



Computing Research Association **Academic Member Highlight Book**

Fall 2017

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



CRA

Computing Research
Association

Table of Contents

| | |
|--|----|
| Binghamton University | |
| Computer Science..... | 8 |
| Boston University | |
| Computer Science..... | 9 |
| Electrical and Computer Engineering..... | 10 |
| Bowling Green State University | |
| Computer Science..... | 11 |
| Bradley University | |
| Computer Science and Information Systems..... | 12 |
| Brown University | |
| Computer Science..... | 13 |
| Carnegie Mellon University | |
| Electrical and Computer Engineering | 14 |
| Case Western Reserve University | |
| Electrical Engineering and Computer Science..... | 15 |
| Colgate University | |
| Computer Science..... | 16 |
| College of William & Mary | |
| Computer Science..... | 17 |
| Colorado School of Mines | |
| Computer Science..... | 18 |
| Columbia University | |
| Computer Science..... | 19 |
| Cornell University | |
| Computer Science..... | 20 |
| Dartmouth College | |
| Computer Science..... | 21 |
| DePaul University | |
| School of Computing..... | 22 |
| Drexel University | |
| College of Computing & Informatics..... | 23 |
| Embry-Riddle Aeronautical University | |
| Electrical, Computer, Software, and Systems Engineering..... | 24 |
| Emory University | |
| Math and Computer Science..... | 25 |

| | |
|---|----|
| George Mason University | |
| Computer Science..... | 26 |
| George Washington University | |
| Computer Science..... | 27 |
| Georgia Institute of Technology | |
| College of Computing: School of Computer Science..... | 28 |
| School of Computational Science and Engineering..... | 29 |
| School of Interactive Computing..... | 30 |
| Illinois Institute of Technology | |
| Computer Science..... | 31 |
| Iowa State University | |
| Computer Science | 32 |
| Johns Hopkins University | |
| Computer Science | 33 |
| Kansas State University | |
| Computer Science..... | 34 |
| Kean University | |
| Computer Science..... | 35 |
| Lehigh University | |
| Computer Science and Engineering..... | 36 |
| Michigan Technological University | |
| Computer Science..... | 37 |
| Montana State University | |
| Gianforte School of Computing..... | 38 |
| Mount Holyoke College | |
| Computer Science..... | 39 |
| National University of Singapore | |
| Computer Science..... | 40 |
| Naval Postgraduate School | |
| Computer Science..... | 41 |
| New York University | |
| Computer Science..... | 42 |
| North Carolina State University | |
| Computer Science..... | 43 |
| Northeastern University | |
| College of Computer and Information Science..... | 44 |
| Northwestern University | |
| Electrical Engineering and Computer Science..... | 45 |

| | |
|--|----|
| Ohio State University | |
| Computer Science and Engineering..... | 46 |
| Oklahoma State University | |
| Computer Science..... | 47 |
| Oregon State University | |
| School of Electrical Engineering and Computer Science..... | 48 |
| Pennsylvania State University | |
| College of Information Sciences and Technology..... | 49 |
| Purdue University | |
| Computer Science..... | 50 |
| Stanford University | |
| Computer Science..... | 51 |
| Stony Brook University | |
| Computer Science..... | 52 |
| Syracuse University | |
| School of Information Studies..... | 53 |
| Tennessee Technological University | |
| Computer Science..... | 54 |
| Texas A&M University | |
| Computer Science and Engineering..... | 55 |
| Texas A&M University, Corpus Christi | |
| Computing Sciences..... | 56 |
| Texas State University | |
| Computer Science..... | 57 |
| Texas Tech University | |
| Computer Science..... | 58 |
| University of Arizona | |
| Computer Science..... | 59 |
| University of Arkansas in Fayetteville | |
| Computer Science and Computer Engineering..... | 60 |
| University of California, Berkeley | |
| Electrical Engineering and Computer Sciences..... | 61 |
| University of California, Santa Barbara | |
| Computer Science..... | 62 |
| University of Central Florida | |
| Computer Science..... | 63 |
| University of Chicago | |
| Computer Science..... | 64 |

