Facilities:

2016
New buildings, labs, classrooms, and offices

2017
New Data Science Center

2018
New robotics Laboratory

Kean University | School of Computer Science

Research and Mentoring Highlights

- **Dr. Jenny Li** received a 2018 NCWIT's Undergraduate Faculty Mentoring Award.
- **Dr. Austin Huang** received a 2018 NJ/NY Computer Science Chairs award for Excellence in Undergraduate Education.

Faculty Distinctions

- **Prof. Mayra Bachrach** was awarded funding from the 2018 Google Computer Science Professional Development Program; to continue outreach to middle school teachers in the region, preparing them to provide computer science education to their students.
- **Dr. Kazi Zunnurhain** was awarded a Google Cloud Platform Education grant; to teach courses using virtual machines launched in the Google app engine.

Student Highlights & Distinctions

- Student awards this year included Grace Hopper Celebration Scholarships & Tapia Conference Scholarships.
- Our students have landed numerous internship/co-ops opportunities throughout the academic year, such as the NJ State Police, Harris Corporation, Express Scripts, and the NBA, and other employers.
- 2018 post-graduation placement includes BNY Mellon, Fidelity Investments, NJ Cybersecurity Cell, Express Scripts, and Tata Consulting Services.
- **Kingberli Capellan (CS'19)** was awarded a Scholarship for Women Studying in Information Security (SWSIS) by Applied Computer Security Associates (ACSA) and CRA-W.

New Faculty

Dr. Canan Eren
PhD., City University of New York
Health IT, Database Systems

Dr. Jean Chu
PhD., Pace University
Cloud Systems,
Software Engineering
Previous Affiliation: IBM

Program by the Numbers

- **Faculty:** 8-tenure-track, 4-teaching, 25-affiliated/associated.
- 50% of our faculty members are female.
- **Students:** 50+ - students in MS program, 600+ CS/IT majors
- **22%** of our students identify as African-American and **30%** identify as Latino/a.
- **25%** increase in female major enrollment over the last 2 years.

New Educational Programs

- Two new undergraduate majors offered: B.S in Computer Science (Cybersecurity) and B.S in Information Technology (Cybersecurity), a response to industry trends and student demand.
- Three new minors have been added: Health Information Technology, Cybersecurity, and Computer Science Education.
- Our Computer Science education minor is the first CS Education minor in NJ and one of the few in the USA, which addresses the shortage of CS teachers in K-12 education.
- A co-op program for CS/IT students is also available; where students gain 6-12 months of industry experience while obtaining their undergraduate degrees.

Organizational News

- HackKean, our student-led outreach event, will be celebrating its 5th year in April 2019!
- Kean University School of Computer Science is now an Associate Member of the Computing Alliance for Hispanic Serving Institutions (CAHSI).
- Our CS/IT program continues to grow! In the last 5 years, we have grown on average 13% each year across all ranks.

Department of Computer Science and Engineering
Lehigh University

http://www.cse.lehigh.edu

A New Home
- The CSE department has completed its relocation to a purpose-designed facility with collaboration spaces, more faculty offices, and improved graduate research labs.

Our Department is Hiring!
- We hired two new Professors of Practice. Welcome Prof. Arielle Carr and Prof. Mark Erle.
- We welcome candidates at all ranks, with expertise in all research areas, to apply to multiple tenure-track positions in the CSE Department.
- The Lehigh University P.C. Rossin College of Engineering and Applied Science created three interdisciplinary research institutes: Data, Intelligent Systems, and Computation; Cyber Physical Infrastructure and Energy; and Functional Materials and Devices. There are multiple additional tenure-track positions available for Computer Science candidates via interdisciplinary searches.

Research Highlights:
- Prof. Ting Wang's paper "Backdoor Attacks against Learning Systems" received the Best Paper award at CNS 2017, and Prof. Roberto Palmieri's paper "Lerna: Parallelizing Dependent Loops Using Speculation" received the Best Paper award at SYSTOR 2018.
- The department received $3M+ in new research funding, including support from NSF and ONR. Funded research topics include Adaptive Autonomous Agents, Interactive Learning Algorithms, Autonomous Robots, Privacy from Data Mining Algorithms, Data Structures for NUMA Architectures, Network Bottlenecks in Cyber-Physical Systems, and Dataset Search.
- Prof. Brian Davison was program co-chair for the 41st International ACM SIGIR Conference, and Prof. Liang Cheng was program co-chair for the 1st International Workshop on Blockchain for the Internet of Things.
- Prof. Eric Baumer's research into Socioeconomic Inequalities in Facebook Use received significant national media attention.

Other Highlights:
- Lehigh is now a BRAID (Anita Borg Building Recruiting And Inclusion for Diversity Initiative) Affiliate.
- Our new NSF REU site on Intelligent and Scalable Systems hosted eight students this summer. Please encourage your undergraduates to apply for 2019!
- More than 7% of the Lehigh undergraduate student body took an introductory course in Computer Science this year, and the department launched a new Data Science Minor.
- Prof. Daniel Lopresti, a CCC Executive Committee member, will serve a second term on the CRA CCC, where he co-chairs the Intelligent Infrastructure Task Force and serves on the Cybersecurity and Cybercrime Task Force.

Loyola University Chicago Computer Science

http://cs.luc.edu
@LoyolaChicagoCS
facebook.com/Loyola
ChicagoCS

New Faculty

Eric Chan-Tin
(started 2018)
Cybersecurity

Dmitriy Dligach
(started 2016)
ML, NLP

Channah Naiman
(started 2015)
Data Mining

Heather Wheeler
(started 2015)
Bioinformatics

Department growth

⬆ **116%** ⬆

Increase in undergraduate student CS course enrollment in the past decade.

And building on that growth

Cybersecurity
New Degree Program
Fall 2018

In addition to Computer Science (BS, MS, MS+Thesis), Software Engineering (BS, MS), Information Technology (BS, BA, MS), and Digital Humanities (MS)

Doyle Hall
Our department has relocated onto the Lake Shore Campus. Open since August 2017
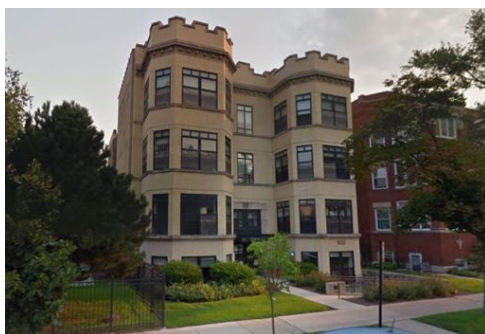
Most Recent Faculty awards and recognition

Catherine Putonti, CRA undergraduate research faculty mentoring award and an NSF award ($676,000) for *Deciphering the genetic diversity of viruses through gene networks*

Heather Wheeler awarded 2018 Sujack Research award and an NIH R15 grant ($429,000) for *Predicting gene regulation across populations to understand mechanisms underlying complex traits*

Ron Greenberg and George K. Thiruvathukal, NSF Collaborative research grant ($72,000) *Chicago Alliance for Equity in Computer Science (CAFECS)*

George K. Thiruvathukal leads the IEEE initiative in Broadening participation and the IEEE RESPECT conference, and is co-PI with Greg Matthews, NSF Collaborative research grant ($75,000) *Statistical Analysis of Partially Observed Shapes in Two Dimensions*

Mark V. Albert, Rehabilitation Engineering Research Center (RERC) subcontract ($97,000) through the Shirley Ryan AbilityLab for *Fall Catcher: Wearable Airbag Technology to Mitigate Falls in Individuals with Stroke*

Student awards

John O'Sullivan on winning team in IBM Unchain the Frame global hackathon ($15,000 prize)

Nathnael Alemu (BS 2017), Illinois Technology Foundation Fifty for the Future awardee

Department project presentation awards:
Nieky Allen for Volt Compiler (Spring 2018)
Jesse Meza & Samuel Habte for MixJIT (Spring 2018)
John O'Sullivan & Catherine Litten for MiHome (Fall 2017)
Percy Soliz & Pinky Sindhu for QHIPA (Fall 2017)

Student theses:
Using Natural Language Processing and Machine Learning for the identification of alcohol misuse in trauma patients (Andrew Phillips, Aug 2018)

Toddler Activity Recognition using Machine Learning (Pinky Sindhu, Aug 2018)

A mobile app demonstrating sensory neural codes through an efficient coding of collected images and sounds (Anne Zhao, Aug 2017)

Real-time fall detection and response on mobile phones using machine learning (Ilona Shparii, Aug 2017)

Faculty affiliations

STRITCH SCHOOL of MEDICINE
Boston Children's Hospital — Until every child is well
Argonne NATIONAL LABORATORY
Northwestern University
Shirley Ryan AbilityLab

Computer Science at MIT

MIT EECS ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

SuperUROP scholars shared research results in fall and spring poster sessions. Photo: Gretchen Ertl

New Interdisciplinary Majors

- **Computer Science, Economics, and Data Science:** New EECS/Economics joint major was launched in September 2017; 70 students are enrolled for 2018-2019.

- **Urban Science and Planning with Computer Science:** New EECS/Urban Studies and Planning joint major was launched in September 2018.

New and Ongoing Initiatives

- **The Quest for Intelligence:** In early 2018, EECS Professor Antonio Torralba was tapped to head this campus-wide initiative on human and machine intelligence; EECS Professors Daniela Rus and Leslie Kaelbling were appointed to key leadership roles.

- **Advanced Undergraduate Research Opportunities Program (SuperUROP):** Nearly 150 MIT students enrolled in this EECS-hosted one-year research program for 2018-2019.

- **Rising Stars in EECS:** This academic-careers workshop returns to MIT in October 2018, bringing together 76 top women postdocs and graduate students.

Computer Science and Artificial Intelligence Lab

- New CSAIL research initiatives include Trustworthy AI, Systems That Learn, Fintech.

- CSAIL hosted first AI and the Future of Work symposium, 2017; second to be held late 2018.

- CSAIL also launched the Hot Topics in Computing Discussion Forum.

CSAIL

Recent Hires

- **Associate Professor:** Tim Kraska, PhD, ETH Zurich

- **Assistant Professors:**
  - Song Han, PhD, Stanford
  - Phillip Isola, PhD, MIT
  - Kevin O'Brien, PhD, UC Berkeley
  - Arvind Satyanarayan, PhD, Stanford
  - Julian Shun, PhD, Carnegie Mellon
  - Suvrit Sra, PhD, University of Texas-Austin

Recent Faculty Awards

- **ACM Fellows:** Shafi Goldwasser, Tomas Lozano-Perez, Silvio Micali

- **ACM Prize in Computing:** Dina Katabi

- **BBVA Foundation Frontiers of Knowledge:** Shafi Goldwasser, Silvio Micali, Ron Rivest

- **EATCS Presburger Award for Young Scientists:** Aleksander Madry

- **IEEE Computer Society Pioneer Award:** Barbara Liskov

- **IEEE Robotics & Automation Society Pioneer Award:** Daniela Rus

- **ACM Doctoral Dissertation Award, Honorable Mention:** Stefanie Mueller

- **International Mathematical Union Rolf Nevanlinna Prize:** Constantinos Daskalakis

- **MacArthur Fellowship:** Regina Barzilay

- **NSF CAREER Awards:** Mohammad Alizadeh, Tamara Broderick, Michael Carbin

- **Sloan Research Fellowships:** Tamara Broderick, Stefanie Jegelka

Recent Ranking Highlights

#1, Computer Science/Information Systems, QS World University Rankings, June 2018

#2, Computer Engineering, U.S. News, September 2018

Gianforte School of Computing

Montana State University

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

New Faculty in 2018-2019

- Veronika Strnadova-Neeley, Assistant Professor (scalable clustering algorithms, graph algorithms, scientific computing)
- Sean Yaw, Assistant Professor (network optimization, cloud resource management, theory, smart grid, 3D geospatial data analysis)
- Dan DeFrance, Instructor

Likely Faculty Opportunities for 2019-2020, https://www.cs.montana.edu/opportunities.html

- One Assistant or Associate Professor
- One Instructor or Assistant Teaching Professor

Research Highlights

- Brendan Mumey (PI) and Indika Kahanda (co-PI) received a three year, $379K NSF Innovation grant entitled *Pioneering New Approaches to Explore Pangenomic Space at Scale*.
- Clem Izurieta (PI) and John Sheppard (PI) received a one-year, $500K Wright Patterson Air Force grant entitled *Software Quality Analysis of Army Construction Engineering* and *TSEAL AF 2*.
- John Sheppard (co-PI) with Joe Shaw (PI) received a one-year, $585K Intel grant entitled *Hyperspectral Imaging and Spatial Learning for Produce Monitoring*.
- Binhai Zhu (PI) received a one-year, $34K NSF sub-contract grant entitled *Intelligent Information Dissemination in Vehicular Networks Based on Social Computing*.

Student Numbers and Growth

- 508 majors, 25 M.S. students, 19 Ph.D. students in Fall 2017
- 493 majors, 26 M.S. students, 20 Ph.D. students in Fall 2016
- Awarded 3 Ph.D. degrees, 16 M.S. degrees and 61 B.S. degrees in AY 2017-2018

Organizational News

- A Computer Science B.A. degree becomes available to students in Fall Semester 2018
- Brittany Fasy received the College of Engineering's Excellence in Outreach Award.
- John Paxton received the College of Engineering's Excellence in Advancing Diversity Award.
- Graduated Ph.D. student Shane Strasser and John Sheppard co-authored a paper that received the Walter E. Peterson Best Paper Award at IEEE AUTOTESTCON 2017.

Department of Computer Science
Mount Holyoke College
https://www.mtholyoke.edu/acad/computerscience

Highlights

- **Daniel Sheldon** received a $550,000 faculty early career development (**CAREER**) grant from the National Science Foundation (NSF) to design and test new mathematical approaches and algorithms to help ecologists and other scientists better use large data sets generated by citizen science projects, animal tracking devices and earth observation instruments, among other goals.

- **Heather Pon-Barry** published several papers including *Automated Pitch Convergence Improves Learning in a Social, Teachable Robot for Middle School Mathematics* (with N. Lubold, E. Walker, and A. Ogan). In Proceedings of the International Conference on Artificial Intelligence in Education, London, UK, June 2018.

- **Peter Klemper** published several papers including, *High-Performance Memory Snapshotting for Real-Time, Consistent, Hypervisor-Based Monitors*, (with H. Y. Jeon, B. D. Payne and J. C. Hoe) in IEEE Transactions on Dependable and Secure Computing.

- **Eitan Mendelowitz** was part of the *One Antartic Night: Instrument* project which allows users/participants to collaboratively explore astronomical data in virtual reality. This project was shown at the SIGGRAPH 2018 art show.

- **Barbara Lerner** had several publications and posters related to her work, collaborative with Harvard University and Harvard Forest, to develop support for collecting provenance during scientific data analysis. These included *Using Introspection to Collect Provenance in R* (with Emery Boose and Luis Perez) Informatics 2018, 5, 12. Barbara was also invited to participate in the week-long Dagstuhl seminar entitled Towards Accountable Systems, May 2018.

Student Numbers and Growth

- **Awarded 48 Bachelors in 2018, a 65% increase over 2017**
- Expect to award 57 Bachelors in 2019
- 1 student completed an honors thesis and graduated *summa cum laude*

Department of Computer Science
National University of Singapore

Recent faculty hires:

CHEN Tsuhan
Computer Vision and Pattern Recognition; Multimedia Coding and Retrieval; Biometric Authentication

XIAO Xiaokui
Algorithms for large data, data privacy, and data analytics

HAN Jun
Sesning systems security, embedded systems, vehicular and wireless security, Sensor-Actuator networks in IoT/CPS

Djordje JEVDJIC
Memory and Storage Systems, Approximate Computing, DNA-Based Data Storage, Systems for Machine Learning, 3D-Integrated Circuits

Kuldeep MEEL
Constrained Sampling and Counting, AI, Knowledge Representation and Reasoning, Formal Methods, Interpretable Models

Jonathan SCARLETT
Information-Theoretic Limits Of Data Science Problems, Rigorous Inference, Learning, And Optimization Algorithms

Research Highlights:

- In a world first, Wynne Hsu and Mong-Li Lee (and team) developed AI system that detects 3 major eye conditions - diabetic retinopathy, glaucoma, age-related macular degeneration.
- Test of Time Award: Prof Peh Li-Shiuan and colleagues received the 2017 ACM SIGMOBILE Test of Time award; Terence Sim won the Test of Time Award at FG 2017.
- Best Papers/Awards: Bingsheng He received the IEEE/ACM William J. Maccalla ICCAD Best Paper (Front End) Award at ICCAD'18; Wee Kheng Leow and Terence Sim won the Best Paper award in CAIP'17; Roger Zimmermann and Abdelhak Bentaleb awarded Excellence in DASH award at ACM MMSys'18; Abdelhak Bentaleb also received the Best Student Paper award at ACM MMSys'18 and First Prize award in IEEE ICME 2018 Grand Challenges competition.

Other Highlights:

- David Hsu elected IEEE Fellow.
- David Rosenblum was conferred the ACM SIGSOFT Distinguished Service Award.
- Beng Chin Ooi received an IBM 2017 Faculty Award.
- Beng Chin Ooi is the founding Editor-in-Chief of the ACM Transactions on Data Science.
- Hwee Tou Ng has been appointed as the editor-in-chief for the journal Computational Linguistics for a 5-year term.
- Tulika Mitra has been selected for the IEEE Distinguished Visitor Program. She also joins the ACM Publications Board New Publications Committee.
- Prof Min-Yen Kan has been appointed to the ACM Distinguished Speakers Programme.
- Yuen Jien Soo was awarded the University Awards 2018 Outstanding Educator Award.
- Roger Zimmermann received the IEEE Communications Society (IEEE ComSoc) Multimedia Communications Technical Committee (MMTC) Best Editor Award.

Entrepreneurial News:

- Zilliqa, a spun-off from our SoC staff and alumni has successfully raised about US$22 million. Zilliqa hit its billion-dollar market cap in May 2018, a little under a year since its founding.
- Dexecure, a software startup started by NUS Computing alumnus Inian Parameshwaran, announced that it has raised S$1million seed funding.

Organizational News:

- The School celebrates its 20th year anniversary as a School, and 43 years as NUS Computing.
- SoC Computing for Voluntary Welfare Organisations (CVWO) celebrated its 10th anniversary. CVWO partners NUS Computing undergraduates with Voluntary Welfare Organisations (VWOs) to serve the community through the development of IT systems.
- SoC Professors helm numerous new research centers totalling SGD50M: NUS AI centre in Suzhou, China; NUS Centre for Research in Privacy Technologies (N-CRiPT); National Satellite of Excellence in Trustworthy Systems; AI- and Data-driven Financial Management and Analytics.

Department of Computer Science

Naval Postgraduate School
Monterey, California
my.nps.edu/web/cs

Our Mission

We offer graduate level computer science education and research to support the combat effectiveness of the US Navy.

Our Students

Our students are primarily US military officers with 5-10 years experience who have been selected for graduate education in computing. We graduate 50-60 students annually, with around 100 on board at any time, including international students from several countries. Our students are highly disciplined, hard-working, and enthusiastic. They bring a strong dose of pragmatism, seeking to bring theory and practice together in their masters theses.

Our Faculty

We have 18 tenure track faculty, 4 lecturers, and about a dozen research faculty.

Our Curricula

We offer masters and PhD degrees in Computer Science. Our two-year masters curriculum requires every student to complete a thesis. Our specialty areas are: Artificial Intelligence, Cyber Security, Data Science, Mobile Computing, Modeling and Simulations, Networking, and Software Engineering. We also offer 3- and 4-course graduate certificates, both locally and remotely, in Cyber Security and Data Science.

Our Research

We examine hard national security problems, developing theories for general solutions and prototypes that demonstrate feasibility. Cyber security is a top priority; we specialize in architectures that are demonstrably secure and implementable in the Cloud and also on cryptographic protocols and advanced architectures such as quantum computing. Networking is another priority; we focus on design, characterization, measurement, and validation of communication protocols for tactical networks, unmanned systems, self-organized mobile networks, software-defined data centers, and the Internet. Autonomous, robotic, and deep learning systems are still another priority; we search for safe and reliable self-learning systems.

Much of our research is multidisciplinary, involving students and faculty from mathematics, operations research, electrical engineering, mechanical engineering, and physics. Our research environment is unique in its blend of theory and practice, and with students' determination to put their thesis results into practice. Many student theses have led to publications in major conferences and frequent best-paper awards.

Department of Computer Science

New Mexico State University

https://www.cs.nmsu.edu/

William Hamilton
Recently joined
PhD, Texas A&M
HCI: Live Media Design, Online Communities, Online Education, Video Gaming.

Zachary O. Toups
Promoted to Associate Professor
HCI: Zero-fidelity Simulation, User Interface Design, Game Design, Mixed Reality, Wearable Computing.

Faculty and Students

- 14 full-time faculty members: 5 professors, 1 college professor, 4 associate professors, 3 assistant professors, 1 college assistant professor.
- Two new faculty searches for assistant professors are underway.
- 305 undergraduate students, 33 MS students, 36 PhD students.

New Funding Highlights

- $6.7M for research on interdisciplinary smart grid distribution feeder microgrid research (Enrico Pontelli, Huiping Cao, Satyajayant Misra, Son Tran).
- $300K for ICN investigation (Satyajayant Misra).
- $814,942 for the development of data science algorithms to discover biological patterns in mammalian gene networks (Joe Song).
- $174,200 for automated proof generation and verification for attribute-based cryptosystems (Roopa Vishwanathan).
- $374,000 for the development of a nearly autonomous management and control system for advanced reactors (Son Tran)
- $198,000 for preference elicitation and device scheduling for smart homes (Son Tran).

New Education Initiatives

- $1.3M as the lead institution for the southwest region of the NSF CAHSI INCLUDES alliance (Enrico Pontelli).
- $3.9M for S-STEM education from NSF (Huiping Cao and Enrico Pontelli).

Research Highlights

- Joe Song was awarded a Fulbright Scholar to visit Charles University in Prague, Spring 2019.
- Faculty in CS@NMSU continue to publish research papers in highly reputed conferences and journals ACM CHI, CHI PLAY, SECRYPT, AAMAS, IJCAI, ICAPS, CIKM, ICDM, TPLP, IEEE *Comm. on Surveys and Tutorials* and *Trans. on Dependable and Secure Computing*.

Other Highlights

The department is dedicated to a diverse and inclusive environment for research and learning. It has over 20% female students, and over 30% Hispanic students. In 2018, CS@NMSU hosts several STEM outreach events that reach more than 3500 K1-12 students in Southern New Mexico.

https://engineering.nyu.edu/academics/departments/computer-science-and-engineering

Faculty: 22 TT/T Faculty
(Incl. 4 joint faculty with NYU Shanghai, CDS, Steinhardt, Global Public Health)
11 Clinical/contract faculty
10 Adjuncts teaching any semester
10 affiliated/associated faculty

Distinctions: 2 Sloan, 2 ACM, 3 IEEE, 1 SPIE, 1 AIMBE, 1 Fullbright, 7 CAREER/PYI

Research: Major research areas: Cyber Security, Data Science, Theory & Algorithms, Information Visualization, Geometric and Urban Computing, Image Analysis
FY2017/18: 8.2m research expenses

Students: 845 majors (680 CSE, 165 CompE jointly with ECE)
100+ minors
820 students in two M.S. programs (CS, cybersecurity)
(incl. 100+ students in online program)
70+ PhD students

New TT Faculty Hires:

Julia Stoyanovich,
PhD: Columbia Univ.,
previous affiliation: Drexel
Research Areas:
Responsible Data
Management, Data Ethics,
Joined in Fall 2018

Christopher Musco,
PhD: MIT,
Research Areas:
ML, Algorithms,
Numerical Linear
Algebra,
Will join Fall 2019

Highlights AY 2017/18:

- Incoming undergraduate class of F2018 includes 43% women, up from 37% in 2017
- CCS runs largest Cyber Security competition event in the world – CSAW
- Tandon NYU Bridge Program (Professor Nasir Memon): Online program to give individuals lacking a background in science or engineering a gateway into one of our select master's degree programs
- Professor Claudio Silva receives Emmy award for MLB Visual Analytics Tool
- Professor Juliana Freire First Woman Elected as Chair of ACM SIGMOD
- Professor Juliana Freire joined CRA Computing Community Consortium (CCC)

Research Highlights:

- Active research of ~ $46M with ~$18M in expenditures in 2017-18
- K. Stolee receives NSF CAREER Award, becoming department's 29th CAREER winner
- NC State has again been awarded a Science of Security Lablet by the National Security Agency (NSA) to continue its work in developing the cybersecurity and privacy breakthroughs needed to safeguard cyberspace
- Designated by NSA and DHS as a National Center of Excellence in Information Assurance Research (CAE-R)
- Home of world-renowned Center for Educational Informatics with > $8M funding
- Partnering with the University of Maryland Baltimore County (lead institution), Rutgers University New Brunswick, Rutgers University Newark and a diverse group of industry partners on the new Center for Accelerated Real Time Analytics (CARTA)
- NC State ranks #2 in the world in publishing at conferences and journals dedicated to games and interactive entertainment computing research
- Launched DeepGen, a cooperative agreement between the Army Research Laboratory and computer science researchers at NC State University, which aims to develop a program for generating customizable virtual training scenarios
- Developed an AI game-playing program that exhibits social reasoning and "intentionality"

Dr. Gregg Rothermel
New Department Head
Effective November 1, 2018

Organizational News:

- Undergraduate female enrollment up 80% in last decade, 164 accepted females in fall 2018, up 48%
- Launching joint MS in Foundations of Data Science with Math and Statistics departments
- NC State ranks #1 in the nation in number of female tenure-track/tenured faculty in Departments of Computer Science in Colleges of Engineering!
- *Princeton Review* ranks gaming program #7 among public universities; #38 overall
- *USN&WR* ranks Online Computer Science & Networking Programs #4 in nation
- *USN&WR* ranks department #25 nationally among public universities

Partnerships in Action:

- ePartners Program boasts >100 corporate partners generating >$1M annually in cash support & faculty awards
- Named sponsors of the Grace Hopper and Tapia conferences
- NC State named the first university in North America to establish an IBM Q Hub as part of the global IBM Q Network in quantum computing

1st N.A. University w/ IBM Q Hub
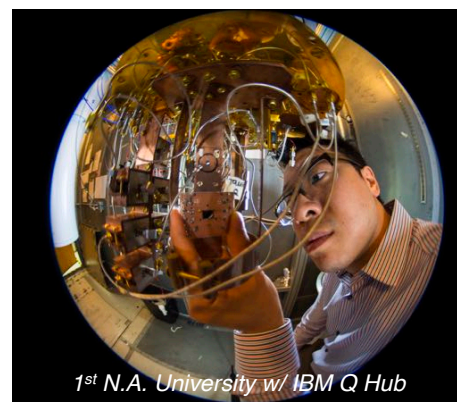
Special Awards for 2017-18:

- L. Williams named a Distinguished professor and honored as IEEE Fellow
- M. Chi awarded Alcoa Foundation Research Award
- G. Rouskas named Alumni Distinguished Graduate Professor
- S. Heckman named Alumni Distinguished Undergraduate Professor
- D. Bitzer inducted into National Inventors Hall of Fame

Student Enrollment (Fall 2018):

- Undergraduate   1,148
- Masters   519
- PhD   199
                     Total   1,866

- Accepted Fall 2018 Undergrads strongest class ever with avg weighted GPA of 4.67 and avg SAT of 1419 (R&M)

May 2018 Avg Salaries - $72K BS / $110K MS

#1 in Tenure-track Female Faculty

Northeastern University
College of Computer and Information Science

2018-2019

Lawson Wong
ASSISTANT PROFESSOR
PhD, Massachusetts Institute of Technology

Paul Hand
ASSOCIATE PROFESSOR
PhD, New York University

Predrag Radivojac
PROFESSOR
PhD, Temple University
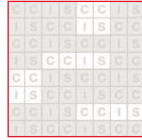
Don Fallis
PROFESSOR
PhD, University of California, Irvine

2017
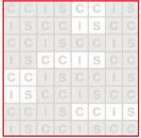
Renee Miller
PROFESSOR
PhD, University of Wisconsin

Wolfgang Gatterbauer
ASSOCIATE PROFESSOR
PhD, Vienna University of Technology

Woodrow Hartzog
PROFESSOR
PhD, University of North Carolina at Chapel Hill

Long Lu
ASSISTANT PROFESSOR
PhD, Georgia Institute of Technology

2016

Aanjhan Ranganathan
ASSISTANT PROFESSOR
Doctor of Science, ETH Zürich

Stavros Tripakis
ASSOCIATE PROFESSOR
PhD, Joseph Fourier University

Rose Yu
ASSISTANT PROFESSOR
PhD, University of Southern California

Christopher Amato
ASSISTANT PROFESSOR
PhD, University of Massachusetts

Cody Dunne
ASSISTANT PROFESSOR
PhD, University of Maryland

Tina Eliassi-Rad
ASSOCIATE PROFESSOR
PhD, University of Wisconsin-Madison

Huy Lê Nguyễn
ASSISTANT PROFESSOR
PhD, Princeton University

Alina Oprea
ASSOCIATE PROFESSOR
PhD, Carnegie Mellon University

Abhi Shelat
ASSOCIATE PROFESSOR
PhD, Massachusetts Institute of Technology

Frank Tip
PROFESSOR
PhD, University of Amsterdam

Jan-Willem van de Meent
ASSISTANT PROFESSOR
PhD, Leiden University

Byron Wallace
ASSISTANT PROFESSOR
PhD, Tufts University

2015

Michelle Borkin
ASSISTANT PROFESSOR
PhD, Harvard University

Ehsan Elhamifar
ASSISTANT PROFESSOR
PhD, Johns Hopkins University

Cristina Nita-Rotaru
PROFESSOR
PhD, Johns Hopkins University

Lu Wang
ASSISTANT PROFESSOR
PhD, Cornell University

NEW FACULTY

- 24 tenured and tenure track faculty over the past four years
- 20+ more new hires anticipated over the next three years

RESEARCH HIGHLIGHTS
BEST PAPER AWARDS

2015-2018 CCIS faculty and students won best paper/test of time awards at the following conferences:
AAMAS, ACL, ACM SIGSOFT, COSN, EAPLS, FDG, ICDM, IEEE CNS, IEEE DSN, IEEE SecDev, ISWC, USENIX FAST, USENIX Security, SIGCOMM
Cyber Faculty: CCS 2017, USENIX 2017, NDSS 2018, AISEC 2017, WISEC 2018

CAREER & YOUNG INVESTIGATOR AWARDS

In 2018, six faculty members received NSF CAREER Awards:
David Choffnes, Huy Le Nguyen, Robert Platt, Jonathan Ullman, Byron Wallace, Daniel Wichs. Ehsan Elhamifar was awarded a Young Investigator Award.
2015-2017 the following faculty were awarded Young Investigator or NSF CAREER Awards:
Amal Ahmed, Chris Amato, Michelle Borkin, Seth Cooper, Ehsan Elhamifar, Raymond Fu, Long Lu, Christoph Riedl, Olga Vitek, Lu Wang, Christo Wilson
DARPA Young Faculty Award:
Ehsan Elhamifar

CONFERENCE GENERAL OR CO-CHAIRS

2015-2018 CCIS faculty have been general chair or co-chair for the following conferences:
AAMAS, ACSAC, CHI, CNS, Curry On, DSN, ECOOP, ESOP, FMCAD, ISSTA, MLHC, MSST, NDSS, PMLDC, SIGIR, SIGSOFT, STOC, USENIX Security, WISEC, WoWMoM

INSTITUTES

CCIS houses the Cybersecurity and Privacy Institute (http://cyber.ccis.northeastern.edu) and the Network Science Institute (http://www.netsci.org)

BY THE NUMBERS

- 64 TT/T faculty total - (25% interdisiplinary with another college)
- 4 PhD programs - Computer Science, Information Assurance, Personal Health Informatics, Network Science
- 202 PhD Students - 25% female

COOPERATIVE EDUCATION

Cooperative Education (co-op) is a cornerstone of our MS and undergraduate programs. CCIS places 1,000 students in six month co-ops at over 500 companies nationwide.

New faculty hired by our department

Two new faculty members have joined our department:
Dr. Esra Akbas, Florida State University
Dr. Wei Zhang, George Washington University

Research Highlights

Autonomous Flying Robots: Dr. Crick's students spent a week in Colorado this summer as part of a multi-university flight campaign that collected hundreds of hours of meteorological data to study thunderstorm formation and other severe weather phenomena. His lab develops artificially intelligent coordination and planning techniques so that many autonomous robots can work together to search and survey a large volume of airspace. They decide where to go and where they are likely to find interesting data based on real-time sensor readings, both their own and those that other robots have told them about.

Interactions with NASA as part of innovative learning activities: Students in a new course taught by Dr. Cecil entitled 'Modeling of Cyber-Physical Systems' interacted with NASA Johnson Space Center engineers as part of class project activities. Working in teams, the students designed 3D virtual reality mock-ups to support the study of transportation and habitat designs for astronauts to live on the moon. Some of the students were co-authors in a resulting paper which has been accepted at the 2018 IEEE Systems Man Cybernetics Conference to be held in Miyazaki, Japan in October 2018.

Sensor Data Collection and Analytics: In the IoT and Big Data lab, students set up sensor networks and program micro controllers to simulate practical applications.

Immersive Computing Lab:

External Collaborations
- OSU Health Sciences Center on Data Analytics
- Halliburton Landmark on IIoT

2018 Faculty Promotions

Drs. J. Cecil and B. E. Mayfield were promoted to Full Professor rank. Dr. Chris Crick was promoted to Associate Professor with tenure.

Faculty

- 60 Tenured/tenure-track faculty
- 19 Instructors
- 1 Member of the National Academy of Engineering
- 2 Fellows of the National Academy of Inventors
- 13 ACM/IEEE fellows
- 27 Young investigator/CAREER awards
- 4 Editors-in-chief of internationally recognized academic journals

Research

- $11.5M in research expenditures (2016–2017)
- 14 spinoff companies + licenses

Research Areas of Excellence

- Artificial intelligence and robotics
- Communications and signal processing
- Computer graphics and visualization
- Cybersecurity
- Data science and engineering
- Electronic materials and devices
- Energy systems
- Health engineering
- Integrated electronics
- Networking and computer systems
- Programming languages
- Software engineering and human computer interaction
- Theoretical computer science

2017-2018 National Awards

- Lizhong Chen: NSF CAREER Award
- Fuxin Li: NSF CAREER Award
- David Allstot: IEEE Circuits and Systems Society John Choma Education Award
- Cherri Pancake: ACM President (2018–2020)
- Martin Erwig: American Book Fest Best Book Award for Education/Academic Category
- Martin Erwig: Association of American Publishers PROSE Award Honorable Mention for Computer and Information Sciences
- Christopher Mendez: NSF Graduate Research Fellowship
- Alannah Oleson: NSF Graduate Research Fellowship
- Kenneth Squire: Prizmatix Young Investigator Award

Programs and Students

- Electrical and computer engineering (BS, MS, MEng, PhD)
- Computer science (BS, MS, MEng, PhD)
- Online post-bacc degree in computer science (BS)
- Enrollment (Fall 2017)
  - 3,579 undergraduate students
  - 216 master's students
  - 212 doctoral students
- Degrees awarded (2017–2018)

	Bachelor's	Master's	Doctoral
ECE	124	51	15
CS	564*	62	7

One of the top in the nation

- Enrollment doubled in the last 5 years

Affiliated Centers and Institutes

- Center for Design of Analog and Mixed-Signal Circuits (CDADIC)
- Cyber Resilient Energy Delivery Consortium (CREDC)
- Collaborative Robotics and Intelligent Systems Institute (CoRIS)
- Northwest Alliance for Computational Science and Engineering (NACSE)
- Northwest National Marine Renewable Energy Center (NNMREC)

GenderMag

Find Gender-Inclusiveness "Bugs" in Software
Margaret Burnett, Simone Stumpf, Laura Beckwith, Anicia Peters

A method for finding gender-inclusiveness issues in software features. A team of software professionals can use it to evaluate their software products from a gender-inclusiveness perspective.

To run your own walkthrough, download the GenderMag kit or learn more at:
http://gendermag.org

Oregon State University

PennState
College of Information Sciences and Technology

Faculty and Research

Peng Liu appointed as the college's first Raymond G. Tronzo MD Professor in Cybersecurity.

Prasenjit Mitra named associate dean for research.

Dongwon Lee, associate professor of IST, awarded $500,000 NSF grant to develop fraud informatics curriculum.

Lee Giles, David Reese Professor of IST, awarded $770,000 NSF grant to create a sustainable CiteSeerX system with new data resources and a larger data collection.

Carleen F. Maitland, associate professor of IST, authors new book, "Digital Lifeline? ICTs for Refugees and Displaced Persons.

Pete Forster, associate teaching professor, partners with University researchers, law enforcement, and community organizations to identify and disrupt networks of opioid distribution.

Student Success

Nittany Data Labs students advance to 2018 L'Oreal Brandstorm finals for their "smart mirror" prototype.

Alejandro Cuevas '18 earned a Distinguished Paper Award at the 39th IEEE Symposium on Security and Privacy.

Doctoral student **Eric Obeysekare** helps team earn third place in Vodafone Americas Foundation's Wireless Innovation Project by creating a mobile bookkeeping app for financially-illiterate micro-entrepreneurs.

IST team places second in **National Cyber Analyst Challenge**. It's the third consecutive year a team of IST students has reached the finals.

Growth and Recognition

65%
Growth in undergraduate female student enrollment since 2013

84%
Growth in undergraduate student enrollment since 2013

#8
U.S. News & World Report for "Best Online Graduate Computer Information Technology Programs"

New Faculty Hires

Yasser El-Manzalawy
Assistant Research Professor

Sharon Huang
Associate Professor

Ting-Hao (Kenneth) Huang
Assistant Professor

Sarah Rajtmajer
Assistant Professor

Jamie Reep
Lecturer

Marc Rigas
Assistant Teaching Professor

Daniel Susser
Assistant Professor

Suhang Wang
Assistant Professor

Shomir Wilson
Assistant Professor

Aiping Xiong
Assistant Professor

Amulya Yadav
Assistant Professor

Penn State College of IST
E397 Westgate Building
University Park, PA 16802
814-865-8947
ist.psu.edu
@ISTatPennState

Penn State Computer Science and Engineering

New Hires

Antonio Blanca
Theory

Mahanth Gowda
IoT

Aasheesh Kolli
Architecture

Mehrdad Mahdavi
Data Science/ML

Mingfu Shao
Bioinformatics

Timothy Zhu
IoT

Research Highlights

- Patrick McDaniel awarded a five-year NSF Frontier Grant
- ARMY, CRA project renewed for five years with additional $25.5 million
- Vijay Narayanan, Anand Sivasubramaniam, and John Sustersic awarded DARPA Center Awards for the Center for Brain-Inspired Computing Enabling Autonomous Intelligence and the Center for Research in Intelligent Storage and Processing in Memory
- Other research projects include ARMY center-scale CTA, DIAS-ITA (funded by ARL & IBM), NSF Expedition, 55 NSF projects, and many industry grants

Faculty & Student Recognition

- Sean Hallgren named a 2018 Class of Vannevar Bush Faculty Fellow for his research contributions to quantum computing
- Patrick McDaniel appointed to W. Weiss Chair in Information and Communications Technology
- Anand Sivasubramaniam became an ACM Fellow and Mahmut Kandemir became an IEEE Fellow
- Guohong Cao awarded IEEE Test of Time Paper Award
- Anand Sivasubramaniam and Guohong Cao named Penn State Distinguished Professors
- Vijay Narayanan appointed to A. Robert Noll Chair in Engineering
- Daniel Kifer appointed to the National Statistics Board
- Kelsie McElroy, junior computer science major, named 2018 Google Women Techmakers Scholar

Department by the Numbers:

889
JUNIORS AND SENIORS

125
PH.D. STUDENTS

84
M.S. + M.ENG. STUDENTS

33
TENURE TRACK FACULTY

14
NON-TENURE TRACK FACULTY

PennState
College of Engineering

PURDUE UNIVERSITY®

Department of Computer Science
COLLEGE OF SCIENCE

CS BY THE NUMBERS

FACULTY MEMBERS

51 TENURED/TENURE-TRACK (20% FEMALE)
3 PROFESSORS OF PRACTICE

UNDERGRADUATE STUDENTS

2 UNDERGRADUATE DEGREES:
COMPUTER SCIENCE, DATA SCIENCE

86 DATA SCIENCE **MAJORS**
(PROGRAM STARTED IN 2017)

1,756
CS MAJORS (9 TRACKS)
18% FEMALE

DEGREES AWARDED IN 2017-18
318 B.S. **72** M.S. **26** Ph.D

GRADUATE STUDENTS

2 MS DEGREES:
COMPUTER SCIENCE, INFORMATION SECURITY

ENROLLMENT
235 PhD STUDENTS
111 MS STUDENTS
21% FEMALE GRAD STUDENTS

SUPPORT
101 TAs
110 RAs
22 FELLOWSHIPS

NEW FACULTY

FALL 2018

PEDRO FONSECA
Assistant Professor of Computer Science
Ph.D., Max Plank Institute
Research areas: Operating systems, distributed systems

YEXIANG XUE
Assistant Professor of Computer Science
Ph.D., Cornell University
Research areas: AI, machine learning, computational sustainability

MING YIN
Assistant Professor of Computer Science
Ph.D., Harvard University
Research areas: Social computing, crowdsourcing, AI

YING ZHU
Assistant Professor of Statistics and Computer Science
Ph.D., U.C. Berkeley
Research areas: Integrating structural modeling and machine learning

NEWS & HIGHLIGHTS

Dongyan Xu and **Xiangyu Zhang** are leading a $6 million grant from the Office of Naval Research to improve security of electronic devices in physical environments or industrial control systems.

Alex Pothen was named a SIAM Fellow.

Walid Aref has been named a 2017 IEEE Fellow.

Elias Bareinboim received the NSF CAREER award.

Chunyi Peng received the NSF CAREER award.

Elisa Bertino received the 2018 Research Innovation Award from the IEEE Technical Committee on Services Computing (TCSVC).

Ninghui Li won the ICDE 2017 Test of Time (10-Year Award) for his 2007 paper "t-Closeness: Privacy Beyond k-Anonymity and ℓ-Diversity."

Sunil Prabhakar accepted the position of director of Purdue's Integrative Data Science Initiative.

Susanne Hambrusch currently serves as interim department head.

SMU
SINGAPORE MANAGEMENT UNIVERSITY
School of Information Systems

sis.smu.edu.sg

FACULTY

31 TENURE TRACK

- 6 → Professors
- 16 → Associate Professors
- 9 → Assistant Professors

20 PRACTICE AND EDUCATION TRACKS

- 2 → Professors
- 6 → Associate Professors
- 6 → Assistant Professors
- 5 → Senior Lecturers
- 1 → Lecturer

Search is underway for multiple faculty positions, across all ranks and all tracks.

STUDENTS

55 PhD STUDENTS

Recent PhD graduate placements include Queen's University, Oakland University, Microsoft, Alibaba, Booking.com, JD.com.

335 PROFESSIONAL MASTERS STUDENTS

1326 STUDENTS IN B.Sc. (INFORMATION SYSTEMS)

- 1214 → Information Systems Major
- 112 → Smart-City Management & Technology Major (launched in August 2017)

Metrics updated as of September 2018

RESEARCH HIGHLIGHTS

ASSISTANT PROFESSOR AKSHAT KUMAR was recognized as one of "AI's 10 to Watch" by Institute of Electrical and Electronics Engineers (IEEE) Intelligent Systems Magazine.

PROFESSOR LIM EE PENG, together with research scientist Palakorn ACHANANUPARP and Carnegie Mellon University (CMU) Professor Vibhanshu ABHISHEK, won a best paper award for their paper "Does Journaling Encourage Healthier Choices? Analyzing Healthy Eating Behaviors of Food Journalers" at the Association for Computing Machinery (ACM) Digital Health Conference 2018.

ASSISTANT PROFESSOR KOTARO HARA won an Honorable Mention for his paper "A Data-Driven Analysis of Workers' Earnings on Amazon Mechanical Turk" at ACM CHI Conference on Human Factors in Computing Systems 2018.

Collaborating with clinicians and Tata Consultancy Services, **ASSOCIATE PROFESSOR TAN HWEE PINK** and his team developed and deployed an elderly monitoring system for 200 seniors who are living alone, and achieved 80% accuracy in detecting vulnerable seniors who are at risk of social isolation, depression, cognitive impairment, frailty, etc.

ASSOCIATE PROFESSORS CHENG SHIH-FEN and **PRADEEP VARAKANTHAM**'s team clinched the Best Application Demo Award for "Driver Guidance System for Taxis in Singapore" at the 17th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2018.

RESEARCH GRANTS SECURED BY OUR FACULTY SINCE 2016: EXCEED S$4M IN VALUE

Conferences organized recently include AAMAS 2016, MobiSys 2016, Conference on Information and Knowledge Management (CIKM) 2017, IEEE International Conference on Data Mining (ICDM) 2018, UbiComp 2018.

EDUCATION HIGHLIGHTS

PROFESSOR VENKY SHANKARARAMAN was elected President-Elect of Association for Information Systems (AIS) Special Interest Group for Education (SIGED).

Our **MASTER OF IT IN BUSINESS DEGREE**, a postgraduate professional program, debuts at 11th of 75 in the QS World University Rankings for Masters in Business Analytics.

We launched an **ARTIFICIAL INTELLIGENCE TRACK** in 2018.

We are launching a **B.Sc. (COMPUTER SCIENCE) DEGREE** in 2019.

STEVENS
INSTITUTE *of* TECHNOLOGY
THE INNOVATION UNIVERSITY®
1870

DEPARTMENT OF COMPUTER SCIENCE
stevens.edu/ses/cs

RANKINGS
from CSrankings.com

37th
computer vision

29th
security

23rd
programming languages

39th
cryptography

25th
logic and verification

STUDENT NUMBERS AND GROWTH

503
Undergraduate Students

203
New Freshman

Up From

130
Last Year

28
Enrolled in CS Ph.D. Program

447
Enrolled in the CS Masters' Programs

20
Tenure-Track Faculty

5
Teaching Faculty

HIGHLIGHTS

- ONR Grant Awards received by Georgios Portokalidis, and Eric Koskinen

- Grant Awards from NSF's Secure and Trustworthy Cyberspace program received by David Naumann, and Nikolaos Triandopoulos

- Distinguished Teaching Faculty Award received by Brian Borowski

- Faculty Appreciation Award received by Dimitrios Damopoulos

- 2018 Provost's Award for Research Excellence recieved by Georgios Portokalidis

NEW FACULTY HIRES

Yue Ning
Assistant Professor
August 2018

Applied machine learning, text mining and knowledge discovery
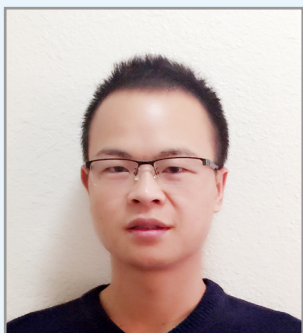
Jun Xu
Assistant Professor
August 2018

Software security, systems security

Shusen Wang
Assistant Professor
September 2018

Machine learning, randomized numerical linear algebra, distributed computing

Jie Shen
Assistant Professor
August 2019

Machine learning, high-dimensional statistics, large-scale optimization
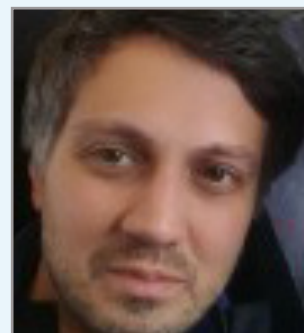
Antonio Barbalace
Assistant Professor
October 2019

Operating systems, parallel and distributed computing, virtualization environments

Funding Highlights

- Four 2018 NSF CAREER awards in 2018 target security, bioinformatics, cloud computing, and complex networks.
- Significant growth in cyber-security research portfolio in 2017-2018 including Sekar and Polychronakis's $3.4M ONR award, Polychronakis's NSF CAREER and DARPA YFA awards, and several NSF SaTC awards.
- Increase in annual research expenditures to over $8M.
- Three 2018 NSF medium grants focus on networking, computer vision and bioinformatics with total funding over $3M.

Congratulations to our 2018 NSF CAREER Awardees!

Faculty Highlights

- Distinguished Professor Arie Kaufman became a Fellow of the National Academy of Inventors (NAI).
- R. Sekar appointed department co-chair and SUNY Empire Innovation Professor in Cybersecurity.
- Several faculty were technical program committee chairs or co-chairs of major conferences in 2018 -- Jie Gao (IPSN), Aruna Balasubramanian (HotMobile), Michael Bender (LATIN).

Professor Klaus Mueller Appointed IEEE TVCG Editor-in-Chief

Student Growth and Success

- Steady increase in enrollment with 1200+ undergrad, 400+ masters and 200+ doctoral students. Ranked #16 nationwide in annual bachelor degree production (ASEE).
- PhD candidate Abbas Razaghpanah's privacy research uncovers mobile tracking trends and is extensively covered by the media.

WISE Computer Science Student Alexa Rockwell '18: Solving the World's Problems

2018-2019 Special Initiatives

- The Computer Science Distinguished Lecture Series kicks-off its 18th year on September 28. Sponsored again this year by Shutterstock, talks cover networks, computer vision, game theory, and NLP.
- Stony Brook Distinguished Alumnus John Hennessy, President Emeritus of Stanford University, created a new endowed professorship.

Steven Skiena Named Director of Institute for AI-Driven Discovery and Innovation
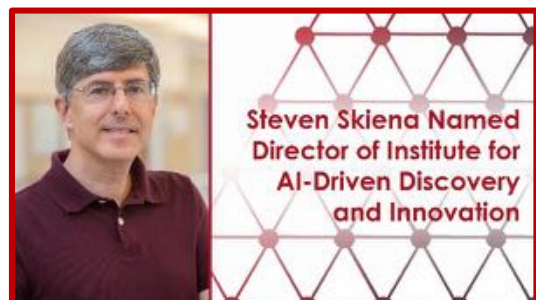
Syracuse University
College of Engineering & Computer Science

Comp Sci at SU

- **Cognitive wireless systems**
- **Cybersecurity**
- **Electromagnetics and Photonics**
- **Artificial Intelligence and Data Mining**
- **Green computing**
- **Smart Grid systems**

New Faculty

Garret Katz
Assistant Professor
Programming neural networks to execute symbolic, cognitive-level tasks, and learn

Fanxin Kong
Assistant Professor
Cyberphysical systems, IoT, cloud computing, edge computing, smart grid, and energy systems
Joining January 2019

Engineeringonline.syr.edu - **Mohammed Abdallah,** *Assistant Teaching Professor*

Research Highlights

- Engineers and Computer Scientists Unite to Develop Autonomous UAVs ([more](#))
- New App Aims to Reduce Suicides, Alert Psychiatrists to Concerning Social Media Posts ([more](#))
- Syracuse University Awarded $1.2M to Develop New Energy Saving Technology ([more](#))
- Modeling a Multilayer Terrorist Network ([more](#))
- Using Software to Provide improved Health Care to Underserved Populations ([more](#))
- Faculty Awarded Air Force Grant to Supercharge Information Fusion ([more](#))
- Engineering and Computer Science, Office of Research Award $230,000 for UAS Research ([more](#))
- Using Technology to Read and Analyze Human Emotion ([more](#))
- Multidisciplinary Team Wins NSF Award to Study Potential Risks of Distributed Energy Markets ([more](#))

Student Numbers

293
Comp Sci and Systems & Information Science Undergrads

287
Comp Sci M.S. Students

46
Comp Sci Ph.D. Students

Transform together.

The College of Engineering & Computer Science is an inclusive, intimate, and collaborative community of innovators set within Syracuse University's gorgeous campus of extensive academic offerings and quintessential college experiences.

With undeniable spirit, our students master in-demand disciplines, gain real-world, integrative skills, and graduate prepared to succeed in their careers and shape the future.

Computer Science
TENNESSEE TECH

Our mission is to be widely recognized for enabling students to have a global impact through innovative and quality programs, research that emphasizes collaborative partnerships, and the success of a diverse student, faculty, and alumni community.

Faculty Highlights

Faculty Size: 18 (6 full, 3 associate, 1 assistant, 3 lecturers, 2 visiting, 3 adjunct)

Career Awardees: 1, **Endowed Chairs**: 1

Dr. Sheikh Ghafoor (Area: High Performance Computing) promoted to Full Professor in AY 17-18

Three new faculty for AY 18-19

- Dr. Mohammad Alam, Visiting Assistant Professor (PhD, 2009, Waseda University)
- Dr. Bhaskar Rimal, Visiting Assistant Professor (PhD, 2017, INRS, University of Québec)
- Ms. April Crockett, Lecturer (MS, 2004, Tennessee Technological University)

Research Highlights

- 40+ papers published in journals, conferences, and workshops.
- Over $1.4M in new grants awarded Including NSF grant awarded to Drs. Ghafoor, Rogers, and Brown in support of workshops to teach parallel programming concepts in undergraduate programs
- Establishment of new Data Science and Analytics Collaboratory as a new joint venture between the College of Business and College of Engineering
- Creation of a new cyber range in the Cybersecurity Education Research and Outreach Center

Program Highlights

Four students awarded the W.A. Howard Award for institutional 4.0 GPA upon graduation – highest concentration of 4.0 GPAs in the university

Continued growth in excellence in the delivery of computer science and cybersecurity education

Strategic alliances developed with corporate partners to promote experiential learning in an Agile development environment

BRAID Affiliate School for 2018-19

New scholarships for Women and Minorities

- Endowed scholarship from the Blue Cross Blue Shield of Tennessee Heath Foundation
- Jackson National Life Diversity Scholarship

Degrees Conferred

- BS: 70 (up 32% from previous year)
- MS: 7 (same as previous year)

Enrollment Growth

- BS: 497 (up 17% from previous year)
- MS: 30 (up 24% from previous year)
- PhD: 24 (up 33% from previous year)

TEXAS ★ STATE ®

COMPUTER SCIENCE

Numbers

Faculty: 39

CS Students: 1290

Annual Research
Expenditures: $1.5 million

Organizational News

The new PhD in Computer Science program has been successfully launched with two cohorts of students (22 in total). This innovative program integrates computer science research with business training.