| | |
|---|----|
| University of Colorado, Boulder | |
| Computer Science..... | 65 |
| Information Science..... | 66 |
| University of Connecticut | |
| Computer Science and Engineering..... | 67 |
| University of Delaware | |
| Computer and Information Sciences..... | 68 |
| University of Florida | |
| Computer and Information Science and Engineering..... | 69 |
| University of Georgia | |
| Computer Science..... | 70 |
| University of Hawaii at Manoa | |
| Information and Computer Sciences..... | 71 |
| University of Houston | |
| Computer Science..... | 72 |
| University of Idaho | |
| Computer Science..... | 73 |
| University of Illinois at Chicago | |
| Computer Science..... | 74 |
| University of Illinois at Urbana-Champaign | |
| Computer Science..... | 75 |
| Electrical and Computer Engineering..... | 76 |
| University of Iowa | |
| Computer Science..... | 77 |
| University of Maryland | |
| College of Information Studies..... | 78 |
| University of Maryland, Baltimore County | |
| Computer Science and Electrical Engineering..... | 79 |
| University of Massachusetts, Amherst | |
| College of Information and Computer Sciences..... | 80 |
| University of Massachusetts, Lowell | |
| Computer Science..... | 81 |
| University of Memphis | |
| Computer Science..... | 82 |
| University of Michigan | |
| Computer Science and Engineering..... | 83 |
| School of Information..... | 84 |

| | |
|--|-----|
| University of Minnesota | |
| Computer Science and Engineering..... | 85 |
| University of Missouri, Kansas City | |
| Computer Science and Electrical Engineering..... | 86 |
| University of New Mexico | |
| Computer Science..... | 87 |
| Electrical and Computer Engineering Science..... | 88 |
| University of North Carolina, Chapel Hill | |
| School of Information and Library Science..... | 89 |
| University of North Dakota | |
| Computer Science..... | 90 |
| University of North Texas | |
| Computer Science and Engineering..... | 91 |
| University of Notre Dame | |
| Computer Science and Engineering..... | 92 |
| University of Oregon | |
| Computer and Information Science..... | 93 |
| University of Pennsylvania | |
| Computer and Information Science..... | 94 |
| University of Pittsburgh | |
| Computer Science..... | 95 |
| School of Computing and Information..... | 96 |
| University of Rochester | |
| Computer Science..... | 97 |
| University of South Alabama | |
| School of Computing..... | 98 |
| University of South Carolina | |
| Computer Science and Engineering..... | 99 |
| University of Tennessee, Knoxville | |
| Electrical Engineering and Computer Science..... | 100 |
| University of Texas, Arlington | |
| Computer Science and Engineering..... | 101 |
| University of Texas, Dallas | |
| Computer Science..... | 102 |
| University of Texas, El Paso | |
| Computer Science..... | 103 |

| | |
|---|-----|
| University of Utah | |
| School of Computing..... | 104 |
| University of Virginia | |
| Computer Science..... | 105 |
| University of Washington | |
| Human Centered Design and Engineering..... | 106 |
| Paul G. Allen School of Computer Science and Engineering..... | 107 |
| University of Wisconsin, Madison | |
| Computer Sciences..... | 108 |
| University of Wyoming | |
| Computer Science..... | 109 |
| Virginia Tech | |
| Computer Science..... | 110 |
| Wake Forest University | |
| Computer Science..... | 111 |
| Washington University in Saint Louis | |
| Computer Science and Engineering..... | 112 |
| Wayne State University | |
| Computer Science..... | 113 |
| Whitman College | |
| Mathematics and Computer Science..... | 114 |
| Worcester Polytechnic Institute | |
| Computer Science..... | 115 |
| Wright State University | |
| Computer Science and Engineering..... | 116 |
| Yale University | |
| Computer Science..... | 117 |

Department of Computer Science
Binghamton University
<https://www.binghamton.edu/cs/index.html>

Faculty:

- 33 full-time faculty members: 8 professors, 8 associate professors, 11 assistant professors, 6 lecturers. 4 NSF CAREER recipients.
- Searches for 2 tenure-track assistant professors are under way.