New Faculty Hire

Kecheng Yang, Assistant Professor

PhD, University of North Carolina at Chapel Hill

Research Interests: Real-time systems, scheduling, and resource allocation algorithms.

Faculty Highlights

- Professor Yan Yan gave a keynote talk at the 2018 IEEE Workshop on Machine Learning and Artificial Intelligence for Multimedia Creation.

- Professor Moonis Ali served as 2018 General Chair of IEA/AIE in Montreal, Canada, and Professor Anne Ngu as Co-Chair of NCWIT Undergraduate Mentoring Award Committee.

- Professor Jinshong Hwang served as Director of ACM ICPC Asia Contests and Professor Moonis Ali as President of International Society of Applied Intelligence and Editor in Chief of the International Journal of Applied Intelligence.

- Professor Vangelis Metsis invited to participate in the Google FIR program

- Professors Hongchi Shi, Martin Burtscher, Mina Guirguis, Anne Ngu, Becky Reichenau, and Jill Seaman along with Dean Christine Hailey and Assistant VP Stephanie Anderson are engaged in a NCWIT project to increase female participation in computer science.

Research Highlights

- New NSF REU Site in Smart and Connected Communities grant received by Professors Vangelis Metsis and Mina Guirguis

- Professor Oleg Komogortsev, Apan Qasem, Martin Burtscher, Yan Yan and Jelena Tesic were awarded new research grants from NSF, NIST, USDoD, and US Navy.

Student Highlights

- NSF GRFP award received by Dillon Lohr to support his PhD study at Texas State

- Student enrollment dramatically increased.

- The GoCeries app developed by two CS students, Jae Lee and Chase Phelps, along with two students of Art and Design and two students of Business, was selected as a semifinalist in the 2018 Adobe Design Achievement Awards.

Department of Computer Science
Texas Tech University
http://www.depts.ttu.edu/cs/

Recent Faculty Hire

Ariful Islam. Ph.D. CS
Stony Brook University
Postdoctoral fellow, Carnegie Melon University
Assistant professor in
Cyber-Physical Systems, Formal Methods, Hybrid
Systems and System Biology

Research Highlights

Three community impact grants:

- $99,940 NSF grant from Smart and Connected Communities program. This project aims to enhance water resource management and infrastructure improvement in West Texas rural areas encompassing the communities of water municipals, oil & gas and agricultures (Dr. Jin, P.I. with two Co-Is from CS and one from Civil Engineering)
- $600,000 NSF RET grant to train high school teachers in West Texas in data science as applied to solve cyber security problems. Dr. Serwadda (P.I., under collaboration with 3 faculty members from the College of Education)
- $299,999 NSF grant to develop a collaborative learning platform to enhance cybersecurity pedagogy, promote an understanding of cyberattack defense, and explore effective incident response techniques to address cybersecurity incidents (Dr. Namin, P.I.)
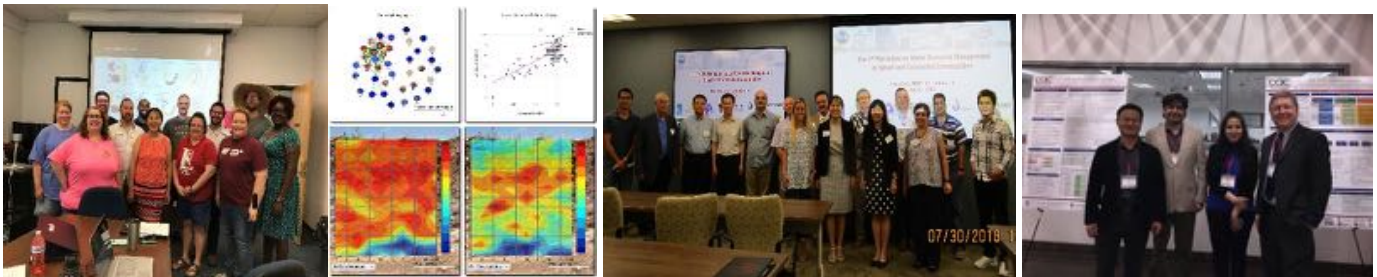
Other Highlights

- Vung Pham, a new PhD student supervised by Dr. Tommy Dang got two awards at the 2018 IEEE VIS Conference, a prestigious conference in data visualization. One award is Strong Support for Exploratory Analysis for the Mini-Challenge 2, and another is an honorable mention Representation of Small-Scale Temporal Patterns for the Mini-Challenge 3.
- Isaac Griswold-Steiner, an undergraduate student supervised by Dr. Abdul Serwadda, got an honorable mention for student research at the 2018 CRA Awards.
- Dr. Watson was interviewed by Taylor Siekiewicz of Peterson's Publishing on pros' and con's of a Bachelor's Degree in Computer Science versus attending a programming boot camp (Interviewed September 12, 2018 to be published in near future)

Organizational News

- TTU-Costa Rica starts its first semester in Fall 2018. It offers five programs, one of which is undergraduate Computer Science.
- Under collaboration with Blas Pascal University, a compulsory 6-8 week International program for students of the Whitacre College of Engineering has expanded to offer internship opportunities to place 8-10 Computer Science students in companies in Cordoba, Argentina. Students will do internships with many well-known service enterprises in Argentina.
- Texas Tech University is the leading site of the Cloud and Autonomic Computing Center sponsored by NSF through the I/UCRC program and promotes cutting-edge research collaboration between academia and industry sectors.

637	91	68	28
Undergraduate students enrollment	51 Master students enrollment & 40 Ph.D. students enrollment	Undergraduate degrees awarded	Graduate degrees awarded

TOYOTA TECHNOLOGICAL INSTITUTE AT CHICAGO

New Faculty Hires: This past year TTIC welcomed a new Chief Academic Officer and 7 new Research Assistant Professors (RAPs)

Avrim Blum
Professor and Chief Academic Officer
Theoretical Computer Science and Machine Learning

Arturs Backurs
(PhD MIT)
Fine-grained complexity, high-dimensional computational geometry and metric embeddings

Allyson Ettinger
(PhD Univ Maryland)
NLP and computational psycholinguistics, with focus on processing and representation of meaning

Steve Hanneke
(PhD CMU)
Statistical learning theory, active and interactive learning

Sepideh Mahabadi
(PhD MIT)
Sublinear algorithms for massive data. High Dimensional Computational Geometry, Proximity Search, Streaming Algorithms, Graph Algorithms

Thatchaphol Saranurak
(PhD KTH Royal Inst Tech)
Dynamic data structures on graphs, Graph algorithms in near-linear and sub-linear time, Self-adjusting data structures.

Sam Wiseman
(PhD Harvard)
NLP and machine learning, especially deep structured prediction and text generation.

Michael Yu
(PhD UCSD)
Computational biology, interpretable machine learning methods based on biological networks and ontologies. Applications to cancer-microbiome interactions and clinical datasets.

RAP Placements:
- Li-Yang Tan joined Stanford as an Assistant Professor
- Michael Maire joined the University of Chicago as an Assistant Professor
- Srinadh Bhojanapalli joined Google NYC as a Research Scientist

Research Highlights:
- David McAllester was awarded the 2018 Longuet-Higgins Prize for fundamental contributions in computer vision
- Jinbo Xu, Sheng Wang, Siqi Sun, and Renyu Zhang were awarded the PLOS Computational Biology Research Prize 2018 in the category Breakthrough Advance/Innovation
- Nati Srebro received an ICML 2017 Test of Time Honorable Mention
- Li-Yang Tan received the CCC 2017 Best Paper Award
- Kevin Gimpel, Karen Livescu, and Lifu Tu received a Best Paper Award at the 2nd Workshop on Representation Learning for NLP
- Hai Wang, Takeshi Onishi, Kevin Gimpel, and David McAllester received a Best Paper Award at the 2nd Workshop on Representation Learning for NLP
- Avrim Blum received the 2017 AI Journal Classic Paper Award
- Karen Livescu was selected Program Co-Chair for ICLR 2019
- Avrim Blum was selected Program Chair for ITCS 2019
- Blake Woodworth received an NSF Graduate Fellowship
- In Summer 2018 TTIC hosted 17 visiting students (interns) from 11 different universities
- Congratulations to 2017 PhD graduates Somaye Hashemifar, Behnam Neyshabur, Hao Tang, and Payman Yadollahpour, and to 2018 PhD graduates Haris Angelidakis, Heejin Choi, and Shubhendu Trivedi!

Events and Workshops:
- TTIC is joining 6 other academic institutions in hosting the AI Driving Olympics at NIPS 2018
- Hosted the 2018 Midwest Robotics Workshop and the 2018 Midwest Theory Day
- Initiated in 2018, TTIC Summer Workshop Program: hosting 4 workshops on topics in NLP, Algorithms, and Machine Learning

By the numbers:
- 11 Tenure-track faculty, 12 Research Assistant Professors (3-year position), and 35 PhD students

WWW.TTIC.EDU   6045 S. Kenwood Ave · Chicago, IL 60637 · Tel 773.834.2500

Department of Computer Science
Tufts University
https://engineering.tufts.edu/cs/

Faculty
- 24 full-time faculty members
- Searches for additional faculty are underway

New Faculty for Fall 2018

Karen Edwards
Lecturer

Jeff Foster
Professor

Michael Hughes
Assistant Professor

Matias Korman
Visiting Assistant Professor

Program offerings
- Certificate, Post-Baccalaureate Minor, B.S., M.S., and Ph.D. in Computer Science
- Certificate, B.S., and M.S. in Data Science (M.S. starts in Fall 2019)
- M.S. and Ph.D. in Human-Robot Interaction
- Certificate and M.S. in Computer Engineering
- Certificate in Human-Computer Interaction
- M.S. in Bioengineering
- Ph.D. in Cognitive Science

Recent Major Faculty Awards
- Diane Souvaine named Chair of the National Science Board
- Kathleen Fisher named Chair of DARPA's ISAT study group
- Susan Landau inducted into the Information Systems Security Association Hall of Fame

Students by the numbers:
- Declared CS majors as of May 1, 2018: 675; CS majors who graduated in May 2018: 150
- Fraction of CS majors that are women: nearly 1/3
- Attendees at Tufts' first-ever student-run Women in Tech Conference in Fall 2017: over 150

Other Highlights
- The CS department was named a 2018 BRAID (Building, Recruiting, and Inclusion for Diversity) Affiliate and is working to increase diversity and representation at all levels.
- The newly constituted External Advisory Board had its first meeting in Fall 2018.

CRA Undergraduate Research Winners
- Sarah Hall-Swann: 2018 Winner
- Yisu Remy Wang: 2017 Finalist

New Faculty 2017-2019

Changyou Chen, Assistant Professor

David Doermann, Professor, SUNY Empire Innovation Program

Mingchen Gao, Assistant Professor

Alan Hunt, Professor of Practice

Zhanpeng Jin, Associate Professor

Kenny Joseph, Assistant Professor

Matthew Knepley, Associate Professor

Jingjing Meng, Teaching Assistant Professor

A. Erdem Sariyuce, Assistant Professor

Weihang Wang, Assistant Professor

Junsong Yuan, Associate Professor

Research Highlights

➤ Smartphone hacks 3D printer by measuring 'leaked' energy and acoustic waves: Wenyao Xu leads an NSF-funded program that detects 3D printing data security vulnerabilities by using smart phones to analyze electromagnetic and acoustic waves. Kui Ren and Chi Zhou are co-authors.

➤ Safer Highways: Professor and Chair Chunming Qiao leads Instrument for Connected and Autonomous Vehicle Evaluation and Experimentation (iCAVE2)—a multidisciplinary academic-industrial partnership that's helping to make self-driving cars safer, cleaner, and more efficient.

➤ A Millimeter-Wave Multi-Layer WLAN Architecture for Multi-Gigabit, Always-On Connectivity: Dimitrios Koutsonikolas is developing a Millimeter-Wave multi-layer architecture for general purpose multi-Gigabit WLANs that will offer always-on connectivity in the home/enterprise environment but an order of magnitude higher throughput than today's 2.4/5 GHz WLANs.

➤ Detecting Chess Cheats: Ken Regan develops algorithms that detect cheating in chess games. His software compares a player's moves to a database of the player's typical gameplay, then makes an assessment of the statistical likelihood of cheating. Dr. Regan frequently consults at international chess matches.

➤ Computer Vision for Robot Bees: Karthik Dantu owns the vision component of the RoboBee Initiative, led by the National Science Foundation and Harvard University. The "eyes" that Dr. Dantu is integrating are laser-powered sensors that enable the mechanical bees to orient themselves in space.

➤ The End of Sneakernet? Tevfik Kosar, associate professor of computer science has received a $584,469 grant from the National Science Foundation to create a tool designed to work with the existing computing infrastructure to boost data transfer speeds by more than 10 times and a prestigious IBM award for 'green internet' collaboration which proposed software solution could extend battery life, reduce energy consumption.

➤ Shifting paradigms in data science: Venu Govindaraju and Krishna Rajan are using NSF support to transform huge repositories of information primarily in scientific literature into actionable interpretation of the data automatically. Their work is already bringing results - new complex alloys with new materials.

➤ Data Exploration System: Oliver Kennedy is leading a project, with collaborators NYU and Ill. Inst. Tech and over $2.7 million in funding from NSF, to combine databases with machine learning to create Vizier. This interactive tool makes it easy to explore and repair messy data, and to share reproducible analyses of that data with other's.

Recent News

➤ Junsong Yuan became the Fellow of International Association of Pattern Recognition (IAPR), the 4th IAPR fellow of Computer Science and Engineering.

➤ Alumni Dr. Zhisheng Yan won the 2018 ACM SIGMM outstanding thesis award, advised by Changwen Chen.

➤ CyberCorps(R): An Interdisciplinary Cyber Security Curriculum: Shambhu Upadhyaya, Professor and Director of NSA- and DHS-certified Center of Academic Excellence in Education and Research received a $2.39 million grant from NSF to lead cybersecurity activities on campus via research, education and out reach.

➤ Demystifying the cellphone: Buffalo Public School secondary students built their own cellphone as part of a three-day summer camp hosted by UB's Liberty Partnerships Program.

➤ Beavers, termites inspire autonomous robots: An article on ThomasNet News reports on research by Nils Napp, assistant professor of computer science and engineering, to develop autonomous robots that can overcome uneven terrain and other obstacles and are based on beavers, termites and other animals that build structures in response to simple environmental cues.

➤ 60 seconds with Bina Ramamurthy: Cryptocurrencies like bitcoin are generating mega-buzz these days with accounts of fortunes won, and lost, on the many volatile digital exchanges. But according to Bina Ramamurthy, teaching professor of computer science and engineering, the real story is blockchain, the technology that underlies these currencies.

Other News

➤ The Computer Science program was ranked 31st in the US by US News and World Report 2018 Best Global Universities.

➤ CS Rankings.org and Scholar rankings ranked Computer Science 31st and 46th, respectively in 2017.

➤ The Computer Engineering program moved up to #55 by US News and World Report.

➤ Research Expenditure quadrupled since 2014. Record high new awards $12M in 2016 & 2017.

UNIVERSITY OF ALBERTA
DEPARTMENT OF COMPUTING SCIENCE
Edmonton, Alberta - CANADA

- **New Faculty Members (2016 & 2017):**

  - Omid Ardakanian (Assistant Prof., PhD U. of Waterloo, 2015).
  - Carrie D. Epp (Assistant Prof., PhD U of Toronto, 2016).
  - Alona Fyshe (Assistant Prof., PhD Carnegie Mellon U., 2015).
  - Nathan Sturtevant (Full Prof., PhD U. of California Los Angeles, 2003).
  - Martha White (Assistant Prof., PhD U. of Alberta, 2014).
  - James Wright (Assistant Prof., PhD U. of British Columbia, 2016).

- 48 faculty members (10 Assist., 5 Assoc. and 33 Full) and 15+ Adjunct Professors.
- About 150 undergraduate degrees conferred in 2017.
- Over 1,000 undergraduate students in all programs in 2017 as well as over 200 (thesis-based) graduate.
- Over $15M in research funding.
- According to csrankings.org as of July/2018, the department ranks:
  - #6 in Canada,
  - #86 in the world, and
  - #3 in the world in the combined areas of artificial intelligence, machine learning and data mining.

- Home of the Alberta Machine Intelligence Institute, one of three federally funded institutes in Canada for advancing Artificial Intelligence and Machine Learning research.
- Two of the last three Best Papers at AAAI were co-authored by researchers at the University of Alberta.
- Excellency in games research (e.g., Go, Hex, SKAT, and Poker):
  - Solved "heads-up limit Texas hold'em" poker (Science 2015), and created an AI capable of beating professional players in ""heads-up no-limit Texas hold'em" poker (Science 2017).
  - Alma matter for the first author of the Nature (2016) paper on AlphaGo
  - Co-founder of highly popular Certificate in Game Design program.

- NLP breakthrough in decoding the 15th's century (no longer!) mysterious Voynich manuscript.

- Creators of a Coursera-hosted highly popular certificate in Software Management Program (over 70,000 subscribers in 2017)

- Changing Edmonton's high tech landscape by attracting big research labs such as DeepMind, RBC's Borealis AI, Mitsubishi among others.

https://www.ualberta.ca/computing-science

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science

New faculty hires:

- William Bowman, Assistant Professor (graduating from Northeastern)
- Margo Seltzer, Professor (previously on the faculty at Harvard)
- Frank Wood, Associate Professor (previously on the faculty at Oxford)
- Robert Xiao, Assistant Professor (graduating from CMU)

Faculty highlights:

- 57 Faculty; 12 are Educational Leadership stream (tenured/tenure track teaching).
- Professor Margo Seltzer has been recruited as a Canada 150 Research Chair and Cheriton Family Chair in Computer Systems.
- Professor Uri Ascher has been named Fellow of Royal Society of Canada.
- Associate Professor Reid Holmes has won a CS-Can/Info-Can Young Computer Science Researcher Prize, and Professor Emeritus David Kirkpatrick has been awarded a CS-Can/Info-Can Lifetime Achievement Award.
- Associate Professor Leonid Sigal has been awarded a Canada Research Chair.
- Assistant Professor Mark Schmidt, together with co-authors Nicholas Le Roux and Francis Bach, received the Lagrange Prize.
- Professor Kevin Leyton-Brown was elected 2018 AAAI Fellow.
- Professor Joanna McGrenere was selected to Royal Society of Canada's College of New Scholars, Artists and Scientists.
- Professor Gail Murphy received the IEEE Computer Society Harlan Mills Award and was named an ACM Fellow.

Student highlights:

- PhD Student Boris Dalstein won the Alain Fournier PhD Dissertation Award.
- Alumnus Philip Lam's start-up NEX Team Inc. received $4M in seed funding.
- Alumna Hasti Seifi received the 2017 EuroHaptics Society PhD Thesis Award.
- PhD student Jordon Johnson has received a GTA Killam Award.

Student Enrollment and Growth

- 1840 Undergraduate majors, up from 830 in 2008; 31% are females.
- 99 MSc. and 76 PhD students; 26% and 18% respectively are females.
- 80 students in the second cohort of the Master of Data Science program; 47% are females.

BERKELEY 150
50 YEARS
COMPUTER SCIENCE AT BERKELEY

Recent Faculty Hires:

- Shafi Goldwasser, Ph.D. UC Berkeley, 1984, Theory
- Jennifer Listgarten, Ph.D. U Toronto, 2007, Comp Bio

Research Highlights

- 2017 ACM A.M. Turing Award, Dave Patterson (with John Hennessy of Stanford)
- 2018 Silicon Valley Hall of Fame, Randy Katz
- 2018 National Academy of Sciences member, Umesh Vazirani
- 2018 American Academy of Arts and Sciences memberships, Eric Brewer and James Demmel
- 2017 ACM Paris Kanellakis Theory and Practice Award, Scott Shenker
- 2018 IJCAI Award for Research Excellence, Jitendra Malik
- 2018 Alfred P. Sloan Research Fellowships, Anca Dragan and Raluca Popa
- Alessandro Chiesa, one of "35 Innovators under 35" for MIT's Tech Review, 2018

Organizational News

- Berkeley has established a Data Science major in the College of Letters and Science this year. We hope to establish one in the College of Engineering in the coming year.

Student Numbers and Growth

- Currently, 1406 EECS undergraduates are in the College of Engineering.
- 1451 more students are currently enrolled in the College of Letters and Science CS major in 2018.
- The Foundations of Data Science Course, CS C8, has its largest enrollment ever, with more than 1225 students in Fall 2018. Our introductory CS course, CS 61A, has grown as large as 1,660 students in Fall 2017 and may grow even bigger.

UCI Department of Computer Science
Donald Bren School of Information & Computer Sciences

BY THE NUMBERS

Faculty
49 tenured/tenure-track
25 additional affiliated faculty

The Department of Computer Science at UC Irvine is unusually broad and spans the whole spectrum of computer science research, with particular areas of strength/interest in Artificial Intelligence, Machine Learning, Computer Vision, Databases, Big Data, Security, IoT and Embedded Systems.

Students
More than...
- 180 Ph.D. students
- 225 students in two Masters programs (professional MCS, research-oriented MS)
- 2,100 Computer Science majors
- 1,200 Undergraduates in majors shared with other departments

New Education Programs
Professional Master of Computer Science: 100 students in Year 1, 125 students in Year 2 (AY 2018-19).

Research-oriented Master of Science in Computer Science: 60 students admitted each year.

Bachelor of Science in Data Science: Joint with Statistics Department, more than 100 students in Year 2.

Bachelor of Science in Computer Science and Engineering: Joint with School of Engineering.

Honors
10 ACM Fellows • 9 IEEE Fellows • 6 AAAS Fellows • 4 AAAI Fellows • 16 NSF Career awards • 2 Endowed Professors and 12 Distinguished/Chancellor's Professors • 1 National Academy of Engineering Member • 1 Academia Europea Member • 1 Danish Academy of Science & Letters Member

Major Faculty Awards
Fulbright scholars, Hellman Fellowship, Helmhotz Prize, numerous IEEE and ACM best papers and Test of Time awards.

Student Distinctions
5 NSF Graduate Fellowships in 2017-18

NEW FACULTY 2018

Qi Alfred Chen
Network and systems security
Ph.D., University of Michigan

Sergio Gago Masague
Pervasive computing and user-centric software
Ph.D., Polytechnic University of Catalonia (UPC), Spain

Sang Woo Jun
Big data systems, hardware acceleration and flash storage
Ph.D., MIT

Stephan Mandt
Machine learning
Ph.D., University of Cologne, Germany

Jennifer Wong-Ma
Embedded systems and networking
Ph.D., UCLA

We plan to recruit another approximately 20 faculty over the next 4-5 years, with 6-8 openings in 2019.

HIGHLIGHTS 2017–18

Interdisciplinary Science and Engineering Building: Construction on UCI's newest multidisciplinary research building is officially underway. Supported by a transformative $30 million gift from the Samueli Foundation, coupled with $50 million in state funds and $40 million in UCI funds, the building will comprise more than 200,000 square feet of research, office and meeting space for faculty and students from the schools of engineering, physical sciences, and information and computer sciences.

Tsudik Receives 2017 ACM SIGSAC Outstanding Contributions Award: Chancellor's Professor of Computer Science Gene Tsudik received the ACM SIGSAC Outstanding Contributions Award at the 2017 ACM Conference on Computer and Communications Security for his leadership in security and privacy research.

Goodrich Elected to Royal Danish Academy of Sciences & Letters: Chancellor's Professor of Computer Science Michael Goodrich was elected as a foreign member of the Royal Danish Academy of Sciences & Letters in 2018. Goodrich is a leader in the field of algorithm design, where he is highly recognized for research in geometric computing, networking, geographic information systems, computer security and big data processing.

Levorato Collaborates on $3.8 Million Grant for Electricity Distribution Cybersecurity: Associate Professor of Computer Science Marco Levorato is part of a multidisciplinary team that aims to investigate the impact of cyberattacks on electricity distribution infrastructure. The team includes researchers from UCI, UCLA, UC Santa Barbara and the Lawrence Livermore National Laboratory (LLNL). Levorato's role in the project is the investigation of security vulnerabilities at the intersection between communication networks and the distribution system.

Franz Looks to Simplify Software for Increased Security with $3 Million Naval Research Grant: The Office of Naval Research awarded $3.15 million to Chancellor's Professor of Computer Science Michael Franz for a three-year grant, "Attack Surface Reduction for Binary Programs."

UCI Department of Informatics
Donald Bren School of Information & Computer Sciences

About the Department

The Department of Informatics at UC Irvine seeks to make a positive difference in how people live, work, and build in a digital world. Wherever technology touches people, it must be designed with ultimate care. This requires mastery of technological knowhow and a deep appreciation of the social, cultural, and organizational forces at work. To that end, we study interactions among information technologies and people, create innovative information technologies that serve the diverse needs of society, and educate our students to be leaders in these endeavors.