Students

- Over 900 students: 530 undergraduates, 360 MS and 70 PhD students.
- Fall 2017 enrollments: 160 undergraduates, 153 MS and 11 PhD students

New Faculty Hires



Hui Lu
PhD, Purdue
Research Areas:
Cloud Computing,
Virtualization,

Operating Systems, Storage and
File Systems
Joined in Fall of 2017



Arti Ramesh
PhD, Maryland
Research Areas:
Machine Learning,
Data Mining, Data

Analytics, NLP, Learning Analytics,
and Social Network Analysis
Joined in Spring of 2017



Anand Seetharam
PhD, UMass
Research Areas:
Wireless Networks,
Information-centric

Networks, Mobile Computing,
IoT, and Multimedia Streaming
Joined in Spring of 2017

Research Highlights:

- Selected recent grants
 - Yao Liu. “CSR: Small: A Unified Approach Toward User-Specific Improvements of Quality of Experience for Video Streaming,” NSF, \$488,373.
 - Lijun Yin, et al. “CNS: Extending a Large Multimodal Corpus of Spontaneous Behavior for Automated Emotion Analysis.” NSF, \$999,961.
 - Ping Yang, Guanhua Yan, et al: “CICI: RSARC: Infrastructure Support for Securing Large-Scale Scientific Workflows”. NSF, \$999,999
 - Aravind Prakash. “ALBER: A Backward-Compatible Late-Stage Debloating Platform for Mobile and Desktop Environments”. ONR, \$792,000.
- Faculty continue to publish in top venues: *USENIX ATC, RTSS, PLDI, OOPSLA, ICS, CCS, ICDCS, MICRO, DAC, INFOCOM, MobiSys, CVPR, ECCV, ICML, IJCAI, KDD, NIPS, AAAI, ...*

Other Highlights:

- Recent PhD Graduates took tenure-track faculty positions at College of William & Mary, University of New Hampshire, and University of South Florida.
- Lijun Yin is the director of a new university Organized Research Center on Imaging, Acoustics, and Perception Science (CIAPS)
- Kanad Ghose named a Fellow of the National Academy of Inventors (NAI).
- Madhusudan Govindaraju won Chancellor’s Award for Excellence in Faculty Service
- Zerksis Umrigar won Chancellor’s Award for Excellence in Adjunct Teaching



New Faculty Hires:



[Renato Mancuso](#)

Real-time and embedded systems, multi-core performance isolation technologies



[Sofya Raskhodnikova](#)

Design and analysis of sublinear-time algorithms for combinatorial problems.



[Adam Smith](#)

Data privacy and cryptography



[Charalampos Tsourakakis](#)

Large-scale graph mining and machine learning



[Emily Whiting](#)

Computer graphics and computational fabrication

Research Highlights:

- Professor Leo Reyzin awarded Best Paper at [Eurocrypt 2017](#).
- Professor Rich West and students Zhouqun Cheng and Ying Ye awarded Best Student Paper at [RTAS/CPS Week 2017](#).
- Professor Kate Saenko and students awarded Most Innovative Solution on IEEE Large Scale Activity Recognition Challenge at [CVPR 2017](#).

Other Highlights:

- Professor Emily Whiting awarded [Innovation Career Development Professorship](#).
- Professor Sharon Goldberg awarded [Rising Star in Networking and Communication](#) by N2Women.
- Associate Dean and Professor Stan Sclaroff named [Fellow of both IAPR and IEEE](#).

Student Numbers and Growth:

- Department continues to expand as per 5-year plan to grow faculty by 50%
- Size of undergraduate degree program is up 540% over the past eight years.
- Over 100 students in the minor and over 100 students in the MS program.
- About 900 students will *take Intro to Computer Science* (required for majors) this year.
- *Intro to Computer Science* is 43% women in Fall 2017.

Organizational News:

- Red Hat and BU Department of Computer Science forge [\\$5 million partnership](#).
- BU CS successfully launched [BU in San Francisco](#), which combines an internship in the Bay Area with education in technology entrepreneurship in a residential program.



6 FACULTY MEMBERS HIRED IN COMPUTING IN THE LAST 3 YEARS



Assistant Professor
 Manuel Egele
 Cybersecurity



Assistant Professor
 Michel Kinsky
 Computer architecture
 and security



Assistant Professor
 Brian Kulis
 Machine learning



Assistant Professor
 Wenchao Li
 Dependable
 computing



Assistant Professor
 Alexander Olshevsky
 Multi-agent systems



Assistant Professor
 Lei Tian
 Computational
 imaging

NEW FACULTY OPENINGS: BU.EDU/ENG/ECEFACULTYSEARCH

RESEARCH HIGHLIGHTS

NEW \$150M nine-story Center for Integrated Life Sciences and Engineering will be home to synthetic biology, neuroscience, cognitive neuroimaging and tissue engineering research of ECE and other BU faculty.

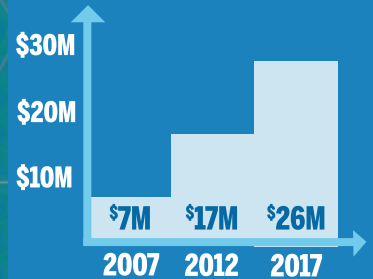
Prof. Orran Krieger is the founding director of Massachusetts Open Cloud and is **LEADING RED HAT'S \$5M (EXCLUSIVE) RESEARCH PARTNERSHIP WITH BU.** The new collaboration aims to advance projects including open source operating systems, cloud computing technologies and services, machine learning and automation and big data platforms.

ARE COMPUTERS SEXIST? A research team from BU and Microsoft Research New England, lead by Prof. Venkatesh Saligrama, discovered that the biased data humans feed into computers can lead the machines to regurgitate bias (work published at NIPS and featured on NPR).

The BUSeclab lead by Prof. Manuel Egele developed **PAYBREAK, THE FIRST PROACTIVE DEFENSE AGAINST RANSOMWARE**, a class of computer malware costing consumers and organizations in excess of \$300M each year.

RESEARCH FUNDING GROWTH:

↑16%
 AVERAGE ANNUAL
 GROWTH RATE OVER
 10 YEARS



FACULTY HIGHLIGHTS

The Hariri Institute for Computing and Computational Science & Engineering recently recognized Prof. Sahar Sharifzadeh and Prof. Manuel Egele as Junior Faculty Fellows for their **OUTSTANDING EARLY-CAREER COMPUTATIONAL RESEARCH.**

The Design Automation Conference recognized Prof. Douglas Densmore as one of the top **5 INNOVATORS UNDER 40** for his work in designing software tools for synthetic biology.

Prof. Sahar Sharifzadeh earned a highly-competitive Early Career Award from the Department of Energy for her **GROUND-BREAKING WORK IN NANO-ELECTRONICS.**

STUDENT NUMBERS AND GROWTH

740 STUDENTS:
 114 PHD
 238 MASTER'S
 388 BACHELOR'S

AVERAGE ANNUAL ENROLLMENT GROWTH OVER 6 YEARS:

↑21%
 PHD

↑16%
 MASTER'S

↑12%
 BACHELOR'S

ORGANIZATION NEWS

A \$115M gift by BU Alum Rajen Kilachand - **THE LARGEST GIFT IN BU HISTORY** – will be applied to interdisciplinary research in engineering and life sciences by ECE and other BU faculty members.

National Science Foundation awards \$20M to BU Engineering to create a multi-institution **ENGINEERING RESEARCH CENTER IN CELLULAR METAMATERIALS**, with the goal of synthesizing personalized heart tissue for clinical use.

Department of Computer Science

Bowling Green State University

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

New Faculty Hires:

The department has been hiring at least one tenure track faculty per year since 2012. This year's new faculty hire is Michael Decker with strong teaching and research funding experience focusing on software Engineering, particularly in software maintenance.

Research Highlights:

- Wu, Y. and Roy, S. received an NIST grant, titled "Incorporating Standards into Digital Forensics Curricula", from September 01, 2017 to February 28, 2019.
- Roy, S. received a multi-institutional grant from NSF, titled "SaTC: Data-driven Approaches for Large-scale Security Analysis of Mobile Applications", from August 15, 2017 to July 31, 2020.
- Dyer, R. was awarded two 3-year multi-institutional NSF grants, one for \$2.1M and the other for \$1.5M, in 2016.

Other Highlights:

- Dyer, R. received the 2016 BGSU Outstanding Early Career Award.
- Carlson, J. started a new mentorship program, Code4Her, for girls in grades 5 through 8 in 2016, with a \$10,000 Google IgniteCS grant and private donations. She also received the 2017 BGSU Distinguished Instructor/Lecturer Award.
- A video game, "Come Back Home: The Tale of Anaaya", created by a team of BGSU Computer Science and Digital Arts students was chosen for the South by Southwest (SXSW) Gaming Pitch Competition in Austin, Texas in spring 2017.
- Chao, J. was named the inaugural Narayen Endowed Associate Professor in Computer Science, 2017 - 2020.