Research Areas of Excellence

- Computer Games and Virtual Worlds
- Computer-Supported Cooperate Work
- Design
- Digital Media and Learning
- Health Informatics
- Human-Computer Interaction
- Information Retrieval and Visualization
- Organizational Science
- Science and Technology Studies
- Software Engineering
- Sustainability & Green IT
- Ubiquitous Computing

Highlights

- 7 new tenure-track faculty hired
- new professional Master program in Software Engineering launched
- Connected Learning Laboratory established
- $8M IARPA grant co-lead to study workplace performance
- $1.66M NSF grant to study community-wide software architecture infrastructure
- $400K gift to create a high-school eSports league with associated STEM curriculum

By the Numbers

- 30 tenure track faculty
- 13 affiliated faculty

- 80 Ph.D. students
- 46 M.S. students
- 34 professional Master students
- 765 B.S. students

- 1 NAE member
- 4 ACM Fellows
- 5 CHI Academy Members
- 1 AAAS Fellow

Academic Programs

- Ph.D. programs: Informatics, Software Engineering
- M.S. programs (research oriented): Informatics, Software Engineering
- Master programs (industry oriented): Human-Computer Interaction and Design, Software Engineering
- Undergraduate programs: Informatics, Computer Game Science, Business Information Management, Software Engineering
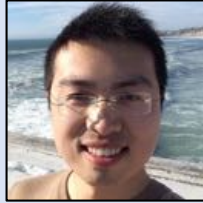
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WORK
BUILD

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Fall 2018 Update

New faculty hires:

Daniel Lokshtanov	**Lingqi Yan**	**Kate Kharitonova**	**Arpit Gupta**	**Yu Feng**
Theory	Computer graphics	Teaching Professor	Networking and systems	PL and program verification

Research Highlights:

- Best Paper Award at GLOBECOM 2017 by John O'Donovan
- Best Paper Award at Eurocrypt 2018 by Rachel Lin
- Best Paper Award at ACM UMAP 2018 by James Schaffer, John O'Donovan, and Tobias Höllerer
- Best Demonstration Award at The EDBT 2018 by Victory Zakhary, Cetin Sahin, Amr El Abbadi, Rachel Lin and Stefano Tessaro
- 2nd Best Vision Award at ACM SIGSPATIAL 2018 by Victor Zakhary, Theodore Georgiou, Cetin Sahin and Amr El Abbadi
- 2018 IEEE Micro "Top Pick" Award by Weilong Cui and Tim Sherwood
- 2018 IEEE Micro "Top Pick" Award by Joseph McMahan, Michael Christensen, Lawton Nichols, Jared Roesch, Sung-Yee Guo and Ben Hardekopf and Tim Sherwood

Faculty Awards:

- Giovanni Vigna named IEEE Fellow
- Linda Petzold awarded the Mehrabian Endowed Chair in College of Engineering
- Rich Wolski named to the Duval Family Presidential Endowed Chair in Energy Efficiency
- Tobias Höllerer received Early Innovator Award at IEEE ISWC/Ubicomp Joint Conference
- Xifeng Yan received a Visa Research Faculty Award
- Diba Mirza awarded the Northrup Grumman Excellence in Teaching Award
- William Wang recipient of an Adobe Faculty Research Award, IBM Faculty Award, and 2018 DARPA Young Faculty Award
- Elizabeth Belding received an ACM SIGMOBILE Test of Time Award, N2Women Stars in Networking & Communication Award, and $2 Million NSF Grant to develop Internet access solutions for improved connectivity to rural Native American Indian Nations

Student and Alumni highlights:

- Ph.D. candidate Yu Su set to join Ohio State as an assistant professor
- Ph.D. student Tegan Brennan has received an honorable mention of the 2018 NCWIT Collegiate Award
- Former postdoc Yinghui Wu received SIGMOD Best Paper Award
- Ph.D. alumni Sayan Ranu's research covered in the Hindu Business Line

Computer Science and Engineering

Baskin Engineering | **UC SANTA CRUZ**

In 2018, faculty from Computer Science, Computer Engineering, and Technology Management came together to form the **Department of Computer Science and Engineering**.

New faculty in 2018

Scott Beamer: Computer architecture, data movement optimization, open-source hardware design, graph algorithms (Ph.D., UC Berkeley)

Snigdha Chaturvedi: Natural language processing, machine learning, text mining (Ph.D., University of Maryland, College Park)

Lindsey Kuper: Programming languages, distributed systems, parallelism, concurrency, verification (Ph.D., Indiana University)

Heiner Litz: Computer architecture, operating systems, storage systems, machine learning, hardware design (Ph.D., Mannheim University)

Yang Liu: Data science, information elicitation/aggregation, fairness in machine learning (Ph.D., University of Michigan, Ann Arbor)

Faisal Nawab: Data management, databases; distributed and cloud systems; wireless, edge, and data center networking; IoT (Ph.D., UC Santa Barbara)

Narges Norouzi: Adoption of machine learning and statistical signal processing in biometric recognition, biostatistics, and genomic medicine (Ph.D., University of Toronto)

2017-18 Faculty and Student Highlights

- Owen Arden and Chen Qian awarded NSF CAREER grants
- J.J. Garcia-Luna-Aceves becomes campus director of CITRIS
- Slugbot team chosen to compete in Amazon's Alexa Prize Challenge
- David Harrison wins UC Santa Cruz Excellence in Teaching Award
- Phokion Kolaitis elected a Foreign Member of Academia Europaea in the Informatics Section
- Zayd Hammoudeh receives Best Student Paper award in the Intl. Conf. on Satisfiability (SAT 2018)
- Abhradeep Guha Thakurta, Dimitris Achlioptas, NSF TRIPODS+X Award "Privacy-Preserving Genomic Data Analysis"
- Roberto Manduchi NIH grant "Inertial-Based Indoor Backtracking and Wayfinding Aid for Blind Travelers"

Open 2019 Faculty Positions

Searching for 4 faculty for appointments beginning July 1, 2019 in the following areas:
- Security/Cryptography (Assistant Professor)
- Software Foundations (Assistant Professor)
- Natural Language Processing (Full and Assistant Professor)

By the Numbers

- 38 Faculty, 8 Lecturers, 7 Adjunct Faculty
- 3661 undergraduate students (1793 majors) in 17-18
- 162 MS, 189 PhD students in 2017-18
- 438 BS, 95 BA, 108 MS, 18 PhD degrees granted in 17-18

It's an exciting time for computer science at the University of Chicago. We're at the center of an ambitious, multi-year effort to significantly expand the university's computing and data science activities. We've moved into a new, state-of-the-art research and teaching facility, we're doubling the size of our faculty, we provide a growing set of options for undergraduate, masters, and PhD programs, and we're building collaborations across the spectrum of sciences, policy, business, and medicine.

Michael J. Franklin, Liew Family Chair of Computer Science

New Faculty Hires

David Cash
Assoc. Prof.
Cybersecurity
PhD Georgia Tech '09

Rayid Ghani
Research Assoc. Prof.
Data Science
MS CMU '01

Sanjay Krishnan
Asst. Prof.
Machine Learning
PhD UC Berkeley '18
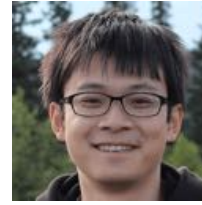
Junchen Jiang
Asst. Prof.
Networking
PhD CMU '17

Pedro Lopes
Asst. Prof.
HCI
PhD Hasso Plattner Inst. '18

Michael Maire
Asst. Prof.
Computer Vision
PhD UC Berkeley '09

Aaron Potechin
Asst. Prof.
Theory
PhD MIT '15
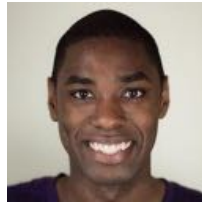
Lamont Samuels
Asst. Clinical Prof.
Programming Sys.
PhD UChicago '16

Rebecca Willett
Professor (CS/Stats)
Machine Learning
PhD Rice '05

2017-2018 Highlights

- Moved into our new research and office space in the historic John Crerar Library building (right) on the UChicago science quad
- Announced the Center for Data and Applied Computing, incubating data and compute-intensive applied research initiatives
- Eight Siebel Scholars named from UChicago CS graduate programs
- NSF CISE Expeditions Award for Enabling Practical-Scale Quantum Computing (EPIQC), led by Prof. Fred Chong
- Prof. Diana Franklin testified to Congress on quantum computing education
- Prof. Ben Zhao awarded Most Influential Paper award at ASPLOS, where UChicago scientists presented 10% of papers
- Hosted Midwest Machine Learning Symposium and Greater Chicago Area Systems Research Workshop
- Best paper awards at EuroVis and SIGCHI conferences
- Awarded 82 CS Major Bachelors, 103 Masters Degrees, and 14 PhDs in 2017/18

cs.uchicago.edu

SCHOOL OF INFORMATION TECHNOLOGY

University of Cincinnati
https://cech.uc.edu/it.html

FACULTY

- 17 full-time faculty members: 1 Professor, 6 Associate Professors, 6 Assistant Professors, 4 Assistant Professor – Educators
- Searches for 1 Assistant Professor –Educator & 2 Assistant Professor's are under way

STUDENT NUMBERS & GROWTH

- 827 Students: 707 Undergraduate Students; 120 Master's Students
- Fall 2018 Freshman Enrollment: 118 Freshman (53% growth from Fall 2017)

NEW HIRES

Ryan Moore, Assistant Professor – Educator
Murat Ozer, PhD, Assistant Professor
Abdou Fall, Visiting Instructor
Rebekah Michael, Assistant Professor – Educator
Lauren Kirgis, Graduate Coordinator
Maureen Malone, Executive Staff Assistant

RESEARCH HIGHLIGHTS
Selected recent grants

- Hazem Said – Ohio Department of Higher Education - Ohio Cyber Range - $1,900,000
- Chengcheng Li – NSA GenCyber - $100,000, NSA CNAP - $497,780.80, NSF ITEST - $1,200,000, OBR Workforce Development
- Xuetao Wei – NSF - $299,905
- Jess Kropczynski – NSF - $172, 811

Total Amount of Selected Grants-
$4,170,496.80

Home of the NSA and DHS Center for Academic Excellence in Cyber Defense

OTHER HIGHLIGHTS

School of Information Technology Early College Program (https://cech.uc.edu/it/early-college-program.html)

o   An innovative partnership to improve college access and affordability while increasing the quantity, quality and diversity of the IT talent pool. High school students complete the first year of the UC BSIT program and receive automatic admission to complete their BSIT, Five semesters of coop, and a possible Master's degree in just four years after high school.

Ohio Cyber Range at UC

o   The Ohio Department of Higher Education, in collaboration with the Ohio Adjutant General's Department, awarded UC $1.9 million to establish a demonstration site for the Ohio Cyber Range by June 2019. The Ohio Cyber Range at UC will be used to provide cyber security education and exposure events to K-12, Higher Education and professionals. It will improve the cybersecurity infrastructure and provide innovative training and education to strengthen Ohio's cyber workforce.

NSA GenCyber, NSA CNAP, NSF ITEST, OBR Workforce Development

o   Dr. Li's grants established a collaborative network of Centers of Academic Excellence in Cyber Defense, minority serving universities, and not-for-profit organizations for education and veteran services, to provide IT academic and career opportunities to students and teachers, veterans and transitioning workers from public sectors.

Information Technology Solution Center

o   Undergraduate and graduate students collaborate with faculty to develop and support IT solutions for private and public companies as well as government agencies. Established in 2012, the ITSC was awarded 73 projects totaling $2 million and supported close to 100 students.

School of
Information Technology
Experience+

Collaborate | Innovate | Apply

Computer Science
UNIVERSITY OF COLORADO **BOULDER**

OUR FACULTY CONTINUES TO GROW

Claire Monteleoni
Machine learning algorithms and theory for learning from data streams, spatiotemporal data, raw (unlabeled) data and private data, and applications with societal benefit.

Eric Rozner
Systems and networking, with specific interests in network management, datacenter networking, software-defined networking, wireless networking and mobile computing.

Alessandro Roncone
Design of human-aware robot control systems that allow robots to embrace the interaction with the human and the external world by design.

Bobby Schnabel
Former CEO of ACM and dean of the School of Informatics and Computing at Indiana University, and co-founder of the National Center for Women & Information Technology.

$6.6M
in new contract/grant awards for FY18

10
NSF CAREER Award winners on faculty

65
tenure-track and instructional faculty

NEW POST-BACCALAUREATE PROGRAM

Our new all-online degree in Applied Computer Science is for professionals with a prior bachelor's degree who are looking to make a career pivot. The goal is to prepare students with diverse academic backgrounds to enter the computer science field. Learn more at www.colorado.edu/cs.

Collaborative.

Entrepreneurial.

Interdisciplinary.

WWW.COLORADO.EDU/CS

Information Science

UNIVERSITY OF COLORADO **BOULDER**

Just the Facts
2018

The Human Side of Data

We blend computing with social science and the humanities for a hands-on, interdisciplinary research that investigates all aspects of human-data interaction. We use computing and data to address large societal issues.

Analyze. Design. Inform.

CU Boulder recruited top information scientists to identify the challenges of the future and train students who are motivated to succeed in the new data-driven economy. The result is one of the few programs in the country that offers a four-year undergraduate information science degree.

Students in our programs build knowledge through courses and hands-on projects that introduce cutting-edge data science tools and techniques. Students research how people and organizations interact with technology and information. They learn to collect, analyze and interpret data qualitatively and quantitatively, and design apps, algorithms, and interfaces.

3 YEARS OLD

Information Science was founded in 2015 as part of the new College of Media, Communication and Information. In 2016 we launched undergraduate and doctoral programs.

5.5 MILLION IN NEW FUNDING

including an NSF CISE Large and two NSF CISE Mediums.

2 NEW FACULTY

This year we welcome Robin Burke and Jason Zietz, making a total of 14 faculty.

9 NEW PHD STUDENTS

focusing on data science, recommender systems, social computing, learning and ethics.

Our Faculty

William Aspray
Professor
information policy, history, behavior, and work

Robin Burke
Professor
rec sys, personalization, social computing, digital humanities

Brian Keegan
Assistant Professor
computational social science, data science, large-scale collaboration

Ricarose Roque
Assistant Professor
learning, design, online communities, youth, creative computing

Steve Voida
Founding Assistant Professor
information overload, information sharing, ubiquitous computing

Lecia Barker
Associate Professor
information technology education, women in computing

Laura Devendorf
Assistant Professor, ATLAS Institute
design, human-machine interaction, computation and craft

Leysia Palen
Professor, Founding Chairperson
crisis informatics, cooperative work, social computing

Danielle Szafir
Founding Assistant Professor
data visualization, visual cognition, computer graphics, data science

Jason Zietz
Instructor
computing for well-being, motivation, mindfulness

Jed R. Brubaker
Founding Assistant Professor
identity & data, social media, post-mortem data, marginalized users

Casey Fiesler
Founding Assistant Professor
social computing, data & research ethics, internet law, fan communities

Michael J. Paul
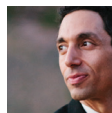Founding Assistant Professor
machine learning, NLP, social media analysis, health

Amy Voida
Founding Assistant Professor
philanthropic informatics, supporting technology use for non-profits

Connect with us:

colorado.edu/infoscience
@cuinfoscience

Be Boulder.

University of Colorado **Boulder**

**Department of
Computer Science**
Franklin College of Arts and Sciences
UNIVERSITY OF GEORGIA
cs.uga.edu

DEPARTMENT OVERVIEW

The Department of Computer Science at the University of Georgia was established in 1984 and has grown to include 34 faculty members, more than 195 enrolled graduate students and over 1,114 undergraduate majors, and to serve thousands of non-major undergraduates. It offers the B.S., M.S. with thesis and non-thesis options, and Ph.D. degrees in Computer Science, and its graduates have gone on to prestigious positions in academia, industry, and at private and federal research labs. In addition, the department offers a graduate certificate in cybersecurity and an undergraduate certificate in applied data science.

NEW FACULTY

In Spring 2018, the department has hired four new tenure-track faculty members in the areas of: computational science and high performance computing, machine learning, robotics, and hardware security, and authorized to hire an assistant professor in cybersecurity to start in August 2019. In addition, the department has hired a lecturer and an instructor in Summer 2018 to enhance its teaching mission. The recently recruited tenure-track faculty include Drs. In Kee Kim, Sheng Li, Ramviyas Nattanmai Parasuraman, and Le Guan.

RESEARCH HIGHLIGHTS

The annual research expenditure averaged over the last three years is $1,935,340 with grants being awarded by NSF, NIH, DARPA, DHS, ONR, and the industry. Faculty in the department have secured more than $1.6 million in new funding over the summer 2018.

DISTINGUISHED PROEFESSORSHIP IN COMPUTER SCIENCE

Patty and D. R. Grimes have established a distinguished professorship in computer science.

DEGREE PROGRAM HIGHLIGHTS

A new non-thesis M.S. degree in computer science was approved to start in Fall 2018. 25 doctoral degrees and 49 M.S. degrees were awarded to graduate students in the last three years. Recent doctoral graduates have joined University of Texas at Arlington, University of North Carolina at Asheville, and Auburn University among others, as tenure-track faculty.

STUDENT ENROLLMENT AND GROWTH

Graduate enrollment has grown by 54% in the last five years to include 195 students. Undergraduate enrollment has grown tremendously in the last five years by 90% to 1,114 majors.

CS STUDENTS WIN THIRD PLACE AT GSU HACKATHON!

Three students from the Computer Science Department: Omkar Acharya, Akshay Mendki and Ankitkumar Vaghela won the third prize at "HackGSU Spring 2018," a Hackathon event organized by Georgia State University and Major League Hackathon. The competition was held from March 23-25 and had 233 students from different universities across the nation. For more information: see cs.uga.edu/news-and-events/cs-students-win-3rd-place-gsu-hackathon.

UNIVERSITY of **HOUSTON**

DEPARTMENT OF COMPUTER SCIENCE

Fall 2018
Computing Research Association – Department Highlights

CELEBRATING
50
COMPUTER SCIENCE
YEARS

The department celebrates 50 years of achievements and success!

New Faculty (2018-2019)

Kevin Long
Professor of Practice
M.S., Rice University
Kevin has been an adjunct instructor at UH since 2000 teaching Computer Networking and Computer Organization and Architecture. His industry experience includes Cisco Systems and AT&T where he worked in network design and operations.

Carlos Alberto Rincon Castro
Instructional Assistant Professor
Ph.D., University of Houston
Carlos' dissertation focused on techniques to schedule real-time tasks using information theory principles. His research interests include real-time systems, information theory and storage systems.

Highlights

A 65% undergraduate and 31% graduate enrollment increase from fall 2015 to fall 2018 (4 years)

Xifeng Gao, a 2016 Ph.D. graduate, began as a tenure-track assistant professor of computer science at Florida State University. He has wide research interests that are related to geometry processing, such as Computer Graphics, Visualization, Multimedia Processing, Medical Imaging, Information Forensics, and Digital Fabrication. Read More.

Undergraduate student, *Nolan Shah*, received Honorable Mention for Outstanding Undergraduate Research by the Computing Research Association. Shah was honored for his research contributions in blockchain, smart contracts and decentralized autonomous organizations. Shah also designed and implemented a call content analysis engine for 9-1-1 call centers to defend against telephony denial of service attacks. Read More.

In celebration of his 50th birthday, *Venkat Subramaniam*, instructional professor of computer science, has completed 50 lectures during his 50th year to 50 Java user groups. His talks have taken him across the globe to places such as Austria, France, Italy, England, India, Switzerland, and many more. Read More.

Kudos to our students who received conference and travel scholarships: *Cristina M. Morales-Mojica* (Tapia, Grace Hopper); *Marjan Hosseinia* (Grace Hopper); *Fatima Zohra Daha* (Grace Hopper); *Suraj Maharjan* (European Chapter of the Association for Computational Linguistics).

ILLINOIS
Computer Science

cs.illinois.edu
cs.illinois.edu/cs-x
cs.illinois.edu/mcs-online

New Faculty Hires

Nancy Amato
Department Head & Abel Bliss Professor
(January 2019)

Abdussalman Alawini
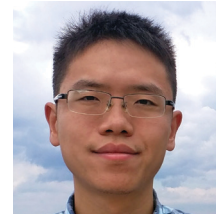Teaching Assistant Professor
(August 2019)

Dakshita Khurana
Assistant Professor Theory/Cryptography
(August 2019)

Lawrence Rauchwerger
Professor Parallel Computing
(August 2019)

Ling Ren
Assistant Professor Security
(August 2019)

David Varodayan
Teaching Assistant Professor
(August 2018)

Research Highlights

Internet of Battlefield Things

Prof. Tarek Abdelzaher is the academic lead of a **$25 million** effort funded by the Army Research Laboratory to build a foundation for the next-generation Internet of Battlefield Things.

Streamlining Complex Software

Prof. Vikram Adve is building on an under-utilized aspect of LLVM – the ability to optimize software at any point in its lifetime – as part of a new **$5.6 million** Office of Naval Research project.

Mobile Design Repository

Prof. Ranjitha Kumar has created the **world's largest database of mobile app designs**. Called Rico, it is a collection of more than 70,000 user interfaces from almost 10,000 Android apps.

Securing Smart Contracts

Prof. Grigore Rosu's research group and his **startup, Runtime Verification**, are driving improvements in blockchain contract security and reliability through tools such as the IELE virtual machine.

Top Honors

In the past 12 months, major recognitions have included: **ACM Fellow**: ChengXiang Zhai & Laxmikant "Sanjay" Kale; **ACM SIGKDD Doctoral Dissertation Award**: Xiang Ren (MS '16, PhD '18); **ACM SIGMM Outstanding Thesis Award**: Shannon Chen (PhD '16); **ACM SIGSAC Doctoral Dissertation Award Runner-Up**: Adam Bates; **AIMBE Fellow**: Saurabh Sinha; **Department of Energy's 40 Years of Research Milestones (twice!)**: William D. Gropp; **Householder Prize**: Edgar Solomonik; **IEEE Fellow**: Marco Caccamo & Tao Xie; **IISE David F. Baker Distinguished Research Award**: Sheldon Jacobson; **NSF CAREER Award**: Adam Bates, Andreas Kloeckner, Ranjitha Kumar, Ruta Mehta, & Matus Telgarsky.

Education Innovations

Illinois has added CS + Advertising, Economics, Geography & GIS, and Philosophy to our innovative **CS + X degree options**, which incorporate a strong grounding in CS with training in the arts and sciences.

This fall, Illinois CS launched a **professional Master of Computer Science on Coursera's massively open online course platform.** This Online MCS expands upon the existing MCS in Data Science track, which launched in 2016.

In May, **the first students completed the MCS-DS**, with several graduates visiting campus to join commencement ceremonies, where they heard from commencement speaker and PayPal cofounder **Max Levchin** (BS CS '97).

Study abroad... in Chicago! The new City Scholars Program gives Illinois CS students the opportunity to live, study, and intern in Chicago.

80
World-Class Faculty

$34.8 MILLION
in Research Expenditures for FY2017

1786
Undergraduate Enrollment

 # 5
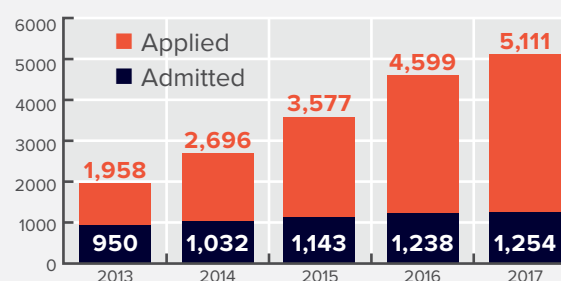Computer Science Graduate Ranking, *U.S. News & World Report*

1272
Graduate Enrollment

Unprecedented Undergraduate Demand & Talent

Year	Applied	Admitted
2013	1,958	950
2014	2,696	1,032
2015	3,577	1,143
2016	4,599	1,238
2017	5,111	1,254

33.1 INCOMING ACT (COMPOSITE AVERAGE)

71% MALE / 29% FEMALE (ENROLLED FRESHMEN)

Faculty statistics:
- Nine new tenure-track and teaching faculty members added fall 2018
- 177 total faculty members, including affiliates
- 43 IEEE Fellows, 12 AAAS Fellows, 5 ACM Fellows, 5 APS Fellows
- NAE Members: 8 active, 14 emeritus

Student statistics (as of fall 2018):
- ~ 2,300 undergraduate students
- ~ 620 graduate students
- At right, welcoming the Engineering at Illinois Class of 2022 with ECE ILLINOIS students in purple

Research awards:
- Associate Professor Yi Lu and her teammates from Stanford University were honored with the ACM SIGMETRICS Test of Time Award
- Professor R. Srikant was recognized with the IEEE Koji Kobayashi Computers and Communications Award for contributions to congestion control and scheduling in computer communications networks
- Professor Can Bayram and PhD student Dicky Liu took home three top awards while two other graduate students advised by Professor John Michael Dallesasse won the Best Poster Award at the 2018 CS MANTECH conference
- Professor Olgica Milenkovic and assistant professors Lav Varshney and Idoia Ochoa received Chan Zuckerberg Initiative grants to support the Human Cell Atlas
- Professor Wen-mei Hwu and six former students won the CGO Test of Time Award (also known as the Most Influential Paper Award
- Professors Nitin H. Vaidya, Romit Roy Choudhury, and affiliate Ranjitha Kumar were selected as recipients of the 2018 Google Faculty Research Awards

Other faculty awards:
- Professor Brian T. Cunningham was named as a distinguished lecturer for the IEEE Photonics Society
- Professor Naresh Shanbhag received the Best Paper Award at the 2018 IEEE International Symposium on Circuits and Systems

Departmental news:
- Professor Wen-mei Hwu stepped into the role of acting department head as Bill Sander was named interim director of the Discovery Partners Institute in Chicago
- Professor Michael Oelze was named as the Associate Head for Graduate Affairs following Professor Nitin Vaidya's tenure in the role during which he was instrumental in developing the MEng professional program
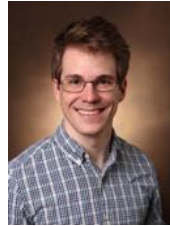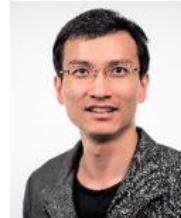
New Computing Faculty Hires:

Drew Davidson
Cybersecurity
Ph.D. U of
Wisconsin-
Madison
Joined 2018

Matthew Moore
Theoretical
Computer Science
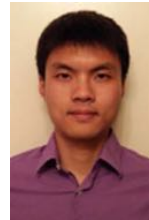Ph.D. U. Colorado
Joined 2018

Chunyun Pan
Beyond-CMOS
Nanoelectronics
Ph.D. Georgia Institute
of Technology
Joined 2018

Alexandru Bardas
Cybersecurity
Ph.D. Kansas State
Joined 2017

Garrett Morris
Functional
Programming
Ph.D. Portland
State
Joined 2017

Cuncong Zhong
Bioinformatics
Ph.D Central Florida
Joined 2016

Research Highlights:
- One NSF Presidential Early Career Award (PECASE) and two NSF CAREER Award recipients.
- Three IEEE Fellows.
- Brian McClendon, former vice president of engineering at Google; vice president of maps and business platform at Uber; and member of the National Academy of Engineering joined us as Research Professor.
- Cybersecurity-EECS team receives a Lablet from National Security Agency (NSA) to improve security for IoT. The multidisciplinary team including psychologists, sociologists and philosophers will advance the science for security of IoT. KU is one of only six universities selected to host an NSA lablet.
- EECS professors organized an all-day event that examined the consequences of misinformation in democratic societies and how to detect, address and combat the creation and dissemination of fake news.
- On-going NSF funded efforts to:
  - o study digital design of cybersecurity and privacy tools to protect public broadband users
  - o find new deterministic memory approach for predictable and high performance cyber physical systems
  - o develop a framework for overcoming the tangled mesh problem
  - o create a new profiling framework for managed language virtual machines
- Professor Bo Luo, et. al., received Annual Computer Security Applications Conference (ACSAC), 2017 Best Paper Award for "Supporting Transparent Snapshot for Bare-metal Malware Analysis on Mobile Devices"

Other Highlights:
- CyberCorps: Scholarship for Service Program -Jayhawk SFS was created with a $4.7 million, five-year with a grant from the NSF to train students who choose the professional specialty of cyber security.
- Jayhackers, the EECS cybersecurity group, participated in several cyber defense competitions (CDC) in AY17. The teams placed 2nd and 3rd at the CANSec Conference CDC; placed third in the At-Large Collegiate CDC; and competed in the Argonne National Labs CDC, placing 8th out of 25 teams.
- For 3rd consecutive year EECS faculty hosted a week long NSF/NSA GenCyber Summer Camp for Teachers, with ~24 participants/year. Participants came from around the country.
- Ph.D. student Patrick McCormick received 1st place in the student paper contest at the premier conference devoted to advancing radar technology, 2017 IEEE Radar Conference. His paper, entitled "Simultaneous Radar and Communications Emissions from a Common Aperture, Part I: Theory" was among 124 submitted from around the world.
- For the eighth time, KU has won a best paper award at the International Telemetering Conference. This year the paper titled "LDPC-coded APSK for Aeronautical Telemetry" written by Ph.D. student Sumant Pathak won the Best Graduate Student Paper award.