Student Numbers and Growth:

- The undergraduate student enrollment has been increasing each year and by more than 50% since 2011 to a total enrollment of 377 in fall 2017.
- Started a B.S. in Software Engineering degree program with 24 majors in fall 2017.
- The department supports two highly active student organizations: ACM student chapter and BGSU Women in Computing (BGWIC)
- BGSU CS was a Platinum Sponsor of 2017 OCWIC (Ohio Celebration of Women in Computing).

Organizational News:

- Established in 1969, we are the first Computer Science program in the state of Ohio.
- The B.S. in Computer Science program is now ABET accredited to September 30, 2023. The accreditation extends retrospectively from October 01, 2015.
- The department is in the process of creating a Digital Forensics Lab for a newly created specialization in Digital Forensics.

Bradley University, Department of Computer Science and Information Systems
<https://www.bradley.edu/academic/departments/csis/>

Student highlights

A graduate student, participated in and won two hackathons in 2017. At the SpartaHack at Michigan State University, she programmed Amazon Alexa's platform so that it could post on your Facebook wall as well as read from your Facebook feed. This graduate student won awards in two separate categories: (1) Best Automation Hack, and, (2) Best Voice Experience using Alexa. At the all-women's Pearl Hacks at The University of North Carolina at Chapel Hill, this same graduate student won the overall competition by building a Bitcoin security-inspired system to register refugees.

Six undergraduate computer science students collaborated with eight students in Bradley's Department of Interactive Media to build a game, "StarCats", for their senior project. This game placed in the top 5 of the E3 Collegiate Competition, sponsored by the Entertainment Software Association, and they have been invited to the convention to exhibit and share their game. These students have also been invited to showcase their game at IndieCade. CS&IS has a highly ranked, joint gaming program with Interactive Media.

Four undergraduate students participated in the annual programming contest held by the Consortium for Computing Sciences in Colleges Midwest Region at Taylor University.

Three undergraduate students won the College of Liberal Arts and Sciences Award in Computation and Mathematical Sciences at the 2017 Bradley University Student Scholarship Expo in April. Their project was entitled, *A Curve Interpretation and Rule Based Program for CAT Loaders and Haulers*, and the work was supervised by Caterpillar Inc.

A few faculty research highlights

Dr. Tachun Lin published two papers, "Survivable Cloud Network Design Against Multiple Failures Through Protecting Spanning Trees" and "Novel Survivable Logical Topology Routing by Logical Protecting Spanning Trees in IP-over-WDM Networks", in the IEEE/OSA Journal of Lightwave Technology and IEEE/ACM Transactions on Networking, respectively.

Dr. Yun Wang received a grant from the Stroke Center at OSF Saint Francis Medical Center to build a mobile project, "NAG: Neurology App of Guidelines", which provides a quick reference to clinical Neurology Guidelines. She also collaborated with students and the Stroke Center at OSF on "MINDt: Medical Imaging Neurological Display of Temperature", a system to provide effective treatment for stroke and head injury patients at the Illinois Neurological Institute.

Faculty update

Adam Byerly joined the department as a tenure track Lecturer. Prior to becoming full-time faculty, Adam had taught part-time at Bradley for several years. He has spent nearly twenty years working in industry as a software engineer including working independently for small and medium size businesses in various industries to more recently working as an Application Architect for Blue Cross & Blue Shield and then as an Analytics Technical Specialist at Caterpillar, Inc.

BrownCS NEWS

Dear Colleagues and Friends,

The start of the 2017-2018 academic year has brought some significant milestones for us. For the first time, we're Brown's most commonly chosen major, and 32% of our current students are women. We've developed and started implementing a comprehensive Diversity and Inclusion Plan, which you can find at www.cs.brown.edu/about/diversity/index.html. We've also been growing our research and education activities in the areas of Robotics, Cybersecurity, Data Science, Machine Learning, and Graphics. In collaboration with other units at Brown, we launched two new multidisciplinary Master's programs: one in Data Science and another, targeted at mid-career professionals, in Cybersecurity.

Please use the links below to read some of our news stories from the past year, or visit www.cs.brown.edu to learn more. You can also look for us on Facebook (Brown University Department of Computer Science) or follow us on Twitter (www.twitter.com/BrownCSDept).