DEPARTMENT OF COMPUTER SCIENCE

NEW DEPARTMENT CHAIR

Professor Ming C. Lin
Elizabeth Stevinson Iribe Chair

Ming C. Lin is an ACM Fellow, IEEE Fellow, and Eurographics Fellow whose research areas include VR, computer graphics, robotics, human-computer interaction, geometric computing with applications to healthcare, urban computing, and automation.
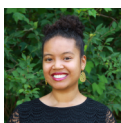
NEW HIRES

Professor Dinesh Manocha
Paul Chrisman Iribe Professor

Geometric and scientific algorithms with applications to computer graphics, robotics, and virtual reality

Assistant Professor Leilani Battle (Ph.D, MIT)
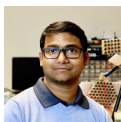
Databases and human-computer interaction

Assistant Professor Soheil Feizi (Ph.D, MIT)

Machine learning and statistical inference

Assistant Professor Huaishu Peng (Ph.D, Cornell University)

Human-computer interaction, personal fabrication

Assistant Professor Nirupam Roy (Ph.D, University of Illinois Urbana-Champaign)

Wireless networking, mobile computing, communication, sensing

Assistant Professor Abhinav Shrivastava (Ph.D, Carnegie Mellon University)

Computer vision, machine learning and robotics

STUDENTS

Computer Science is the most popular major at the University of Maryland.

3500+ majors (including **750+ first-year students**)
300 graduate students

Recent Ph.D graduates have taken faculty positions at universities including Duke University, Northwestern University, University of California San Diego, University of Massachusetts Amherst, Syracuse University, University of Michigan, University of Texas A&M, New York University, and University of Vermont.

NEWLY ENDOWED PROFESSORSHIPS

Two **Brin Family Endowed Professorships** in Theoretical Computer Science matched by **$1 million dollars from the State of Maryland**

Three **Capital One Endowed Chairs** in machine learning, data science and cybersecurity **matched by $2.1 million dollars from the State of Maryland**

THE BRENDAN IRIBE CENTER

New center for Computer Science will open in early 2019.

215,600 gross square feet, 20,000 square foot of community space, 5,300-square-foot makerspace, 8 classrooms, 5 seminar rooms

★ AWARDS & RECOGNITION

Associate Professor Jordan Boyd-Graber and **Assistant Professor Marine Carpuat** received NSF CAREER awards

Assistant Professor Marine Carpuat, **Professor Larry Davis**, and **Professor Philip Resnik** received an AWS Machine Learning Research Award

Assistant Professor Tom Goldstein received DARPA Young Faculty Award and was named an Alfred P. Sloan Fellow (in 2017).

Professor Ming Lin and **Professor Dinesh Manocha** received Alibaba Innovation awards

Professor Dinesh Manocha named AAAI Fellow

Professor Hal Daumé III and **Ph.D student Sudha Rao** received a Best Paper Award at the Association of Computational Linguistics

Recent Graduate, Dr. Srijan Kumar, advised by V.S. Subrahmanian and currently a postdoctoral researcher at Stanford University, has been selected as a runner-up for 2018 ACM SIGKDD Dissertation Award.

Professor Rance Cleaveland named Director of NSF Division of Computing and Communication Foundations

Professor Jeff Hollingsworth named Chief Information Officer of the University of Maryland - College Park

Professor Amitabh Varshney named Dean of the College of Computer, Mathematical, and Natural Sciences at the University of Maryland College Park

Professor Marine Carpuat and **Hal Daumé III**, and UMIACS collaborators, as part of the multi-institutional team, received $14.4M grant from IARPA to develop new language technologies

Professor Amol Deshpande's company WireWheel received $3.1 million in seed funding

Graduate student Tongyang Li received an IBM Ph.D fellowship

Graduate student Kianté Brantley received a fellowship from the ACM Special Interest Group on High Performance Computing (SIGHPC) and Intel
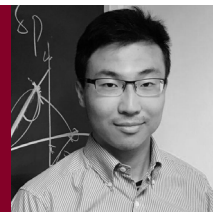
UMassAmherst | College of Information & Computer Sciences

COMPUTING FOR THE COMMON GOOD

Nine
New Faculty Hired in 2018

Madalina Fiterau
Assistant Professor
(Data Science)

Parviz Kermani
Senior Teaching Faculty

Andrew S. Lan
Assistant Professor
(Data Science)

Narges Mahyar
Assistant Professor
(Human-Computer Interaction)
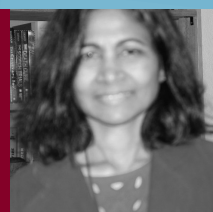
Marius Minea
Senior Teaching Faculty

Cameron Musco
Assistant Professor
(Data Science/Theory)

Justin Obara
Teaching Faculty

Adam O'Neill
Assistant Professor
(Security)

Swarna Reddy
Teaching Faculty

WE ARE HIRING!

CICS invites applicants for multiple tenure-track and non-tenure-track faculty positions in AY '19-'20.

See **cics.umass.edu/jobs**.

Research Activity
FY 2017

New Awards
$22.7 Million

Expenditures
$15.8 Million

Chan Zuckerberg Initiative awarded $5.5M to **Professor Andrew McCallum** for computational knowledge project.

Center for Data Science selected to join the IBM Research AI Horizons Network.

Assistant Professors **Daniel Sheldon** (data science) and **Subhransu Maji** (computer vision) received NSF CAREER Awards.

Professors **Deepak Ganesan, Benjamin Marlin, Donald Towsley** and **Prashant Shenoy** to play prominent role in Army Research Labs "Internet of Battlefield Things" center grant.

Best Paper Awards: ECCV 18 (**Bideau, Menon, Learned-Miller**); CVPR 18 - Runner Up (**Su, Maji, Kalogerakis, et. al.**); EMNLP 18 (**Strubell, Verga, McCallum, et. al.**)

Faculty Distinctions

16 Lifetime Achievement Awards

24 NSF Career Awards

5 Distinguished Professors

Three new professional society Fellows: **Andrew McCallum** (ACM), **Prashant Shenoy** (AAAS), **Hava Siegelmann** (IEEE).

Professors **Donald Towsley** and **Jim Kurose** awarded 2018 ACM SIGMOBILE Test of Time Award.

James Allan, professor and chair of the faculty, named to the Computing Research Association's Board of Directors.

Andrew McCallum appointed UMass Amherst Distinguished Professor.

DIVERSITY & INCLUSION

Emma Anderson and **Erika Dawson-Head** named the college's first directors of diversity.

CICS received **NCWIT Extension Services for Undergraduate Programs** grant to enhance retention and recruitment efforts for women.

Professor **James Allan** is a Co-PI on an NSF ADVANCE Institutional Transformation grant given to UMass Amherst to support a professional advancement model for underrepresented faculty in STEM.

ENROLLMENT OVER TIME

Undergraduate

Graduate

ENROLLMENT (FALL 2018)

2,382

259 Doctoral
343 Master's
49 CS Minor
492 IT Minor
107 Informatics
1,132 Bachelor's

THE UNIVERSITY OF MEMPHIS
Department of Computer Science
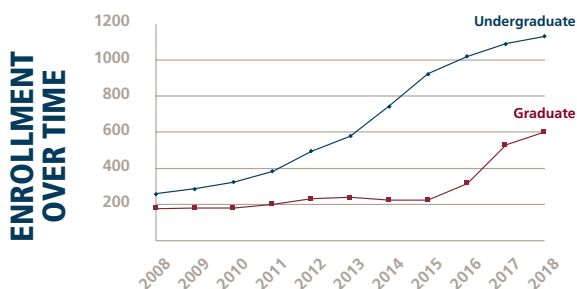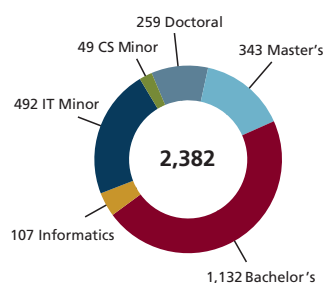
The Computer Science Department at the University of Memphis offers bachelor's, master's, and doctoral degrees in computer science, an accelerated bachelor's/master's program, and graduate certificates in Cyber Security and Data Science. Our 19 faculty members are highly productive researchers. The Department has been ranked 55th nationwide among CS departments in federally funded research expenditures, and 80th nationwide among 173 doctoral computer science programs in publication citations. We have 2 IEEE Fellows, an ACM Distinguished Speaker, and the first state-endowed chair of excellence in computer science in Tennessee.

Fall 2018 Tenure-Track Faculty Hires
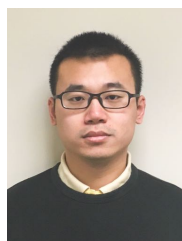
Xing Gao
Security, cloud computing
PhD, College of William and Mary, 2018

Myounggyu Won
Cyber physical systems, intelligent transportation systems
PhD, Texas A&M U, 2013
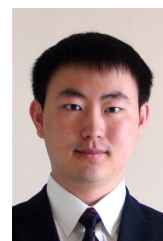
Xiaofei Zhang
Graph databases
PhD, HKUST, 2013

Research Highlights

- NIH-funded MD2K Center of Excellence (https://md2k.org), led by Dr. Santosh Kumar, received a new $1.75M CRI grant from NSF to enable reproducibility in mobile sensor big data research by using MD2K's software platforms, already being used in 14 research studies across 11 states producing 300 terabytes of sensor data.
- Profs. Vasile Rus and Scott Fleming received a $759K grant from NSF to apply educational technologies to early computer science courses in order to increase students' programming skills, self-efficacy, and retention rates.
- Prof. Dipankar Dasgupta was awarded a $206K CAE Cyber Security Workforce Education Grant to develop interactive, hands-on exercises to integrate into cyber security curricula.
- Prof. Dipankar Dasgupta received a Best Paper (Honorable Mention) award at ICISS 2017.

Student and Alumni Highlights

- PhD student Austin Henley accepted a tenure-track faculty position at the University of Tennessee, Knoxville.
- Six PhD students were accepted to the 2018 CRA-Women Grad Cohort Workshop, April 13-14 in San Francisco.
- A team of undergraduates from the Center for Information Assurance took first place in the Department of Energy Cyber Defense Competition held at Oak Ridge National Lab on April 6-7, 2018, and 1st place in the CANSec Student Cyber-Defense Competition on Oct. 29, 2017 at the Missouri University of Science and Technology.
- Former M.S. Applied Computer Science student Charles Lancaster, Jr., received the 2017 Sedgwick Most Valued Performer Award and the prestigious Diamond Award.

Other Highlights

- The Center for Information Assurance, led by Profs. Dipankar Dasgupta and Kan Yang, hosted the 10th annual Mid-South Cyber Security Summit on Oct. 12, 2017, and organized the Cyber Ambassadors Tech Camp introducing high-school students to ethical hacking, software patching, and coding in Summer 2018.
- The fourth annual meeting for the NIH-funded MD2K Center of Excellence was held at the UofM's FedEx Institute of Technology on Oct. 24-25, 2017.
- Prof. Vinhthuy Phan taught a series of workshops on using Python for data analytics, data science, and machine learning. Two workshops have been held so far, with four more planned for the rest of this year.

RESEARCH IMPACTS

$32M center to democratize system development.
The Center for Applications Driving Architectures, or ADA, led by Prof. Valeria Bertacco, will develop a transformative, "plug-and-play" ecosystem to enable and democratize hardware development.

Proposed post-quantum security NIST standard.
Prof. Chris Peikert and his collaborators have submitted a proposal for hardened encryption based on their pioneering work in lattice-based cryptography.

Foreshadow speculative attack exposed. A team of Michigan researchers and their collaborators have discovered a processor vulnerability has put secure information at risk in SGX-equipped Intel-based PCs manufactured since 2008.

***New York Times* video highlights election security risks.** Prof. J. Alex Halderman and the *New York Times* staged a mock election, documented in a video, to demonstrate how electronic voting machines can silently "steal" votes

$9.5M grant for reconfigurable architectures.
Prof. Ron Dreslinski has been funded by DARPA to develop a hardware architecture and software ecosystem that together can approach the power of ASICs with the flexibility of a CPU.

Superhuman fake news detector. An algorithm-based system by Prof. Rada Mihalcea and her collaborators identifies telltale linguistic cues in fake news stories, finding fakes up to 76% of the time compared to a human rate of 70%.

Continuous global censorship profiling. Research Prof. Roya Ensafi has launched Censored Planet, a system for continuously monitoring and visualizing internet censorship without reliance on special hardware, software, or access.

Detecting disease by analyzing speech. Prof. Emily Mower Provost has demonstrated the first automated system that mines the patterns of speech to identify patients with Huntington's disease.

NEW FACULTY

Nikola Banovic
Assistant Professor

Kimberly Khalsa Diaz
Lecturer

David Fouhey
Assistant Professor

Daniel Genkin
Assistant Professor

Mark Guzdial
Professor

Justin Johnson
Assistant Professor

John Kloosterman
Lecturer

Sindhu Kutty
Lecturer

Veronica Perez-Rosas
Asst. Research Scientist

Sara Rampazzi
Research Investigator

Alanson Sample
Associate Professor

Austin Yarger
Lecturer

DIVERSITY AND OUTREACH

New course introduces CS. *Discover Computer Science*, a new 1-credit class for students with no programming experience, is particularly aimed at first-year women.

Engaging women in CS research. New semester-long workshop gives 70 undergraduate women hands-on CS research experience.

Third annual CS Kickstart experience. Orientation held to welcome first-year women.

Connecting with diverse groups in CS. Sending 30+ students to Grace Hopper, Richard Tapia, SHPE, and NSBE conferences.

STUDENT NUMBERS AND GROWTH

2073 declared undergraduates, Winter 2018

784 undergraduate degrees conferred, 2017-18

217 PhD students, Winter 2018

30 PhDs conferred, 2017-18

51% of incoming first-year U-M students were taught CS in 2017-18

Undergraduate Enrollment Trends

	W08	W09	W10	W11	W12	W13	W14	W15	W16	W17	W18
Data Science									79	96	149
Computer Engineering	139	167	199	199	196	236	228	243	269	274	290
Computer Science	270	327	386	419	486	652	875	1063	1235	1390	1634

Computer Science Computer Engineering Data Science

Department of Computer and Information Science

UNIVERSITY OF MICHIGAN-DEARBORN
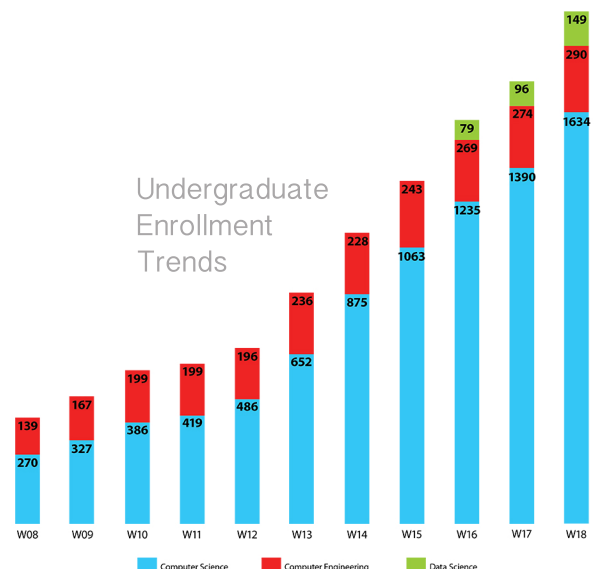
Overview:

- 16 tenured/tenure-track faculty members, including 2 NSF CAREER award recipients.
- 9 full-time/part-time lecturers.
- Over 800 students: > 630 undergraduates and > 170 graduates.
- 3 B.S. programs, 3 M.S. programs, and 1 Ph.D. program.
- Searches for 4 new faculty members are under the way.

New Faculty Hire:

- Birhanu Eshete, Assistant Professor, cybersecurity and machine learning, Fall 2018.

Research Highlights:

- *Research sponsors*: NSF, NIH, NHTSA, DOS, NASA, TARDEC, IBM, HP, Ford, Chrysler, TRW, Microsoft, Amazon, Sema, eBay, etc.
- *Selected recent grants*:
  - Marouane Kessentini, "Collaborative Research: Elements: Software: Software Health Monitoring and Improvement Framework", NSF, $299,534.
  - Marouane Kessentini, "Automated Software Evolution via Learning-Based Refactoring", Sema, Inc., $212,000.
  - Di Ma and Brahim Medjahed, "Developing Advanced Privacy Protection Algorithms for Connected Automotive User Experiences", Ford, $191, 528.
  - Qiang Zhu, "III:Small:Collaborative Research: Supporting Efficient Discrete Box Queries for Sequence Analysis on Large Scale Genome Databases", NSF, $222,277.
- *Publication venues*: TKDE, TODS, TOIS, TPAMI, VLDBJ, VLDB, ICDE, KDD, CIKM, AAAI, NIPS, TOSEM, TSE, ASE, FSE, TDSC, TIFS, ToSN, TSC, TMC, TPDS, TON, TC, USENIX SEC, CCS, NDSS, CVPR, ICDCS, ICPR, ICSOC, ICWS, INFOCOM, ISCA, SCC, WWW, etc.

Other Highlights:

- Marouane Kessentini received the prestigious 2018 Distinguished Researcher Award from Tunisian President Beji Caid Essedbsi.
- Marouane Kessentini was selected to serve as general chair of the 36th IEEE/ACM Int'l Conf. on Automated Software Engineering (ASE) to be held in Michigan in 2021.
- Birhanu Eshete and his co-authors received the Distinguished Paper Award at USENIX Security'2018.
- Di Ma is the funding director of the newly established Cybersecurity Center for Education, Research, and Outreach, 2018.
- Senior computing technologists and industry leaders from leading companies including eBay, IBM, Ford, GM, Bosch, Charhartt, and Lear joined the Professional Advisory Board (PAB) of the department in 2018.

UNIVERSITY OF MINNESOTA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NEW FACULTY

Favonia
Ph.D., Carnegie Mellon University
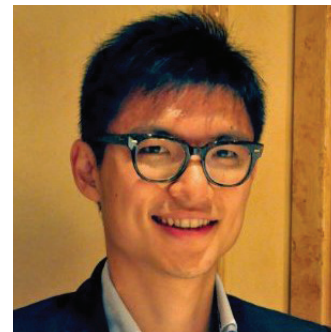Mechanization of mathematical proofs, proof assistants

Feng Qian
Ph.D., University of Michigan
Mobile systems, mobile networking, security

Evan Suma Rosenberg
Ph.D., University of North Carolina
Virtual reality, HCI, 3D user interfaces, and spatial interaction

Steven Wu
Ph.D., University of Pennsylvania
Data privacy, machine learning, and algorithmic economics

HIGHLIGHTS

- Professors Maria Gini, Tian He, and George Karypis were named **IEEE Fellows**, while Professor Mohamed Mokbel was named one of **ACM's Distinguished Members**.
- Distinguished McKnight Professor George Karypis received the **2017 IEEE ICDM Research Contributions Award**.
- Professor Maria Gini was named the recipient of the **2018 Harrold and Notkin Research and Graduate Mentoring Award**.
- Professors Dan Knights (CoreBiome) and Chad Myers (Bridge Genomics) **lauched startup ventures**.

- Assistant Professor Hyun Soo Park received the **NSF's CRII Award** as well as the **Office of the Vice President for Research's Futures Award** for his team's extraordinary, interdisciplinary research into brain activity .
- Assistant Professor Lana Yarosh was awarded a **Google Research Award** to seek ways for parents, children, and voice assistants to communicate more effectively.
- The 2018 year marks the (re)opening of the Shepherd Lab, **a state-of-the art 20,000-square-foot robotics lab**.

AT A **GLANCE**

ENROLLMENT	DEGREES GRANTED	FACULTY	RESEARCH IMPACT	EARLY CAREER AWARDS
1,682 Undergraduates	**344** Bachelors	**46** Tenure and tenure track	**49** Papers with 1000+ Google Scholar citations	**21** NSF CAREER Awardees
516 Graduates	**94** Masters	**13** Teaching faculty	**$10M** In research expenditures	**3** PECASE Recipients
13% increase from 2017	**28** Ph.D. degrees	**8** Research associates		

More information about CS&E:

cs.umn.edu | (612) 301-9515 | cscicomm@umn.edu

UNIVERSITY OF MINNESOTA
Driven to Discover℠

DEPARTMENT HIGHLIGHTS

Dr. Zhu Li (principle investigator, far left) secured $750,000 from NSF to help develop cutting edge, pre-competitive research in engineering and technology areas of interest to industry partners in the areas of big data and big learning. Along with Drs. Reza Derakhshani, Yugyung Lee, Praveen Rao and Sejun Song UMKC has established a Center for Big Learning under the umbrella of the Industry and University Cooperative Research Center Program of the NSF.

Dr. Deep Medhi (right) was named fellow by IEEE and was selected as NSF Program Director

overseeing the Computer and Networking Systems (CNS) Division under the Federal Government's Intergovernmental Personnel Act. Dr. Mehdi was, also, co-chair of the 2018 IEEE Conference in Kansas City, Missouri.

RESEARCH HIGHLIGHTS

- Dr. Praveen Rao – Contract with PlanIT Impact
- Dr. Reza Derakhshani – Zoloz "Single and Multiframe Deep Learning Super-Resolution"
- Dr. Zhu Li – Grant from Snap, Inc. to address video compression for storage
- Dr. Sejun Song – Laboratory Donation – Mr. Keumtak Oh, Ministry of Science & ICT, Republic of Korea
- Department of Defense Grant for members of the Tony Caruso Research Group

OTHER HIGHLIGHTS

- Dr. Praveen Rao received the National Research Council Research Associateship Senior Fellowship Award for his work at the Air Force Research Lab in researching future ways to detect cyber threats on Twitter.
- Dr. Reza Derakhshani was named one of 51 influencers in Missouri for a conversation series by *The Kansas City Star.*
- Dr. Vijay Kumar was named one of 43 Distinguished Members of ACM for his contributions to the field.
- Dr. Praveen Rao received the N.T. Veatch Award for scholarship and creativity for 2018-19.
- Dr. Ahmed Hassan was one of the 2018 Chancellor's Early Career Award for Excellence in Teaching recipients.
- Dr. Deb Chatterjee received a certificate from the IEEE Antennas and Propagation Society for his time as a reviewer.
- Dr. Baek-Young Choi co-chaired the September 2018 IEEE Smart Cities Conference in Kansas City, Missouri.

STUDENT HIGHLIGHTS

- CSEE PhD students, Khulud Alsultan, Mayanka Chandra Shekar and Vijaya Kumari Yeruva all received the 2018 Grace Hopper Celebration for Women in Computing Scholarship.
- The Research Team of Dr. Mostafizur Rahman was covered in *IEEE Spectrum* for their work with wiring in tight spaces.

STUDENT NUMBERS (Fall 2017 & Spring 2018 graduates)

- 147 undergraduate degrees
  - 416 graduate degrees
    - 10 PhDs

UNIVERSITY OF NEBRASKA AT OMAHA
COLLEGE OF INFORMATION SCIENCE & TECHNOLOGY

FAST FACTS

1,290 STUDENTS
997 UNDERGRADS
293 MASTERS & PHD

↑**36**% Bachelor Degrees*

↑**135**% Graduate Degrees*

↑**53**% Student Credit Hours*

↑**68**% Enrollment*

GRANT HIGHLIGHTS

Cybersecurity faculty received a **$2+ Million NSF/NSA Cybercorps Grant** to continue their work with the Scholarship for Service program.

The National Science Foundation awarded UNO and the University of Nebraska – Lincoln **$1 million** to expand their partnership in **utilizing big data science in improving aging, rural bridge health.**

The Sherwood Foundation awarded the Computer Science Education program over **$300K for the Enhancing Computer Science Education Graduate Program Pathways for K – 12 Teachers**, providing scholarships for CS teachers.

Awarded over **$4M in new R&D Grants** in 2017/18.

COLLEGE HIGHLIGHTS

Ranked **#2 "Best Cybersecurity Programs"** By Military Times in 2018.

The Computer Science Teachers Association's annual conference was hosted in Omaha and sponsored by IS&T. Over **300 teachers attended** a reception and open house at the college on June 9th, 2018.

The **STRATCOM Fellowship program** is a partnership with the U.S. Strategic Command, accepting civilian leaders from USSTRATCOM to study and work at UNO. Entering its 5th year, this partnership has received over **$750,000 in funding** so far.

IS&T **launched its second year of the Executive Masters of Science in Information Technology** after graduating its first cohort in August 2018.

The college's successful **Out of School Time iSTEM** has entered it's 4th year, **serving over 180 students** across 4 middle and 5 elementary schools in the Omaha metro area.

NEW FACULTY

Dr. Pei-Chi Huang
Computer Science
Cyber-Physical
Machine Learning

Dr. Gregory Gelfond
Computer Science
Theory of Computation
Data Structures

Dr. Tenace Kwaku Setor
Information Systems and Quantitative Analysis
IT Workforce Development

Dr. Rui Zhao
School of Interdisciplinary Informatics, Cybersecurity
Web, cloud, mobile security

Dr. George Grispos
School of Interdisciplinary Informatics, Cybersecurity
Cyberforensics

Dr. Andrea Wiggins
Information Systems and Qualitative Analysis
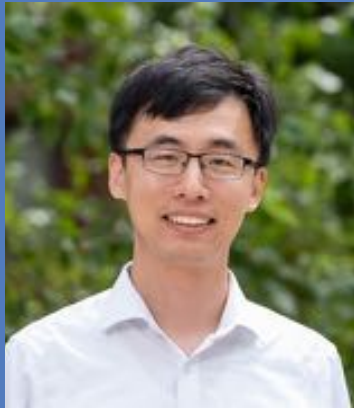*STS, Citizen Science,*
Open Collaboration

Dr. Christian Haas
Information Systems and Qualitative Analysis
Big Data Analyitcs

*2012 - 2017

UNIVERSITY OF NEW HAMPSHIRE
DEPARTMENT OF COMPUTER SCIENCE

4 FACULTY MEMBERS HIRED IN THE LAST 2 YEARS

DONGPENG XU
Cybersecurity

MAREK PETRIK
Machine Learning

MOMOTAZ BEGUM
Robotics

LAURA DIETZ
Information Retrieval

RESEARCH HIGHLIGHTS

- Marek Petrik awarded 2 NSF grants: Robust Reinforcement Learning for Invasive Species Management (2017) & Robust Reinforcement Learning Using Bayesian Models (2018)
- Momotaz Begum awarded an NSF grant: Robust Learning of Sequential Motion from Human Demonstrations to Enable Robot-Guided Exercise Training
- Laura Dietz won Vennevar Bush Best Paper Award at JCDL 2018
- Radim Bartos is working on a project, sponsored by NIST to achieve precise time synchronization over computer networks & the challenges in making these systems robust and secure
- Our faculty regularly publish at top conferences in the field such as AAAI, IJCAI, NIPS, ICML, SIGIR, IROS, and others

STUDENT HIGHLIGHTS

- Enrollments: 370 undergraduates, 54 MS students, & 27 PhD students
- 2018 freshman class is largest ever
- New undergraduate and graduate interdisciplinary programs in Analytics & Data Science
- Kristian Comer & Francesco Mikulis-Borsoi win 2018 UNH Holloway Competition
- UNH team finishes fourth at Northeast Cybersecurity Competition, hosted by UNH
- Several current and former students work at the UNH InterOperability Laboratory as members of the executive and project management teams
- Wildcat Women in Computer Science is a new student-led organization focusing on increasing participation of women in the field of computer science

Are you Querque enough?

COMPUTER SCIENCE at the University of New Mexico, located in Albuquerque, is not your average department. Our Faculty are fun, friendly and fantastically quirky. We see computing everywhere: in the top 10 supercomputers of New Mexico's National Labs, in DNA, immune cells, even in ants.

The Computer Science department has 17 tenure-track faculty and two lecturers (7 of us are women), with research expenditures averaging over $3.5M per year. UNM is the only Carnegie Highest Research (R1) University with a majority-minority student population. New Mexico has rich cultural diversity, a low cost of living and unparalleled opportunities to enjoy skiing, climbing, rafting and hiking.

New Faculty Joining the Department
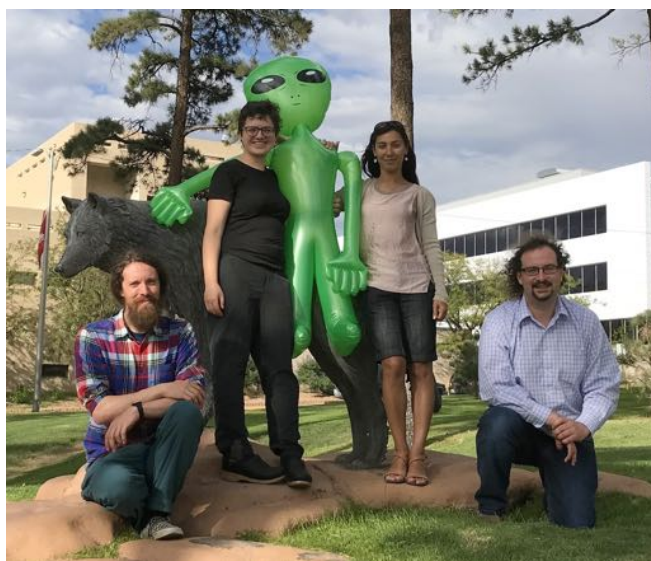
Tenure-track faculty hires in the past two years:

JEDIDIAH MCCLURG develops tools and techniques to help programmers write better code, including synthesis and verification of software-defined network (SDN) programs.

MARIE VASEK combines economics and computer security to analyze and fight cybercrime. A 2016 Google Anita Borg scholar, Marie is also a co-director at stopbadware.org.

MARINA KOGAN works in the area of Social Computing. She uses Human-Centered Data Science to understand and model how people self-organize and collaborate online in times of crisis.

MATT LAKIN explores molecular computers and synthetic gene networks, with biomedical applications such as autonomous nanomedicine and pathogen detection.

Right: UNM Computer Science just moved into the newly renovated Farris Engineering Center.

Growing Recognition and Diverse Impacts

- *Faculty Awards:* Prof. Lydia Tapia received the **2017 CRA Borg Early Career Award** and a **Best Paper award at ICRA 2018**, a premier venue for robotics research.
- *Postings:* Recent graduates have taken research and academic positions at sites including Sandia Laboratories, the University of Michigan, and Oxford University.
- *Pedagogy:* Our "NM-CS4All" program has trained **60 high school teachers** to teach introductory computer science.
- *Society:* Prof. Abdullah Mueen's research on monitoring social bots has been covered by national media including the **Washington Post and CBS**.
- *Funding:* UNM CS is leading the Decision Support team of the new, **$24 Million NM SMART Grid Center**, funded by the NSF.

Student Credit Hours and Degrees Soaring

Credit Hours in Upper-level CS Major Courses

UNC | SCHOOL OF INFORMATION AND LIBRARY SCIENCE
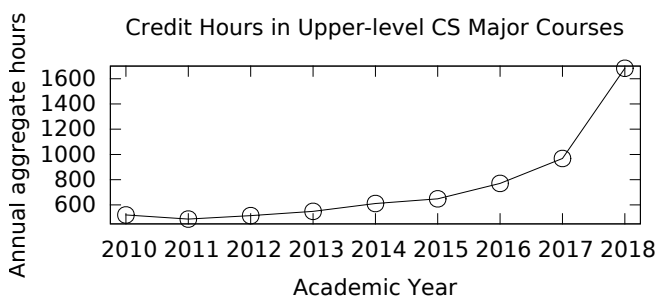
ACTIVE RESEARCH GRANTS & AWARDS:

National Science Foundation: David Gotz, Rob Capra and Jaime Arguello; Arguello (CAREER), Capra (CAREER), Arcot Rajasekar

National Institutes of Health–National Library of Medicine T15: (Javed Mostafa); **AHRQ:** Lukasz Mazur

Institute of Museum and Library Services: Sandra Hughes-Hassell, Amelia Gibson (CAREER), Cal Lee, Cliff Missen
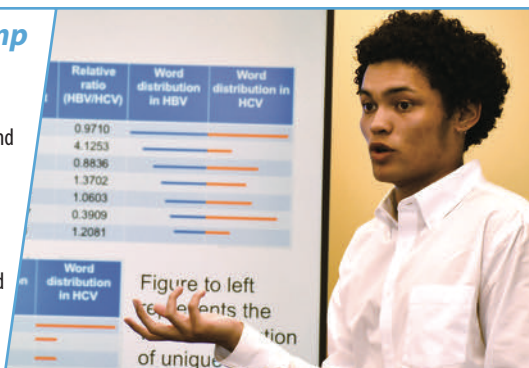
Foundations: Cal Lee (Andrew W. Mellon), Javed Mostafa (United Health), Brian Sturm (Heineman), Zeynep Tufekci (Democracy Now)

ORGANIZATIONAL NEWS:

- Launched new online master's degree in Digital Curation and Management. Learn more at digitalcuration.unc.edu

- Hosted lectures by Brewster Kahle (*Universal Access to All Knowledge*) and Cory Doctorow (*The Internet, Peak Indifference, and the Point of No Return*).

- Introduced "Information Science at Work" course, which took students to San Francisco to visit Instagram, Apple, LinkedIn, Carbon, Google, IDEO, and the Internet Archive.

- Environmental Protection Agency Library in RTP, which UNC operates under contract, named FEDLINK Information Center of the Year.

#1

Library & Information Management Program

2018 QS World University Rankings (Tied with The University of Sheffield)

Student Numbers

179 Undergraduates
244 Master's students
34 PhD students

LEADERSHIP & RECOGNITION:

Javed Mostafa – Editor of the *Journal of the Association for Information Science and Technology (JASIST)*.

Gary Marchionini – iSchools Board of Directors.

Cal Lee – Editor of *The American Archivist*.

Sandra Hughes-Hassell – President of Young Adult Library Services Association, UNC Office of the Provost Engaged Scholarship Award.

Zeynep Tufekci – Trusted source for media outlets seeking insights on the impact of social media and the growing influence of machine algorithms. Interviews with PBS News Hour and CNN, multiple *New York Times* op-eds, and analyses for *WIRED*, *POLITICO*, and the *MIT Technology Review*. Third TED Talk has received over 2 million views.

Master's program graduate **Natalie Ornat** – Pratt Severn Best Student Research Paper Award from ASIS&T. Current master's student **Devon Murphy** – ASIS&T Special Interest Group in Arts & Humanities Student Research Award.

HiDAV Bootcamp

As part of Project ENABLE, Carolina hosted the Health Informatics Data Analytics and Visualization (HiDAV) boot camp this summer. Students from HBCUs spent seven weeks on campus learning about health informatics and related careers. Learn more at enable.unc.edu

Cyber Carpentry

Sponsored by the National Science Foundation, the two-week workshop introduced doctoral students and post-doctoral associates from around the country to a variety of applications, platforms, and processes for data life-cycle management and data-intensive computation. Learn more at cybercarpentry.web.unc.edu

NEW FACULTY:

Sayamindu Dasgupta,
Assistant Professor

Expertise and interests:
Human-computer interaction, human-centered data science, learning technologies, digital media and learning

Marijel (Maggie) Melo,
Assistant Professor

Expertise and interests:
Innovation, critical maker culture, developing equitable and inclusive collaborative learning spaces in academic libraries

Casey Rawson,
Teaching Assistant Professor

Expertise and interests:
Teacher-librarian collaboration in STEM content areas, LIS education, equity and inclusion in youth services librarianship

Megan A. Winget,
Teaching Assistant Professor

Expertise and interests:
Digital preservation, digital collecting institutions, representation of non-textual materials, collaborative technologies

Yue Wang,
Assistant Professor

Expertise and interests:
Text data mining and related areas such as machine learning, natural language processing, and health informatics

COLLEGE OF COMPUTING AND INFORMATICS

CCI.UNCC.EDU

UNC CHARLOTTE

The College of Computing and Informatics (CCI) at UNC Charlotte is the **FASTEST-GROWING** College in the UNC System

3,000 STUDENTS

RESEARCH FUNDING: **$13M**

70 RESEARCH GRANTS

AVERAGE FUNDING PER FACULTY: **$270K**

And, We're Hiring...

24 NEW FACULTY TO MEET OUR GROWTH

DEBERATI BASU Teaching Assistant Professor Software and Information Systems	**JEREMY JAY** Research Assistant Professor Bioinformatics and Genomics	**NADIA NAJJAR** Lecturer Software and Information Systems
MEI CHEN Associate Professor Computer Science	**JASON KARP** Lecturer Computer Science	**ALBERT PARK** Assistant Professor Software and Information Systems
QIONG CHENG Lecturer Computer Science	**SIDDHARTH KRISHNAN** Assistant Professor Computer Science	**ANITA RANA** Research Associate Bioinformatics and Genomics
ISAAC CHO Research Assistant Professor Computer Science	**KEVIN LAMBIRTH** Research Associate Bioinformatics and Genomics	**REBEKAH ROGERS** Assistant Professor Bioinformatics and Genomics
ELIZABETH COOPER Assistant Professor Bioinformatics and Genomics	**MINWOO LEE** Assistant Professor Computer Science	**GABRIEL TEREJANU** Associate Professor Computer Science
DONG DAI Assistant Professor Computer Science	**STERLING MCLEOD** Lecturer Computer Science	**PU WANG** Assistant Professor Computer Science
NICHOLAS DAVIS Assistant Professor Software and Information Systems	**MARLON MEJIAS** Teaching Assistant Professor Software and Information Systems	**ADAM WHALEY** Teaching Assistant Professor Bioinformatics and Genomics
TONYA FREVERT Research Assistant Professor Software and Information Systems	**THOMAS MOYER** Assistant Professor Software and Information Systems	**JOHN WILLIAMS** Research Engineer Bioinformatics and Genomics

#1 Producer of CS Degrees in NC

#1 Female CS Graduates in NC

#1 Hispanic CS Graduates in NC

#2 African-American CS Graduates in NC

REDEFINING DIVERSITY AND INCLUSION IN CS

CCI creates an inclusive climate for all students, staff and faculty. Our goal is to expand and engage the participation of students that traditionally have not entered the computing field. We believe that in order to innovate, we must cultivate an atmosphere that is welcoming across all aspects of human diversity. We strive to be a preeminent creator and provider of talent and intellectual capital by empowering diversity of thought and experiences.

A MESSAGE FROM OUR DEAN
Dr. Fatma Mili

CCI strives to embody the mission of UNC Charlotte as a **Public Urban Research University**. We are committed to the students of our region and state and celebrate their diverse talents, experiences, and expectations. We are a research-intensive college with a passion for knowledge discovery and innovation, especially as they address some of the grandest challenges we face locally and globally.

Our Mission and Values
CCI leads Education and Innovation in Computing and Informatics for the Betterment of Society.

We are Committed to:
- Cultivating an inclusive culture dedicated to student success and equity in education
- Stimulating innovative and high risk, high impact research and development
- Catalyzing a resilient and ethical society and communities with educated caring citizens

We are driven by the following guiding values:
- To acknowledge inequity and commit to do everything in our power to address it
- To take responsibility for the ethical implications of technology in everything we do
- To value community and value the well-being and sense of worth of all members

CCI cultivates strong relationships with public and private partners sharing the same passion and values and committed to serving our students, our region, and preparing a generation of **competent** professionals, **compassionate** citizens, and **innovative** leaders.

DEPARTMENTS

- Computer Science
- Software and Information Systems
- Bioinformatics and Genomics
- School of Data Science

DEGREES

- B.S. in Computer Science and Data Science
- B.A. in Computer Science
- M.S. in Computer Science, Cybersecurity, Bioinformatics and IT
- P.S.M. in Data Science and Business Analysis, Health Informatics
- Ph.D. in Bioinformatics, Computational Biology, Computing and Information Systems. and Data Science

New Faculty 2018-2019

Adam Czajka
Biometrics and Security

Siddharth Joshi
Architectures for Machine Learning

Corey Pennycuff
Teaching Theory and Programming

Research and Graduate Studies

- 137 graduate students enrolled (81 international, 56 domestic)

- 19 Ph.D. graduates in 2018 (five took faculty positions, two postdocs, 12 in industry)

- 71 new research awards ($11.5 million), $12.5 million expended (18% increase over 2017)

- Prof. Danny Chen receives Cozzarelli Prize for work on deep learning to discover fungal parasite networks' mechanisms of control over ants

- Prof. Jane Cleland-Huang receives honorary doctorate from University of Gothenburg

PhD enrollment

Research Expenditures
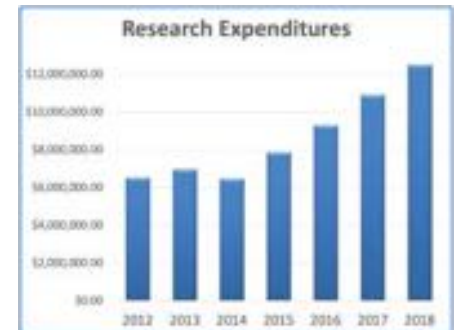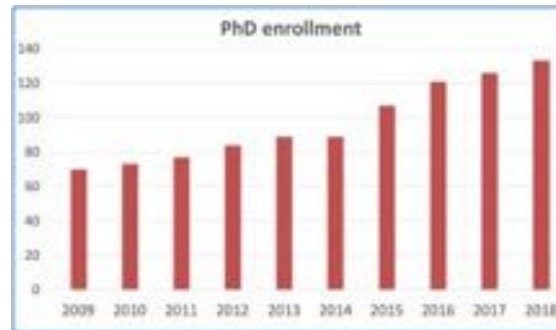
Undergraduate Studies

- 147 B.S. graduates in 2018

- 430 majors (sophomore through senior year)

- Silicon Valley Semester: 17 CSE students lived in Palo Alto (up 70%), took classes and worked at Bay Area firms during the spring semester; scaling up to 25 students for 2019
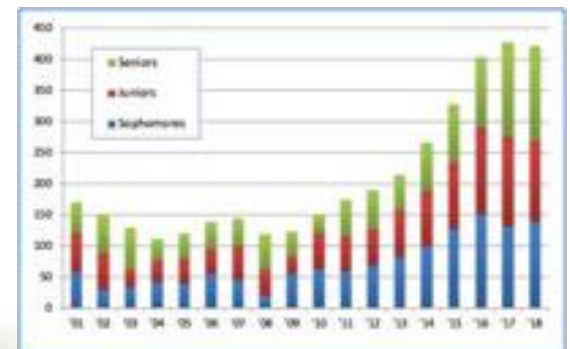
Dr. Mohammed Atiquzzaman

Edith Kinney Gaylord Presidential professor of Computer Science at the University of Oklahoma.

Editor-in-Chief of Journal of Networks and Computer Applications and the founding Editor-in-Chief of Vehicular Communications

Received the IEEE 2018 Satellite and Space Communications Technical Recognition Award for valuable contributions to the Satellite and Space Communications scientific community.

Received the 2017 Distinguished Technical Achievement Award from IEEE Communications Society in recognition of outstanding technical contributions and services in the area of communications switching and routing.

Dr. Amy McGovern

Professor in the School of Computer Science and Adjunct Professor in School of Meteorology.

Professor McGovern's research focuses on machine learning methods and applications with a focus on severe weather. She also works with drones and K-12 outreach to interest more students in Computer Science.

Professor McGovern's research in meteorology has demonstrated that machine learning can be used to improve predictions of severe weather, thus saving lives and property.

Dr. Chongle Pan

Associate Professor in the School of Computer Science and the Department of Microbiology and Plant Biology at the University of Oklahoma.

Developed advanced bioinformatics algorithms for analysis of big biological data with high-performance computing, machine learning, and graph theory. These algorithms enabled biological discoveries about soil microbiota and carbon cycling.

Published more than 60 peer-reviewed journal articles with over 2000 citations. The research was funded by the Department of Energy and the Department of Defense.

Computer Science is a rapidly evolving profession. Our goal is to prepare you to grow with it during your education and beyond.

156 Full-Time Faculty

OFFERING
Bachelor's
Master's
Doctoral
DEGREES

More than **600** Undergraduate Students

With a balanced curriculum and variety of minors, the Computer Science undergraduate program is **broad** AND **flexible.**

About Norman

Reasonable cost of living. Part of this is the very reasonable housing expenses. Rents for a one bedroom apartment begin around $500, and a variety of units are within walking distance to campus.

Championship sports teams. OU football, seven national championships and five Heisman Trophy winners, and the Oklahoma City Thunder major league basketball team.

cs.ou.edu | (405) 325-4042 | cs@ou.edu

The University of Pennsylvania

Penn is the birthplace of the modern computer. Our Computer and Information Science Department has strong collaborations with Penn's nearby Schools of Law, Business, Medicine, Education, Communications, Social Policy and Practice, and Arts and Sciences.

Faculty:
- 35 tenure-track + 2 hires starting in January
- 11 teaching-track including 2 new hires
- 3 research-track including 1 new hire

Students:
- 138 PhD
- 621 Master's (6 degree programs)
- 926 undergraduates (6 degree programs)

Plans for Growth

As part of Penn Engineering's ambitious growth plans, our department is aggressively hiring. Areas of strength include programming languages and formal methods, databases, networks and distributed systems, machine learning and data science, natural language processing, robotics and vision, and computational social science.

New Faculty Members, 2018-19

Sebastian Angel, Raj and Neera Singh Assistant Professor (Jan 19). *PhD, 2018, UT-Austin.* Computer security, computer systems, networking.

Osbert Bastani, Research Assistant Professor. *PhD, 2017, Stanford.* Programming languages, formal methods, machine learning.

Anindya De, Assistant Professor (Jan 19). *PhD, 2013, UC Berkeley.* Complexity theory, analysis of Boolean functions, learning theory, applied probability.

Eric Fouh Mbindi, Assistant Professor of Practice. *PhD, 2015, Virginia Tech.* Computer science education, learning technologies.

Clayton Greenberg, Lecturer. *PhD, 2018, Saarland University.* Natural language processing, data science.

Data Science Master's Degree

Penn launched a new Master's of Science in Engineering degree in Data Science, which focuses on the convergence of computer science, statistical methods, optimization, and application domains. The program's 86 students do an applied practicum project as well as coursework.

MCIT Online

In January 2019, Penn Engineering will launch the Online Master of Computer and Information Technology (MCIT). This unique degree is for students who do not have a prior computer science background – supporting "re-skilling" in today's tech-oriented workforce.

Computer Science Community Leadership

Susan Davidson serves as Chair of the CRA and Sampath Kannan is a member of the Computing Community Consortium. Jonathan Smith is a Program Manager at DARPA.

Faculty and Student Highlights

- Insup Lee was named an ACM Fellow.
- Rajeev Alur was named a Distinguished Alumnus of IIT Kanpur.
- Matt Blaze was promoted to full Professor.
- Linh Thi Xuan Phan received an NSF CAREER Award.
- Chenfanfu Jiang received an NSF CRII Award.
- Steve Zdancewic and Arvind Bhusnurmath won awards for excellence in teaching.
- PhD alumnus Justin Hsu won the SIGPLAN John C. Reynolds Dissertation Award.
- PhD student Anne Cocos received a Google PhD Fellowship.

PittComputing&Information

NEW FACULTY HIRES

MATT BURTON
Lecturer, Department of Information Culture and Data Stewardship

TIMOTHY HOFFMAN
Lecturer, Department of Computer Science

MARCIA RAPCHAK
Lecturer, Department of Information Culture and Data Stewardship

ERIN WALKER
Associate Professor, Department of Computer Science; Research Scientist, Learning Research and Development Center

To view available faculty positions: **sci.pitt.edu/recruiting**

FACULTY & RESEARCH HIGHLIGHTS

Associate Professors Rebecca Hwa and Yu-Ru Lin were selected for **DARPA's Understanding Group Biases Disruptioneering Program**.

Associate Professor Konstantinos Pelechrinis was named one of **The Incline's Who's Next: Transit Class** - a group of under-40 professionals who are shaping the future of mobility for planes, trains, automobiles, bikes and walkers in Pittsburgh.

Professor Diane Litman is part of a nearly $1.4 million award from the **Institute of Education Sciences** for a project titled, "Enhancing Undergraduate STEM Education by Integrating Mobile Learning Technologies with Natural Language Processing."

ORGANIZATION HIGHLIGHTS

4-YEAR UNDERGRADUATE DEGREE PROGRAMS
The School of Computing and Information will begin admitting first-year students to its undergraduate programs starting in the Fall 2019 semester. This curriculum's focus on polymathy will expand students' knowledge to allow them to see commonalities across disciplines.

MODELING AND MANAGING COMPLICATED SYSTEMS (MOMACS) INSTITUTE
The Modeling and Managing Complicated Systems (momacs) Institute was launched this year. This Institute will encourage multidisciplinary collaboration to solve large-scale challenges through systems modeling and artificial intelligence.

PROFESSIONAL INSTITUTE
The School of Computing and Information has launched a Professional Institute to close critical skill gaps by providing specialized education to professionals working in the fields of computing and information. Its first offerings will be in the area of Cybersecurity.

I3 BUILD SUMMIT
The iSchool Inclusion Institute (i3) hosted its inaugural i3 Build Summit, which brought together members from higher education, industry, and foundations to discuss diversity and inclusion in the fields of computing and information.

INTELLIGENT SYSTEMS PROGRAM CELEBRATES 30TH ANNIVERSARY
The Intelligent Systems Program (ISP) celebrated its 30th Anniversary at the University of Pittsburgh. To celebrate, ISP, a multidisciplinary graduate program focused on applied artificial intelligence (AI), hosted a symposium that featured keynotes and panels on various areas of AI. Pitt alum Bryan Salesky, CEO of Argo AI, gave the opening keynote presentation.

University of Rochester
Department of
Computer Science

Hiring tenure-track and teaching faculty, postdocs, and graduate students

cs.rochester.edu

Wegmans Hall
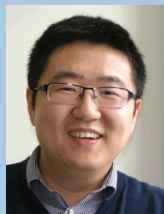New home of Computer Science

Recent Hires

Zhen Bai
Human-Computer Interaction

PhD, University of Cambridge
Postdoctorate, CMU

Sreepathi Pai
Heterogeneous Systems

PhD, IISc
Postdoctorate, UT Austin

Chenliang Xu
Computer Vision

PhD, U. Mich. Ann Arbor

Yuhao Zhu
Energy-Efficient Systems

PhD, UT Austin

Faculty Highlights

2018
- Ehsan Hoque receives NSF CAREER Award.
- Henry Kautz named NSF Division Director for Information and Intelligent Systems.
- Jiebo Luo receives the IEEE Region 1 Technological Innovation (Academic) Award for contributions in computer vision and data mining.
- Yuhao Zhu receives Honorable Mention in the SIGARCH/TCCA Outstanding Dissertation Award Competition.

2017
- John Criswell receives NSF CAREER Award.
- Sandhya Dwarkadas elevated to IEEE Fellow.
- Sreepathi Pai's team named one of five champions in the IEEE GraphChallenge.

2016
- Sandhya Dwarkadas named the Albert Arendt Hopeman Professor of Engineering.
- Ehsan Hoque wins the MIT TR35 and World Technology Awards.
- Michael Scott named the Arthur Gould Yates Professor of Engineering.

Undergraduate and Graduate Highlights

2018
- Zhengyuan Yang wins the 2018 ICPR Best Industry Related Paper Award.
- BRAID funding extended through 2019.
- Vivian Li wins honorable mention in the CRA outstanding undergraduate researcher award.

2017
- 33 percent of our BA/BS graduates are women, thanks in part to the BRAID initiative.

2016
- Mitchell Gordon wins CRA's Outstanding Undergraduate Researcher Award.

COMPUTER SCIENCE AND ENGINEERING
cse.sc.edu

UNIVERSITY OF
SOUTH CAROLINA
College of Engineering
and Computing

NEW FACULTY HIRES

Dr. Pooyan Jamshidi
Ph.D. in Computing
Dublin City University

Intersection of machine learning, systems, and software engineering; understanding performance behavior of highly-configurable systems and solving computer system challenges (e.g., memory leak, energy consumption) for distributed machine learning systems.

Dr. Sanjib Sur
Ph.D. in Computer Engineering
University of Wisconsin-Madison

Wireless systems and architectures, millimeter-wave communications and networks, Internet-of-Things connectivity and sensing systems.

Dr. Qiang Zeng
Ph.D. in Computer Science and Engineering
Penn State University

Software and Systems Security including vulnerability discovery, PoC exploit generation, runtime defense generation, and automatic patch generation.

DEPARTMENT SUMMARY

- 23 tenured and tenure-track faculty (10 are NSF CAREER Award winners, one serves as the Chair of the USC Faculty Senate, and one serves as the Associate Dean for Diversity, Engagement, and Inclusion); 6 instructors

- **Focal Research Areas:** artificial intelligence, bioinformatics, computer architecture, computer vision, cybersecurity, data science, machine learning, mobile computing, robotics, software engineering, and wireless networking

- Faculty and student research is funded currently by NSF, ONR, NIH, DoE, IARPA, and AFRL, as well as several corporations and South Carolina agencies.