Ugur Çetintemel
Professor and Chair

- Ellie Pavlick Joins Brown CS As Assistant Professor <http://bit.ly/2swNE6c>
- Theophilus Benson Joins Brown CS As Assistant Professor <http://bit.ly/2ILMAYy>
- Fislser Appointed Professor (Research), Undergraduate Program Associate Director <http://bit.ly/2kK83D2>
- Daniel Ritchie Joins Brown CS As Assistant Professor <http://bit.ly/2kQv6ZY>
- George Konidaris Joins Brown CS As Assistant Professor <http://buff.ly/2bW8RzY>
- Brown Receives \$1.5M To Establish A Data Science Research Institute <http://bit.ly/2it762z>
- Upfal, Binnig, Kraska, Van Dam Win A \$3.1M DARPA Grant For Data Exploration <http://bit.ly/2oQ5eQ5>
- Brown CS Announces Major Achievements In Data Science <http://bit.ly/2nG7DeG>
- Tim Edgar Publishes A New Book: Beyond Snowden <http://bit.ly/2wJF46y>
- Eli Upfal Publishes A Second Edition Of Probability And Computing <http://bit.ly/2tQPFKC>
- Brown CS Faculty Earn Sloan Fellowships Four Years In A Row, For A Total Of Eight <http://bit.ly/2IJA4eu>
- Krishnamurthi Will Serve On The CACM Research Highlights Editorial Board <http://bit.ly/2sFdYvl>
- Stefanie Tellex Wins A CAREER Award For Robots That Help People <http://bit.ly/2q2qzJf>
- Rodrigo Fonseca And Collaborators Win An NSDI Test Of Time Award <http://bit.ly/2ogXl9u>
- George Konidaris Wins An AFOSR Young Investigator Research Award <http://bit.ly/2fzHCDW>
- Savage Gives Inaugural Graves Distinguished Cyber Security Lecture At U Of Tulsa <http://bit.ly/2fhhXf6>
- Seny Kamara Has Been Chosen As A Boston Global Forum Dukakis Fellow <http://buff.ly/2dIY7cO>
- Amy Greenwald Gives A Keynote Address At Microsoft's Faculty Summit 2017 <http://bit.ly/2wTvXCX>
- Maurice Herlihy Gives A Keynote Address At PODC 2017 <http://bit.ly/2v1PnQM>
- Bootstrap Takes The Spotlight At A National Week Of K-12 Teacher Development <http://bit.ly/2uD5xUe>
- Amy Greenwald, 35 Brown CS Students Bring An Hour Of Code To 350 K-12 Kids <http://bit.ly/2hax4ol>
- Esha Ghosh Wins An Inaugural Microsoft Research Dissertation Grant <http://bit.ly/2tkmdz0>
- Tiffany Chen Has Been Named A Women Techmakers Scholar <http://bit.ly/2rZKTgt>
- Geopipe Wins \$100K At The NYU \$300K Entrepreneurs Challenge <http://bit.ly/2r1RkvO>
- Markell, Picard, And Tipperman Earn KPCB Fellowships, Setting A Brown CS Record <http://bit.ly/2n5ZL9G>
- Connor Gramazio Will Give An Invited Talk At OpenVis Conf <http://bit.ly/2m0ulm3>
- Brown CS Student Tiffany Chen Is Named A Changemaker Fellow <http://bit.ly/2ePT3QH>

New faculty hires

- Yuejie Chi - statistical signal processing, optimization, compressed sensing, machine learning, high-D and multi-modal data analysis
- Giulia Fanti - statistical inference, communication theory, and privacy-preserving systems
- Carlee Joe-Wong - mathematical and economic analysis of networked computer systems
- Gauri Joshi - performance analysis, cloud computing, machine learning
- Bryan Parno - theory and systems to investigate long-term, fundamental improvements in how to design and build end-to-end secure systems
- Virginia Smith - large-scale machine learning and distributed optimization

Faculty highlights

- Defined research thrust areas in Application Domains, Systems and Technologies, and Theoretical and Technological Foundations
- Assistant Professor Sankaranarayanan received a NSF CAREER grant to study light interactions
- Professor Priya Narasimhan received the Annual History Makers Award
- Professors Byron Yu and Steven Chase received a NIH grant for brain-computer interface research
- NIST awarded CMU researchers \$3.2M to help firefighters and first responders
- Associate Professor Anupam Datta awarded a \$3M, multi-university NSF grant on accountable decision systems
- Professor Andrzej Strojwas received the 2016 Kaufman Award for Distinguished Contributions to EDA
- Jelena Kovačević, Hamerschlag University Professor and Head, honored with IEEE Signal Processing Society's 2016 Technical Achievement Award
- Professors José Moura and Alek Kavčić revolutionized magnetic recording computer disk drive chip
- Raj Rajkumar, George Westinghouse Professor of ECE, named a 2016 Fellow of the National Academy of Inventors
- Assistant Professor Vyas Sekar awarded SIGCOMM's 2016 Rising Star Award
- Professors Matteo Pozzi and Bruno Sinopoli received a NSF grant to strengthen infrastructure

Student highlights

- CMU's hacking team won the world series of hacking, DefCon, for the 4th year in a row
- Last academic year, the incoming sophomore class was 33% women
- Created De-Stress with ECE, a monthly event series focusing on stress management for students
- Undergrad students hosted the largest freestyle tinkering festival to date, Build18

Infrastructure

- Opened the new Bertucci Nanotechnology Lab and Eden Hall Foundation Nanofabrication Cleanroom
- Redesigned the undergraduate wing to give underclassmen a relaxing space to work
- Continued construction of a new Maker Wing

Initiatives

- Released the Strategic Plan 2020; FIRE
- Hosted the 2016 Rising Stars Workshop, a two-day career building conference for the world's brightest female Ph.D. students in electrical engineering and computer science
- Hosted The Judith Resnik Year of Women in ECE, a series of weekly seminar speakers and monthly events to celebrate our female students, faculty, and staff
- Instituted an official teaching assistant training program
- The college founded the Center for Faculty Success, a one-stop shop for faculty needs



Department of Electrical Engineering and Computer Science

Case Western Reserve University

engineering.case.edu/eecs

Research Awards:

- **Professor Xusheng Xiao** has been awarded \$100K through the Samsung Global Research Outreach program in the category of Security & Privacy, Data Analytics and AI-based Security. The funded proposal title is "Automatic Inference of Application Reputation via PageRank on System Monitoring Data"
- **Taoming Liu, Murat Cenk Cavusoglu** won the Googol Best New Application Paper Award (Sponsored by Googol Technology (HK) Ltd) - to recognize the Best New Application Paper of the *IEEE Transactions on Automation Science and Engineering* (T-ASE) published in the previous calendar year. Paper title: "*Needle Grasp and Entry Port Selection for Automatic Execution of Suturing Tasks in Robotic Minimally Invasive Surgery*"
- APT Center Researchers awarded AHA funding in the amount of \$153, 248. **Michael Suster, PhD**, along with fellow APT Center Investigators **Professor Pedram Mohseni, PhD**, and **Evi Stavrou, MD**, as well as **Anirban Sen Gupta, PhD**, have received funding from the American Heart Association to develop a dielectric microsensor - called ClotChip – with the goal to provide a comprehensive assessment of a patient's blood coagulation status at the point-of-care.

New Undergraduate Degree:

- In 2017, the Department of Electrical Engineering and Computer Science began offering a Bachelor of Science degree in Data Science and Analytics. The degree offers a rigorous curriculum that explores the architecture of data science systems, storage processing and analysis of data, databases and querying techniques, scalable parallel data analysis and visualization. Electives include signal processing, data mining and machine learning.





DEPARTMENT OF COMPUTER SCIENCE

cs.colgate.edu

Recent Hires (Tenure-Stream)



Aaron Gember-Jacobson
Computer Networking

from Univ. Wisconsin–Madison



Madeline Smith
Human-Computer Interaction

from Northwestern Univ.

Recent Hires (Visiting)



Sandra Jackson
Computer Architecture

from Cornell Univ.