- CSE is an NSF Research Experiences for Undergraduates (REU) site in Computational Robotics reu.cse.sc.edu.

- CSE is one of 15 BRAID (Building, Recruiting, and Inclusion for Diversity) Initiative Institutions anitab.org/braid-building-recruiting-and-inclusion-for-diversity

UNDERGRADUATE PROGRAMS
cse.sc.edu/undergraduate

- Majors (935 students): Computer Engineering (222), Computer Information Systems (166), Computer Science (547)

- Minors: Data Science; Computer Science; Applied Computing

- Cybersecurity Specialization in Information Assurance

GRADUATE PROGRAMS
cse.sc.edu/gradate

- Total Enrollment = 168; M.S. in Information Security (new in fall 2017), M.S. in Software Engineering, M.S. and Ph.D. in Computer Science, M.S. and Ph.D. in Computer Engineering, Certificate in Cyber Security Studies

STUDENT HIGHLIGHTS

- Active Student Organizations: ACM, Carolina Gamer's Club, Cybersecurity Club, IEEE, Minorities in Computing, Upsilon Pi Epsilon, Women in Computing.

- 75 CSE students have attended the Grace Hopper Celebration of Women in Computing over the last 4 years.

- Students Awards: GEM National Consortium Fellows, Goldwater Scholar, Upsilon Pi Epsilon Academic Achievement Award

- 180 CSE seniors formed 36 teams to complete senior design capstone projects; a gallery of capstone project video demos is at: cse.sc.edu/capstone/project-videos-2018

OTHER HIGHLIGHTS

- CSE will open a new Computer Engineering Lab in spring 2019 to support new, interactive courses in embedded systems and the Internet-of-Things.

- Dr. Yonghong Yan was highlighted in the following article: *New Memory Challenges Legacy Approaches to HPC Code*

- Dr. Ioannis Rekleitis was named a 2018 USC Breakthrough Star for his outstanding leadership in robotics research.

NEW SPACE

- The Department of Computer Science and Engineering (CSE) recently moved into the Center for Applied Innovation and Analytics in the Storey Innovation Center.

- This new space houses CSE faculty/staff offices, seminar/meeting rooms, research labs, a data center, and a new experiential capstone computer lab.

Department of Computer Science and Engineering
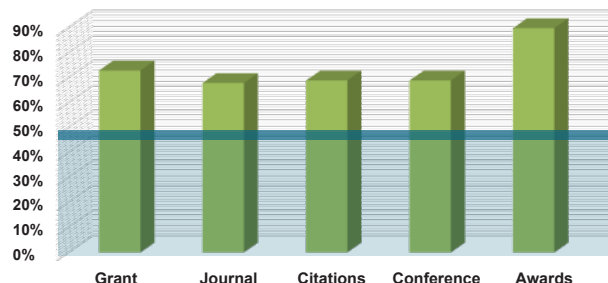## www.usf.edu/engineering/cse

2017-2018 Degrees

BS in Computer Science (134)
BS in Computer Engineering (45)
BS in Information Technology (116)
MS in Computer Science (49)
MS in Computer Engineering (7)
MS in Information Technology (11)
PhD in Computer Science and Engineering (12)
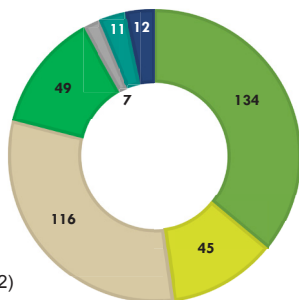
● BS CS ● BS CpE ● BS IT ● MSCS ● MSCpE ● MSIT ● PhD

● University of South Florida
▬ National Median

Academic Analytics AAD, public universities, 2016.

- The Department has 28 tenure-stream faculty and 11 full-time instructors.

- The BS in Cybersecurity major started in Spring 2018, resulting in four major choices: Computer Science, Computer Engineering, Information Technology, and Cybersecurity.

- Faculty members are currently executing $9.6 million in active external research grants from NSF, DoD, NIH, NIST, industry, and state sources. Twelve Department faculty members are NSF CAREER awardees.

- The Department awarded 295 BS degrees, 67 MS degrees, and 12 PhD degrees in academic year 2017.

- USF CSE is in the top sixth (rank 31) of Computer Science departments at U.S. public universities, according to most recent Academic Analytics data based on Scholarly Research Index.*
  uses default weights for grants, articles, conferences, awards, and citations.

- In 2018, the Florida Board of Governors designated USF Tampa as a Preeminent State Research University, placing USF in the most elite category among the state's 12 public universities.

New Faculty 2017-2018

Marvin Andujar, Brain-computer interfaces; AI and Cognitive Computing
Generation Google Scholar and Intel Scholar

Shaun Canavan, AI and cognitive computing; facial feature detection and tracking

John Licato, Computational modeling of cognitive reasoning; artificially intelligent reasoners
AFOSR Young Investigator Program Awardee
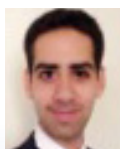
Robert Karam, Hardware security; reconfigurable computing; bioimplantable devices

Mehran Mozaffari Kermani, Fault diagnosis and tolerance in cryptography; cryptographic engineering; computer arithmetic
NSERC Postdoctoral fellowship at Princeton University

New Faculty 2018-2019

Tempestt Neal, Scalable biometrics; mobile biometrics; AI and Cognitive Computing
NSF Cyber Corps Fellow

Giovanni Luca Ciampaglia, Computational social science; network science; data science

Attila Yavuz, Applied cryptography; privacy enhancing technologies; light-weight cryptography; cybersecurity
NSF CAREER Awardee

William Oropallo (Instructor), NURBS; point clouds; geometric algorithms

Jason Lewis (Instructor), Cybersecurity; digital forensics; computer science cybersecurity education

"Tampa Bay is home to 19 corporate headquarters with over $1 billion in annual revenue, eight of which are Fortune 1000 companies.[1] Tampa is also home to USSOCOM. Tampa is the nation's second-fastest-growing tech hub.[2] Send us your best students. We are hiring tenure stream faculty and full-time instructors."

[1]*Greater Tampa Chamber of Commerce* • [2]*Tampa Bay Tech*

DEPARTMENT BY THE NUMBERS

Faculty
92 faculty members: **43** tenure-track,
31 research faculty, **18** teaching faculty

Students
4,082 students: **282** PhD, **2,600** master's,
1,200 undergraduates

Academy Members and Society Fellows:
1 NAE, **2** NAS, **12** AAAI, **24** additional society Fellows,
including IEEE, ACM, AAAS

3 ACM Sig Chairs: SIGSOFT (Nenad Medvidovic), SIGAI
(Sven Koenig) and SIGSPATIAL (Cyrus Shahabi)

NEW FACULTY RECRUITED 2016-2018

Assistant Professor Barath Raghavan
PhD UC San Diego
Network protocol design, internet architecture, energy efficiency.
*Previous affiliation: Berkeley International Computer
Science Institute*

Assistant Professor Stefanos Nikolaidis
PhD Carnegie Mellon University
Human-robot interaction, game theory, robot planning
under uncertainty.
Previous affiliation: Carnegie Mellon University

Assistant Professor Heather Culbertson
PhD University of Pennsylvania
Haptic devices, human-robot interaction, virtual reality.
Previous affiliation: Stanford University

Assistant Professor Bistra Dilkina
PhD Cornell University
Discrete optimization, machine learning, AI for social good.
Previous affiliation: Georgia Institute of Technology

Assistant Professor Xiang Ren
PhD University of Illinois Urbana–Champaign,
Postdoc Stanford University
Machine learning, data mining, natural language processing.
Previous affiliation: Stanford University

Assistant Professor Jyotrimoy Deshmukh
PhD University of Texas, Austin
Cyber-physical systems, embedded control systems,
time-series data.
Previous affiliation: Toyota Motors North America R&D

Assistant Professor Haipeng Luo
PhD Princeton University, Postdoc Microsoft Research
Online learning, advanced boosting algorithms, game theory,
machine learning.
Previous affiliation: Microsoft Research

GRANT HIGHLIGHTS

Milind Tambe; Realizing Cyber Inception: Towards a
Science of Personalized Deception for Cyber Defense;
US Army; **$6,406, 947**

Ramesh Govindan; Alliance for IoBT Research on
Evolving Intelligent Goal-driven Networks (IoBT
REIGN); University of Illinois; **$4,508,114**

Laurent Itti; New Algorithms for Lifelong Learning;
Intel Corporation; **$566,909**

Ram Nevatia; Semantic Entity Detection and Local-
ization in Videos using Natural Language Queries;
US-Office of Naval Research; **$449,586**

MAJOR DISTINCTIONS 2017-2018

Office of Naval Research Young Investigator Award
received by **Hao Li**

IEEE Internet Award received by **Ramesh Govindan**

IJCAI John McCarthy Award received by **Milind Tambe**

IEEE Computer Science and Engineering Undergradu-
ate Teaching Award received by **Sven Koenig**

OTHER FACULTY DISTINCTIONS 2017-2018

American Association for the Advancement of
Science Fellows (**Sven Koenig and Paul Rosenbloom**);
IEEE Fellow (**Ewa Deelman**); ACM Fellows (**Carl
Kesselman, Craig Knoblock**); AAAI Fellow (**Gaurav
Sukhatme**); 2018 SIGKDD Doctoral Dissertation Award
(**Xiang Ren**); 2017 Best Paper in IEEE Robotics and
Automation Letters (**Stefan Schaal**); IEEE Internation-
al Conference on Software Architecture, ICSA 2018
Best Paper (**Nenad Medvidovic**); Distinguished Paper
Award, The IEEE Conference on Software Testing,
Validation and Verification (**William Halfond, Sonal
Mahajan, Abdulmajeed Alameer)**, Association for
Psychological Science Fellow (**Shrikanth Narayanan**).

STUDENT DISTINCTIONS

Undergraduate student **Rachit Kataria** was awarded a
Kleiner, Perkins, Caufield and Byers (KPCB) fellowship,
2018, which offers top U.S. college students experi-
ence and mentorship with prominent Silicon Valley
startups.

PhD student **Stephanie Kemna** was part of a team
honored with a 2017 NATO Science and Technology
Organization's (STO) Scientific Achievement Award for
its work on the Next Generation Autonomous Systems
(NGAS) project.

A team of students won first *and* second place in
the Southern California regional contest of the "Olym-
pics of computer programming," otherwise known as
the Association for Computing Machinery's Interna-
tional Collegiate Programming Contest (ACM ICPC).

MIN H. KAO DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE
fact sheet

THE UNIVERSITY OF TENNESSEE KNOXVILLE

www.eecs.utk.edu

Leadership

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Knoxville, TN 37996-2250
Phone: (865) 974-3461
www.facebook.com/EECS.UTK
www.twitter.com/EECS_UTK

Mission

We are the Department of Electrical Engineering and Computer Science at the University of Tennessee, the largest department in the College of Engineering. We have 45 faculty members, who are respected, world-class leaders in their fields and are dedicated to teaching students and aiding them in developing the technical and communication skills necessary to have successful careers. Our rigorous curriculum prepares students to be successful in their future profession and offers the flexibility for students to choose courses that match their interest areas.

Academics

Enrollment Figures

Enrollment (Full-Time)
Academic Year 2018-2019

Undergraduate	834
MS Enrollment	71
Ph.D. Enrollment	174
Total	**1079**

Fall 2018 Freshman Enrollment

Computer Science	120
Computer Engineering	75
Electrical Engineering	60
Total EECS Freshmen	**255**

Degrees Granted 2017-2018

Undergraduate	149
M.S.	60
Ph.D.	27
Total	**236**

Faculty 2018-2019

Professors	24
Associate Professors	11
Assistant Professors	10
Professors of Practice	1
Adjunct	14
Joint Faculty from ORNL	29
Total	**89**

Faculty Honors

National Academy of Engineering (NAE) Members: 4

NSF Career Award Winners: 11

IEEE Fellows: 17

UT Faculty Members with an ORNL Appointment: 20

Oak Ridge National Laboratory

Oak Ridge National Laboratory is the largest US Department of Energy science and energy laboratory, conducting basic and applied research to deliver transformative solutions to compelling problems in energy and security. ORNL's diverse capabilities span a broad range of scientific and engineering disciplines, enabling the Laboratory to explore fundamental science challenges and to carry out the research needed to accelerate the delivery of solutions to the marketplace. ORNL is located near the University of Tennessee in the town of Oak Ridge, and several EECS Faculty members have joint ORNL appointments there and even more have joint collaborations.

Research Centers

Center for Ultra-wide-area Resilient Electric Energy Transmission Networks (CURENT)
curent.utk.edu CURENT was founded by the National Science Foundation (NSF) under the prestigious Engineering Research Center (ERC) program. Base funding provided by the NSF and the US Department of Energy is at $4 million per year. CURENT is the first and only ERC at UT and works closely with its industrial partners with a focus on improving the nation's electric power transmission system and accommodating a high level of renewable energy penetration.

Innovative Computing Laboratory (ICL)
icl.utk.edu The Innovative Computing Laboratory (ICL) is a large computer science research and development group specializing in advanced scientific and high performance computing. ICL's founder, Dr. Jack Dongarra, established the lab in 1989. Dr. Dongarra is the creator of the LINPACK Benchmarks, linear algebra tests that measure the mathematical capabilities of computers. The latest version of these benchmarks is used to build the TOP500 list, ranking the world's most powerful supercomputers.

Initiative for Point of Need/Point of Care Nanobiosensing (IPN)
nanobio.eecs.utk.edu Joint with MABE, Nutrition and Public Health. This collaborative initiative aims to use nanobiosensing technology to design, test, and validate rapid tests at point of need (PON) and/or point of care (POC) to facilitate clinical disease diagnosis and monitoring of environmental, food or water safety.

Degrees, Minors & Certificates Offered

Degrees

Bachelor of Science
Electrical Engineering
Computer Engineering
Computer Science
(*All B.S. degrees ABET accredited*)

Master of Science
Electrical Engineering
Computer Engineering
Computer Science

Doctor of Science
Electrical Engineering
Computer Engineering
Computer Science

Minors & Certificates

- *Computer Science Minor*
- *Cybersecurity Minor*
- *Datacenter Technology and Management Minor*
- *Power and Energy Systems Graduate Certificate*
- *Fire Protection Engineering Graduate Certificate*
- *Wide Bandgap Power Electronics Certificate*

Financials

EECS Research Expenditures
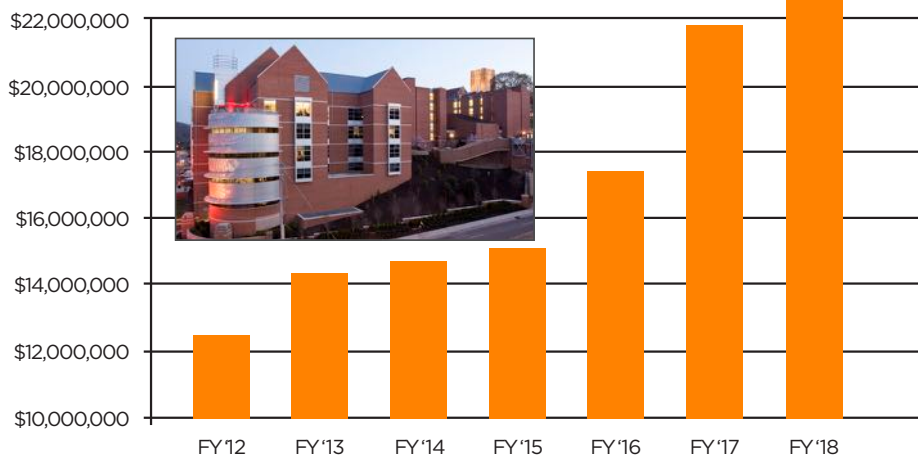
EECS Research Expenditures for Fiscal Year 2018: **$22,873,167**

EECS Research Expenditures per T/TT Faculty for Fiscal Year 2018: **$508,292**

ASEE Survey Data for 2017

13th nationally among public EECS programs in research expenditures per tenure-line faculty member.
5th nationally among public EECS programs in Ph.D. enrollment per tenure-line faculty member.

We are Hiring! (1+ T/TT Positions)

• UT-Arlington is an *R1 university* by the Carnegie Classification of Institutions of Higher Education

• UTA designated a *Hispanic-Serving Institution*; 10th in the nation for undergraduate *diversity* [U.S. News & World Report]; No. 1 four-year college in Texas for *veterans* [Military Times' 2017 Best for Vets list]; 2nd lowest average *student debt* among U.S. universities [U.S. News & World Report].

• Ranked by *CSRankings.org* (2015-2018 publications in all venues including non-default ones, as of September 2018): #61 overall, #46 AI, #20 Databases, #20 High-Performance Computing, #17 OS, #54 Security, #40 Software Engineering

Enrollment Growth, Students and Education

• *2242 students* in Fall 2018 (1363 Bachelor's, 747 Master's, 132 Ph.D. students)

• *Ph.D. graduates secured tenure-track positions* in 2018: *Xinbo Wu* (University of Illinois at Chicago), *Mahdi Nasrullah Al-Ameen* (Utah State University), *Ishtiaque Hussain* (Pennsylvania State University – Abington)

• *Senior Design industry sponsorship program* resulting in 20+ sponsored projects and over $100,000 in pledged funding since Spring 2016

• The department received funding from Komodo, a leading provider of blockchain technology, for annual blockchain competition, senior design projects, student scholarships, and supporting materials and resources for a new course on *blockchain and cryptocurrency* that senior lecturer Sajib Datta will start teaching in Spring 2019.

Faculty

• *Assistant Professors hired in 2018* (*from left to right)*: *William Beksi* (robotic and computer vision, Ph.D.: University of Minnesota), *Mohammad Islam* (cyber security, Ph.D.: UC Riverside), *Won Hwa Kim* (machine learning, computer vision, medical imaging, Ph.D.: University of Wisconsin), *Ming Li* (mobile

security, Ph.D.: Mississippi State University), *Shirin Nilizadeh* (privacy and security, Ph.D.: Indiana University), *Deokgun Park* (text mining and visualization, Ph.D.: University of Maryland)

• 31 tenure-track, 15 teaching faculty members, *3 IEEE fellows*, current and former faculty members received *6 NSF CAREER, 1 AFOSR YIP, and 1 NSF CRII awards since 2006*
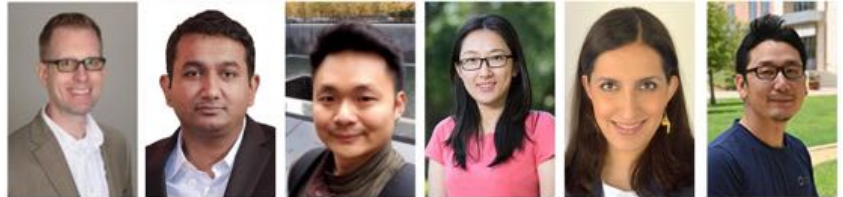
Research Highlights

• Over *$4M per year in research expenditures* for the last 3 years

• *Best paper* award at IEEE Big Data Congress 2018, ICSE 2018 student research competition bronze award

• *General chair* of SIGMOD 2018, Gautam Das

• *CSRankings.org papers* 18'**:** 3 AAAI, 2 EuroSys, HPDC, 3 ICML, ICSE, KDD, NIPS, SIGMOD, 2 VLDB, WWW

• *Selected grants since Sept. 1, 2017*

- $585K, NIST, security testing of blockchains and IoT systems (Jeff Lei, in collaboration with SBA Research Inc.)

- $345K, NSF, taming small data writes to block storage devices for higher I/O efficiency (Song Jiang)

- $500K (UTA-led) from NSF and $1.2M (Duke-led, $105K UTA subaward) from Knight Foundation, Facebook and Craig Newmark, data-driven fact-checking (Chengkai Li)

- $320K, NSF REU Site, assistive technologies for people with disabilities (Ishfaq Ahmad, Manfred Huber, Vassilis Athitsos)

- $140K, Huawei, scheduling strategies in multicore processors for CPU and I/O tasks (Ishfaq Ahmad)

- $200K, NSF, data analytics algorithms for location-based services (Gautam Das)

- $1M, NSF, robot-based service for vocational assessment, personalized worker training and rehabilitation (Fillia Makedon, Vassilis Athitsos, and psychologists collaborators at Yale University and UTA)

The University of Texas at El Paso
Computer Science Department

PROGRAMS AND ENROLLMENTS

BS Computer Science: 911

MS Computer Science: 17

MS Software Engineering: 48

MS Information Technology: 11

PhD Computer Science: 35

QUICK FACTS

Faculty: 14
Annual Research Expenditures: $3.8 M

New Faculty: Dr. Deepak Tosh
Expertise: Cloud Computing, Blockchain
                     Network Security

DESIGNATIONS

NSA Academic Center of Excellence
        Cyber Operations & Cyber Defense
CyberCorps® University
Satellite of ARL South
CAHSI INCLUDES Alliance
BRAID Department

UTEP students: Google-Howard-CAHSI Tech Exchange

School of Computing Researchers Secure NSF Funding to Build Wireless Living Laboratory

The National Science Foundation (NSF) selected the **Flux Research Group** to build one of only four city-scale wireless research test beds in the US, part of a $100 million public-private partnership that aims to revolutionize the country's wireless ecosystem. This research test bed for telecoms, tech companies and research institutions — known as the **Platform for Open Wireless Data-driven Experimental Research (POWDER)** — will be one of the first in the United States and one of the largest and most complex in the world.

PHOTO CREDIT: Utah Office of Tourism

Other Highlights

- **Master of Software Development (MSD)** program created. A unique and rigorous 40-credit-hour curriculum geared for people with no computer science or related degree. https://msd.utah.edu

- The Racket programming language team, which includes SoC Professor, Matthew Flatt was presented the **2018 SIGPLAN Programming Languages Software Award**. http://www.sigplan.org/Awards/

- The School of Computing, along with the SCI Institute, Harvard University, NVidia, and Facebook Reality Labs sponsored a reception during the SIGGRAPH 2018 conference honoring **Ivan Sutherland and the 50 years of Virtual Reality.**

- School of Computing presents first annual **SoC Distinguished Alumni Award** to Dr. Jim Blinn for his distinguished technical and educational contributions in computer graphics.

Scott Neville (BS '18) graduated from the University of Utah with degrees in mathematics and computer science received prestigious **Churchill Scholarship** to study at the University of Cambridge in the United Kingdom.

Emma Beatty, an undergraduate student was awarded the **2018 Goldman Sachs Scholar.** Emma is a founding member of the student led Women in Computing Group.

NEW FACULTY HIRES

Nick Cheney
Research Assistant Professor
Deep Reinforcement Learning, Evolutionary Robotics, AI, Artificial Life

David Darais
Assistant Professor
Software Reliability, Program Analysis, Mechanized Verification

Radhakrishna Dasari
Lecturer
Computer vision, fundamentals of programming

Jason Hibbeler
Professor of the Practice
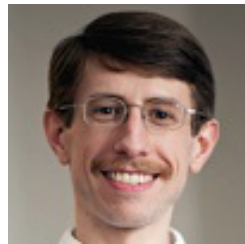*Software engineering, mobile app development, operating systems, optimization*

Laurent Hébert-Dufresne
Assistant Professor
Complex Networks, Dynamics of Contagion, Network Comparison

Hosna Jabbari
Assistant Professor
Bioinformatics, computational biology, RNA structure prediction

Joseph Near
Assistant Professor.
Data privacy, security, programming languages, and software engineering

NEW RESEARCH PROJECT HIGHLIGHTS

In 2018, UVM Computer Science Faculty played integral roles on several major new awards:

- Project Director on $12M COBRE Award
- Co-Principal Investigator $2M DARPA Lifelong Learning L2M Award
- Co-Principal Investigator $2M NSF Emerging Frontiers in Research Innovation
- Subcontractor $3M DARPA Data Privacy Award.
- Principal Investigator $150K Vermont Transportation Department Award.

MORE HIGHLIGHTS

- Formation of BOA for the UVM Center for Computer Security & Privacy.
- Joseph Near Receives DARPA Riser Award.
- NetSci 2019 to be hosted at UVM!

UVM COMPUTER SCIENCE BY THE NUMBERS

467
Undergraduate Majors in CS and Data Science disciplines

17% Increase in Undergraduate Majors since 2017

32
Graduate Majors in CS

30
Graduate Majors in Complex Systems and Data Science

48% Growth in Graduate Majors since 2017

9
Tenure Track Faculty

7
Teaching Faculty

2
Research Faculty

www.cs.uvm.edu

UNIVERSITY OF VIRGINIA **COMPUTER SCIENCE**
GROWTH AND TRANSFORMATION

UVA COMPUTER SCIENCE IS GROWING RAPIDLY. OUR GOAL IS TO BUILD TOP RESEARCH GROUPS IN CYBER-PHYSICAL SYSTEMS, SECURITY, MACHINE INTELLIGENCE, COMPUTER SYSTEMS, SOFTWARE ENGINEERING AND THEORY, WHILE PROVIDING EXCEPTIONAL UNDERGRADUATE AND GRADUATE EDUCATION.

21
NEW TENURED OR TENURE-TRACK FACULTY SINCE 2012-2013

INCREASE IN UNDERGRADUATE DEGREES AWARDED, 2013-2018:

157%

GRADUATE PROGRAM GROWTH, 2013-2018:

124%
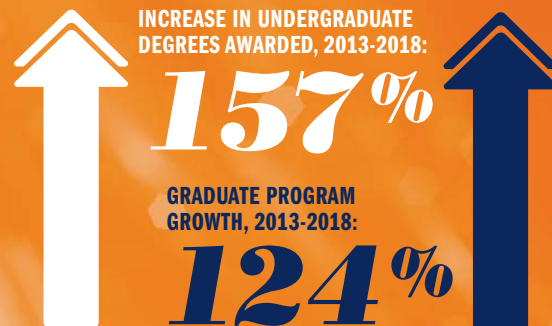
WE'RE HIRING

Email *cs-office@virginia.edu* for information.

8
NEW FACULTY THIS YEAR

- HCI AND HUMAN-CENTRIC COMPUTING
- COMPUTER SYSTEMS (OS, COMPILERS, PL, ETC.)
- CYBER-PHYSICAL SYSTEMS/ INTERNET OF THINGS
- BIOMEDICAL DATA SCIENCE
- BUSINESS ANALYTICS
- ETHICS/PRIVACY/FAIRNESS
- SECURITY
- CS EDUCATION

TENURED OR TENURE-TRACK FACULTY SINCE 2012-2013:

MICHAEL ALBERT
ASSISTANT PROFESSOR
Ph.D.: Duke University
Market Design with Machine Learning

MADHUR BEHL
ASSISTANT PROFESSOR
Ph.D.: University of Pennsylvania
Cyber-Physical Systems

BRAD CAMPBELL
ASSISTANT PROFESSOR
Ph.D.: University of Michigan
Networked Embedded Systems

MATTHEW DWYER
PROFESSOR
Ph.D.: University of Massachusetts at Amherst
Verification and Validation of Autonomous Systems

SEBASTIAN ELBAUM
PROFESSOR
Ph.D.: University of Idaho
Software Engineering and Robotics

FARZAD FARNOUD
ASSISTANT PROFESSOR
Ph.D.: University of Illinois, Urbana-Champaign
Information and Coding Theory

LU FENG
ASSISTANT PROFESSOR
Ph.D.: University of Oxford
Cyber-Physical Systems

TOM FLETCHER
ASSOCIATE PROFESSOR
Ph.D.: University of North Carolina, Chapel Hill
Image Analysis and Machine Learning

YANGFENG JI
ASSISTANT PROFESSOR
Ph.D.: Georgia Institute of Technology
Natural Language Processing, Machine Learning

SAMIRA KHAN
ASSISTANT PROFESSOR
Ph.D.: University of Texas, San Antonio
Computer Architecture

YONGHWI KWON
ASSISTANT PROFESSOR
Ph.D.: Purdue University
Systems Security

MOHAMMAD MAHMOODY
ASSISTANT PROFESSOR
Ph.D.: Princeton University
Foundations of Cryptography

VICENTE ORDONEZ
ASSISTANT PROFESSOR
Ph.D.: University of North Carolina, Chapel Hill
Computer Vision

YANJUN QI
ASSISTANT PROFESSOR
Ph.D.: Carnegie Mellon University
Machine Learning

HAIYING SHEN
ASSOCIATE PROFESSOR
Ph.D.: Wayne State University
Parallel and Distributed Computer Systems and Networks

YUAN TIAN
ASSISTANT PROFESSOR
Ph.D.: Carnegie Mellon University
Security and Privacy for Cyber-Physical Systems

ASHISH VENKAT
ASSISTANT PROFESSOR
Ph.D.: University of California, San Diego
Computer Architecture and Compilers

HONGNING WANG
ASSISTANT PROFESSOR
Ph.D.: University of Illinois, Urbana-Champaign
Machine Learning, Data Mining and Information Retrieval

DAVID WU
ASSISTANT PROFESSOR
Ph.D.: Stanford University
Cryptography and Computer Security

HAIFENG XU
ASSISTANT PROFESSOR
Ph.D.:University of Southern California
Computational Game Theory

AIDONG ZHANG
PROFESSOR
Ph.D.: Purdue University
Data Mining, Bioinformatics, Health Informatics

ENGINEERING.VIRGINIA.EDU/CS

UNIVERSITY of VIRGINIA
ENGINEERING
Department of Computer Science

UNIVERSITY *of* WASHINGTON

HUMAN CENTERED DESIGN & ENGINEERING

Putting people first, we research, design, and engineer interactions between humans and technology.

NEW FACULTY

HCDE welcomed Dianne Hendricks to the faculty in 2018. In her role as Lecturer, Dr. Hendricks is leading the Engineering Communication Program for the College of Engineering.
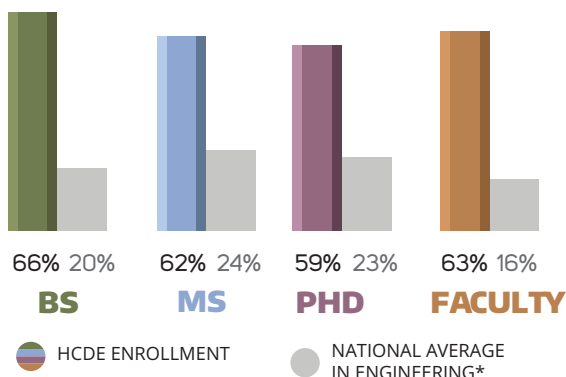
STUDENT ENROLLMENT

Undergraduate: 221	Certificate: 35
Master's: 194	PhD: 39

CORE FACULTY

Professors: 8	Assistant Professors: 4
Associate Professors: 5	Career Lecturers: 7

WOMEN IN HCDE

66% 20%	62% 24%	59% 23%	63% 16%
BS	**MS**	**PHD**	**FACULTY**

HCDE ENROLLMENT   NATIONAL AVERAGE IN ENGINEERING*

* Source: National Science Foundation, National Center for Science and Engineering Statistics. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2017.

RESEARCH AWARDS FY 2018

Awards Funded: 26   Total Awarded Amount: $4M+

2018 FACULTY & STUDENT HIGHLIGHTS

HCDE student **Madison Holbrook** (BS '18) and Lecturer **Irini Spyridakis** developed Meal Matchup, a service that pairs leftover food from University of Washington dining halls to local non-profits in need.

HCDE Assistant Professor **Kate Starbird** received an NSF Faculty Early Career Development (CAREER) Award to support her research into why and how disinformation, or false information created intentionally to mislead and/or confuse, spreads online.

Five HCDE students, **Samantha Gil Vargas, Sharon Heung, Melissa Medsker, Tsewone Melaku,** and **Burren Peil** were named to the 2018 cohort of the Husky 100, which recognizes UW students across all three campus who are making the most of their time at UW.

A team of researchers led by HCDE PhD student **Elena Agapie** developed CrowdFit, a platform for exercise planning that relies on crowdsourcing from nonexperts to create workout plans that meet national recommendations and individual user's schedules and interests.

HCDE Professor **Cecilia Aragon** traveled on a Fulbright award to research and teach human-centered data science at the Universidad Técnica Federico Santa María in Valparaiso, Chile.

HCDE Associate Professor **Julie Kientz** received a Google Faculty Research Award to study how technology can foster engagement between children with and without disabilities.

HCDE Professor **Mark Haselkorn** is leading a group of six agencies working together to design and implement a regional strategy for enhancing mobility when a major incident drastically reduces capacity along the Seattle I-5 corridor.

HCDE Assistant Professor **Daniela Rosner** published a book, *Critical Fabulations*, that explores how uncovering design stories from the past can shape how we design more inclusive technology today.

HCDE PhD student **Cynthia Bennett** received a Microsoft Research Dissertation Grant to support her dissertation on disability-informed human-centered design.

HCDE Assistant Professor **Leah Findlater** received an NSF grant to advance her research of wearable sound awareness technologies for people who are deaf or hard of hearing.

OUTSTANDING FACULTY HIRES

The Allen School welcomed 10 new faculty, adding new expertise in **cryptography**, **computational design for manufacturing**, and **data science for health and well-being** while strengthening our leadership in **networking**, **machine learning**, **natural language processing**, **software engineering**, and **CSE education**.

Tim Althoff	Hannaneh Hajishirzi	René Just	Huijia "Rachel" Lin	Ratul Mahajan
Sewoong Oh	Hunter Schafer	Adriana Schulz	Stefano Tessaro	Brett Wortzman

BY THE NUMBERS

1,500 Majors

75 Faculty

$43M Research

EXCITING INNOVATIONS

In 2018, the Allen School made significant contributions in computing and beyond, spanning **software**, **hardware**, **mobile health**, **machine learning**, and more.

MERGE is an algorithm that combines machine learning and big data to identify cancer drugs suited to an individual patient's molecular profile.

The **TVM framework** enables rapid deployment of new deep learning applications on a range of devices without sacrificing performance.
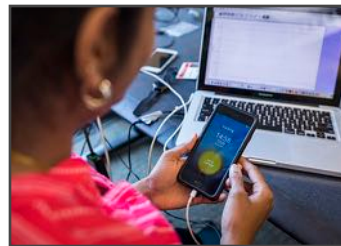
Medical device company ResMed licensed the active sonar technology from **ApneaApp** for its new SleepScore consumer app for tracking sleep quality.

The new **Bill & Melinda Gates Center for Computer Science & Engineering** will welcome faculty, students, and staff in early 2019, doubling our space!

NOTEWORTHY RECOGNITION

STUDENTS: Rajalakshmi Nandakumar, Marconi Society Young Scholar Award; **Nelson Liu**, **Kimberly Ruth**, Goldwater Scholars; **Elizabeth Clark**, **Ari Holtzman**, **Maarten Sap**, Amazon Alexa Prize; **Kaitlyn Zhou**, UW Engineering Dean's Medalist; **Terra Blevins**, **Matthew Johnson**, **Eunice Jun**, NSF Graduate Research Fellows

FACULTY: Susan Eggers, Eckert-Mauchly Award in architecture; **Yejin Choi**, CRA-W Borg Early Career Award; **Yin Tat Lee**, A.W. Tucker Prize in optimization; **Thomas Rothvoss**, Delbert Ray Fulkerson Prize in discrete mathematics; **Maya Cakmak**, Sloan Research Fellow; **Michael Ernst**, CRA-E Undergraduate Research Faculty Mentoring Award; **Steven Seitz**, Fellow of the ACM; **Sidd Srinivasa**, Fellow of the IEEE; **Richard Ladner**, Strache Leadership Award; **Kurtis Heimerl**, UW Engineering Diamond Award

The Allen School announced the new **UW Reality Lab**, a partnership between academia and industry to drive the state of the art in augmented and virtual reality research and teaching.

Visit the Allen School online: cs.washington.edu.

Department of
Computer Sciences
UNIVERSITY OF WISCONSIN–MADISON

Meet Our
Newest Faculty

Justin Hsu, *programming languages*

Matthew Sinclair, *architecture*

Christos Tzamos, *theory*

Shivaram Venkataraman,
big data systems

Ilias Diakonikolas,
theory, begins Fall 2019

Jelena Diakonikolas,
optimization, begins Spring 2020

Celebrated Retirements

David Wood, *computer architecture*

Web: cs.wisc.edu

Facebook & Twitter:
@WisconsinCS

Research highlights

- UW-Madison is partnering with eleven universities to make up CRISP, the Center for Research on Intelligent Storage and Processing in Memory, thanks to a $27.5 million grant from the Semiconductor Research Corporation. The Madison team is co-led by *Jignesh Patel*.

- *Paul Barford*'s research, presented at the Applied Networking Research Workshop in July, shows that buried fiber optic cable in densely populated coastal regions of the U.S. will likely be inundated by rising seas much sooner than was thought—15 years rather than 50—allowing infrastructure to be assessed sooner.

- *Steven Wright*, as part of the TRIPODS+Climate Project, which is receiving $8.5 million in NSF grants, is working to identify teleconnections, such as El Nino. Wright's team is applying data science methods such as machine learning, network analysis, and predictive modeling to the growing flood of climate data.

Faculty award highlights

- *Gurindar Sohi* elected to the American Academy of Arts & Sciences
- *Tom Reps* awarded SIGPLAN Programming Languages Achievement Award
- *Mark Hill* named Chair of the Computing Community Consortium
- *Justin Hsu* earned John C. Reynolds Doctoral Dissertation Award
- *Theo Rekatsinas* selected for Amazon Research Award
- *Loris D'Antoni* received NSF Career Award
- *Aditya Akella* honored with H.I. Romnes Faculty Award

Teaching & Educational Programs

- CS is the largest major on the UW-Madison campus, counting both undergraduate and graduate students.

- CS now has three undergraduate advisors to handle the increasing number of CS majors and certificates.

- The recently formed Computer Sciences Learning Center is served by trained students who have completed CS 502, Theory and Practice in Computer Science Education.

New programs

- **User experience:** A joint capstone program in UX has launched in collaboration with UW-Madison's iSchool (formerly the School of Library & Information Studies).

- **Placement opportunities:** The department now sponsors *two* CS-specific job fairs—one for startups, and one for larger companies such as Google, Epic, and Facebook—where students meet one-on-one with company representatives to obtain internships and jobs.

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

VANDERBILT UNIVERSITY

7 NEW FACULTY MEMBERS

CATIE CHANG
Functional neuroimaging

IPEK OGUZ
Medical image analysis, machine learning

JACK NOBLE
Medical image processing

JUSTUS NDUKAIFE
Nanophotonics, novel bio-inspired soft actuators

MAITHILEE KUNDA
Artificial intelligence, computational cognitive systems

TAYLOR JOHNSON
Cyber-physical systems, IoT, verification and validation, cybersecurity

MATTHEW BERGER
*Data visualization, machine learning, computer vision*

RESEARCH HIGHLIGHTS

Vanderbilt University is the first academic partner to join a new effort by **THE LINUX FOUNDATION** to advance open source innovation in the energy and electricity sectors, contributing both deep expertise and a platform for smart grid applications to accelerate the transition to connected power system devices.

A Vanderbilt team of researchers and alumni won Round 1 of the **U.S. DEFENSE ADVANCED RESEARCH PROJECTS AGENCY'S SPECTRUM COLLABORATION CHALLENGE** to develop a revolutionary alternative to the century-old approach of allocating bands for specific use on the radio frequency spectrum.

The Vanderbilt Institute for Space and Defense Electronics (ISDE) will lead an international team of researchers from around the world to investigate **HOW RADIATION AFFECTS 3D ELECTRONICS** and systems under a three-year $3 million Defense Threat Reduction Agency project.

Bennett Landman, associate professor of electrical engineering and radiology and director of the Center for Computational Imaging within the Vanderbilt University Institute of Imaging Science (VUIIS), recently led the team who won the Innovation Award in the inaugural **RADX CHALLENGE**—a three-month challenge to develop solutions to unmet needs in health care—for a platform for translating medical image processing tools into a clinical practice environment.

FUNDING

	2015	2016	2017
$24M			
$22M			
$20M			
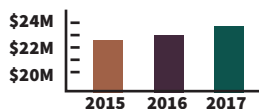
Five-year average T/TK faculty funding in the EECS department is above $800,000 per year. All junior faculty members hired during the past 15 years have received prestigious young investigator awards, such as NSF CAREER and DARPA CSSG.

FACULTY HIGHLIGHTS

JANOS SZTIPANOVITS, a leader in cyber-physical systems research, has been named the John von Neumann Professor by Budapest University of Technology and Economics and the John von Neumann Computer Society of Hungary. The professorship is awarded to an internationally recognized scholar and university professor in Hungary or at a foreign university whose field of science and activity is related to the scientific achievements of John von Neumann.

An award-winning Vanderbilt School of Engineering researcher will work with the University of Nigeria, Nsukka, on development and testing of a lab-on-a-chip device for isolation and concentration of e-coli bacteria. Assistant Professor of Electrical Engineering **JUSTUS NDUKAIFE** has used plasmonics to develop a new kind of nanotweezers that can rapidly trap and detect molecules, viruses and DNA—a device transformative for medicine that also has color printing applications.

ORGANIZATIONAL NEWS

Vanderbilt has established the **DATA SCIENCE INSTITUTE** to facilitate and promote data-driven research across all Vanderbilt schools and colleges through interdisciplinary partnership. The institute will be co-directed by Douglas Schmidt, Cornelius Vanderbilt Chair and professor of computer science and computer engineering.

The National Security Agency awarded a **SCIENCE OF SECURITY LABLET** to a Vanderbilt University team and their collaborators, led by Professor Xenofon Koutsoukos. This is a multi-disciplinary, five-year, several-million-dollar project with the goal of developing the foundational principles of secure and resilient cyber-physical systems.

STUDENT NUMBERS AND GROWTH

	2016	2017	2018
Ph.D.	126	141	153
Master's	42	44	57
Bachelor's	400	466	535
Total Students	568	651	745

AVERAGE ANNUAL ENROLLMENT GROWTH OVER 3 YEARS:

PH.D. ↑ **21%** **MASTER'S** ↑ **36%** **BACHELOR'S** ↑ **34%**

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Department of Computer Science
Virginia Tech

www.cs.vt.edu

</div>

Faculty and Staff
- 53 teaching faculty: 47 tenured/tenure-track, 3 professors of practice, 2 senior instructors, 1 collegiate faculty member
- 9 research faculty, 12 affiliate faculty from other VT departments or institutes
- 16 administrative and support staff, 6 administrative and professional faculty
- New tenure-track faculty members joining in Fall 2018:
  - Jin-Hee Cho, PhD Virginia Tech (2008), security, network science
  - Jiepu Jiang, PhD UMASS (2018), text mining and analytics
  - Anuj Karpatne, PhD UMinn (2017), data analytics
  - Sang Lee, PhD Michigan (2018), HCI, computer music
  - Bimal Viswanath, PhD Max Planck Institute (2016), security

Students and Degree Programs
- Undergraduate program: 918 majors (soph, jr, senior), 18% women, 247 BS degrees awarded in 17/18
- Graduate program: 91 MS and 174 PhD students, 26% women, 48 MS and 26 PhD degrees awarded in 17/18
- Participating in multiple interdisciplinary degree programs: minors in CS and cybersecurity, the BS in Computational Modeling & Data Analytics (CMDA), the PhD in Genetics, Bioinformatics & Computational Biology (GBCB), and the on-line Masters of Information Technology (MIT)
- ICPC programming team qualified for the world finals for fifth straight year

Research and Professional Service Highlights
- $11M in research expenditures in FY18
- Three new NSF CAREER awards: Changhee Jung, Aditya Prakash, Gang Wang
- Ed Fox named ACM Fellow, Madhav Marathe named SIAM Fellow
- Best/notable paper awards at ASONAM 2017, HCOMP 2017
- Major conference leadership roles at ASONAM 2018, SECDEV 2018, ManLang 2018, JCDL 2018

Coming Soon …
- Searching for five new faculty members this year
- $3M gift from block.one spurring initiative in blockchain research and education
- Statewide initiative in cybersecurity research and education being led by VT

September 22, 2018

Learning and creating in the Digital Sound and Music Lab
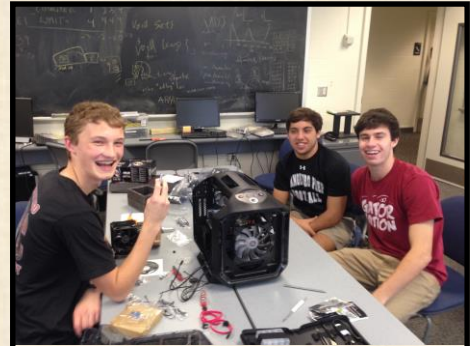
Building a high-performance computer in CS 101

Student Highlights

❖ Two students received Anita Borg Scholarships to attend the Grace Hopper Celebration
❖ Student received a Goldwater Scholarship Honorable Mention
❖ Student received the Upsilon Pi Epsilon Scholarship
❖ Student named a Churchill Scholar
❖ Graduate student received a Broader Engagement travel award
❖ Several students are Inmar scholars with paid internships and scholarships
❖ Active student ACM chapter
❖ Hands-on STEM labs to introduce students to computational problem solving in areas such as digital sound and music, robots, and human-centered design.

Academic Highlights

❖ BS, BA, and MS in Computer Science
❖ 120+ majors and 50+ minors in junior and senior classes
❖ Regular study-abroad opportunities
❖ Summer internships and other computer science related employment

Research and Scholarship Highlights

❖ Digital sound and music http://digitalsoundandmusic.com/
❖ Bioinformatics including modeling of signaling and transcriptional networks
❖ Biophysics including molecular dynamics simulation using GPUs
❖ Parallel computation for large-scale data analytics
❖ Undergraduate students regularly engage in summer research with faculty

Department of Computer Science

Wayne State University | Detroit, MI

engineering.wayne.edu/cs

⊰ NEW FACULTY ⊱

Amiangshu Bosu
- Ph.D., University of Alabama
- Former assistant professor at Southern Illinois University Carbondale

Research interests: empirical software engineering, peer code review, software security, android security, malware detection, mining software repositories, and social network analysis

Marco Brocanelli
- Ph.D., Ohio State University
- Former visiting scholar at OSU

Research interests: cyber-physical systems, energy-aware systems, Internet-of-Things, edge computing, embedded and real-time systems

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⊰ STUDENT AWARDS ⊱

Graduate student Lu Wang was selected as a Best Paper Award finalist at the 2018 IEEE International Conference on Machine Learning and Applications (*"Modeling Over-dispersion for Network Data Clustering"*).

Ph.D. student Laleh Ghalami received first place in the 2017 ACM Student Research Competition and second place at the 2017 STARS Computing Corps Celebration poster competitions (*"A Parallel Approximation Algorithm for Scheduling Parallel Identical Machines"*).

Graduate student Kevin Zurek was selected to Ford Motor Company's "Thirty Under 30" for his work with the Ruth Ellis Center, which provides safe spaces for at-risk LGBTQ youth.

Muamer Besic, Evan Clifford, Omer Khan, and Matthew Prigorac received the Best App award at 2018 WSU Student Innovation and Design Day for CarPool, an application which helps users coordinate ride sharing.

Ph.D. student Hajar Emami Gohari took third place in the 2018 ACM Richard Tapia Poster Competition and the ACM Student Research Competition (*"Synthetic CT Generation from MRI Data Using Generative Adversarial Networks"*)

⊰ NEWS & NOTES ⊱

677 undergraduate students including 195 new computer science majors

A 17 percent increase in undergraduate course enrollment from 2016 to 2017

148 degrees awarded in 2016-17 *(84 bachelor's, 58 master's, 6 Ph.D.)*

Renovated labs with virtual desktop infrastructure (VDI) in 2016

New programs:
- Graduate certificate in Cyber-Physical Systems
- Master's in Data Science and Business Analytics *(collaboration with WSU's Mike Ilitch School of Business and Department of Industrial and Systems Engineering)*
- Founding member of Michigan Cyber Range Regional Cyber Education Collaboration

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⊰ RESEARCH FUNDING ⊱
PAST 12 MONTHS

$3.9 M National Science Foundation

$1.8 M U.S. Department of Defense

$200 K Michigan Health Endowment Fund

⊰ RESEARCH ⊱

- $500,000 NSF grant for "CHS: Small: High-Dimensional Euclidean Embedding for 4D Volumetric Shape with Multi-Tensor Fields," to develop a computing system to better understand and analyze internal workings of the human body *(co-PIs: Zichun Zhong, Ph.D.; Jing Hua, Ph.D.)*

- Technology developed by researchers from WSU and biotech startup Advaita Bioinformatics, partially funded by NSF and the Robert J. Sokol MD Endowment, to distinguish between aggressive and less aggressive diseases *(PI: Sorin Draghici, Ph.D.)*

- Azure Award from Microsoft for "AI for Earth: A Cloud-based Analytics for Real-time Monitoring of Landfills/Superfund Sites and the Adjacent Watershed," which addresses water contamination in Michigan caused from leakage of toxic and superfund sites *(co-PI: Weisong Shi, Ph.D.)*

- Four-year, $1.25 million NSF grant to develop the Autonomous Battery Operating System (ABOS) which aims to inject intelligence capabilities into battery management system design *(PI: Nathan Fisher, Ph.D.)*

- Developed KDM, a big data modeling tool for Cassandra, which has over 4,000 registered users, representing over 200 universities and companies in more than 100 countries across five continents — over 10K big data models haven been created using KDM

- $50,000 Facebook Hardware and Software Systems Research Award for "DIME: A Dynamic Resource-Driven Optimal Scheduling Infrastructure for ML on the Heterogeneous Edge Platforms" *(co-PI: Weisong Shi, Ph.D.)*

Whitman College
Department of Computer Science

Founded in 1882, Whitman College is a highly selective private, residential undergraduate college located in Walla Walla, Washington. The college brings together approximately 1,500 talented and creative students from diverse backgrounds, providing them a rigorous liberal arts experience within a highly supportive and collaborative community.

Computer science courses have been offered at Whitman since the 1970s. In 2014, thanks to a major gift from Microsoft and other sources, the college was able to offer additional courses in the field. In the summer of 2015, Whitman hired Janet Davis as the first Microsoft Chair of Computer Science. A computer science minor was added shortly thereafter and the new major was officially approved in fall 2016. In the 2017-18 academic year, computer science became the college's 46th major.

We are now a department!
- Computer Science separated from the department of Mathematics & Statistics as of Fall 2018.
- Find our web site at https://www.whitman.edu/academics/departments-and-programs/computer-science

We've had many firsts!
- During the 2017-2018 academic year, we supervised our first senior capstone project, graduated our first two computer science majors, sent our first student to study abroad (at AIT-Budapest), and celebrated our first faculty baby.
- Andy Exley (natural language processing) and John Stratton (high-performance computing) were awarded their first sabbaticals, one semester each during the 2018-19 academic year.

We are growing!
- We have 16 computer science majors in our second graduating class (2019) and 22 declared majors in our third graduating class (2020).
- Courses at all levels are filled to near or above capacity.
- Visiting Assistant Professor Rohan Loveland joins us from New Mexico State University, Los Alamos National Labs, and Dynofit, Inc. Dr. Loveland's research interests are in artificial intelligence, deep reinforcement learning, intelligent autonomous agents, and semi-supervised anomaly detection.

Computer Science Department
Worcester Polytechnic Institute

`http://www.cs.wpi.edu/`

New Tenure-Track Faculty Hires (and Previous Position)

| **Berk Calli** | **Lorenzo De Carli** | **Charles Roberts** | **Erin Solovey** |
| Post-Doc Yale | Asst Prof Colorado St | Asst Prof RIT | Asst Prof Drexel |

Department Highlights

- In 2018-19 the Computer Science Department is celebrating its 50th anniversary.

- Jing Xiao became new Director of WPI's Robotics Engineering program. The program is celebrating its 10th anniversary as offering the first Robotics Engineering undergraduate degree in the U.S. It is also the first to offer degrees at all levels—B.S., M.S. and Ph.D.

- Tian Guo was awarded a National Science Foundation (CISE) Research Initiation Initiative (CRII) Award for her work on "Mobile-aware resource management in geo-distributed multi-clouds environment." She is the seventh current faculty member to receive an early career award.

- Emmanuel Agu is Principal Investigator for a $1.6 million grant from the National Institutes of Health to develop a new smartphone app to monitor chronic wounds.

- WPI was ranked as the fourth-best Computer Science program by College Factual in 2017.

Department Facts and Figures

- As the Hub of WPI Interdisciplinary Programs, department faculty work with faculty in seven other departments to offer seven computing-related degree programs in Bioinformatics & Computational Biology (BCB), Cybersecurity, Data Science (DS), Interactive Media & Game Development (IMGD), Learning Sciences & Technologies (LST), Robotics Engineering (RBE) and Systems Engineering.

- The department has 29 tenured/tenure-track faculty (70% currently have external funding) with an additional 7 full-time teaching faculty.

- The department has 750 (roughly 1/6 of WPI) undergraduate majors. Between Computer Science, IMGD, RBE and BCB there are over 1100 undergraduates pursuing computing-related degrees. The department has roughly 140 Computer Science graduate students and there are nearly 500 graduate students pursuing computing-related degrees.

- Female students represented more than 30% of first-year Computer Science majors.

- WPI Computer Science sponsored twelve students to attend last year's Grace Hopper Conference.

Institutional News

- WPI opened the Foisie Innovation Studio and Messenger Hall on campus. President Laurie Leshin described the building as the physical embodiment of the "WPI Plan"—the university's distinctive project-based education, a curriculum that blends classroom learning with hands-on, real-world experience, which was launched in 1970.

- For the second consecutive year, WPI has 42% (up from 34% in 2016) of female students in the first-year class.