Darren Strash
Algorithms

from UC Irvine, Intel, and
Karlsruhe Inst. Technology

Research Highlights

- 17 undergraduate summer research fellows in 2017, externally and internally funded, mentored by 7 faculty members
- Papers co-authored with undergraduates published in each of the last two years; students presented work at regional, national, and international conferences
- Best paper nomination at GECCO 2017
- Faculty awarded recent grants from NSF, DARPA and publishing in top-tier venues across CS

Other Highlights

- An active Women in Computer Science club, Programming club, and Data Science club
- Students run 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 to attend the Grace Hopper Conference in each of the last two years

Student Numbers and Growth

- Colgate is a highly selective liberal arts college of approximately 2900 undergraduates
- The department is committed to small class sizes; still, 150–200 students take intro CS per 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 2012–2017

New faculty:

Fall 2016:

- Zhenming Liu, Assistant Professor, data science (Ph.D., Harvard)
- Bin Ren, Assistant Professor, HPC performance tools (Ph.D., Ohio State)
- Shuyin Jiao, Lecturer, computational mechanics (Ph.D., Univ of Houston)

Spring 2017:

- Dana Willner, Lecturer, bioinformatics (Ph.D., San Diego State)

Fall 2017:

- Dmitry Evtyushkin, Assistant Professor, security (Ph.D., SUNY Binghamton)
- Xiaojing Liao, Assistant Professor, security (Ph.D., Georgia Tech)
- Adwait Nadkari, Assistant Professor, security (Ph.D., NC State)

Research highlights:

- Andreas Stathopoulos is the W&M lead in the DOE Exascale Computing Project “Exascale Lattice Gauge Theory Opportunities and Requirements for Nuclear and High Energy Physics”.
- Denys Poshyvanyk received Most Influential Paper Awards from ICPC 2007 and ICSM 2006, and an ACM SIGSOFT Distinguished Paper Award at the 24th IEEE International Conference on Program Comprehension 2016.
- Xu Liu had three papers at ASPLOS '17, including a best paper finalist and another that received a HiPEAC Paper Award.

Other scholarly highlights:

- Gang Zhou was one of the starting Associate Editors for the new Elsevier Smart Health Journal established in 2016.

Student highlights:

- Awarded 7 Ph.D., 13 M.S., and 80 B.S. in Computer Science.
- Sent 8 students to the 2016 Grace Hopper Conference.

Organizational news:

- Part of a new interdisciplinary data science minor beginning in Fall 2017.

Faculty Changes



Neil Dantam
Joined Fall 2017
Assistant Professor



Wendy Fisher
Joined Summer 2017
Teaching Associate
Professor



Tom Williams
Joined Fall 2017
Assistant Professor



Cyndi Rader
Retired Spring 2017

Recent Highlights

- Hua Wang received an NSF CAREER Award in 2017 for a research project to create a new machine-learning model for mining various kinds of data that could lead to easier, earlier and less-costly detection of neurological diseases such as Alzheimer's or Parkinson's. The project, called "Robust Brain Imaging Genomics Data Mining Framework for Improved Cognitive Health," will receive \$409,641 over five years.
- A paper by Bo Wu and his students, titled Graphie: Large-Scale Asynchronous Graph Traversals on Just a GPU, was nominated for the Best Paper award at the 26th Int'l Conference on Parallel Architectures and Compilation Techniques (PACT 2017).
- Hao Zhang and Hua Wang, with PhD student Fei Han, received Best Paper Finalist at the 2016 Robotics: Science and Systems (RSS) conference, for their paper titled Robust Multimodal Sequence-Based Loop Closure Detection via Structured Sparsity.
- Qi Han has joined the ACM Distinguished Speakers Program.
- Tracy Camp was presented the very first Million Women Mentors' Stand Up For STEM Colorado Award by the Colorado Technology Association during this year's Women in Technology Conference (June 2017).

Student Achievements, Numbers, and Growth

- A team that included a Colorado School of Mines computer science student won the 2017 LinkedIn Intern Hackathon with their IntelliPill, a smart pill-monitoring system.
- 392 Undergraduate Students
- 53 Graduate Students
- Entering students in top 9% of high school graduating class

Organizational News

- 3 new CS+X tracks to choose from
- Over 350 girls participated in our spring 2017 outreach program: tech.mines.edu
- 16 companies partnered with CS@Mines via our Computing-Mines Affiliates Partnership Program (mapp.mines.edu), which provided 34 scholarships to current students
- New NSF grant to provide scholarships for academically talented, low-income students in Colorado to study in CS@Mines: paths.mines.edu

New faculty, 2017-2018



Christos Papadimitriou

Computer scientist and mathematician known for his work on computational complexity, algorithms, and extending computational approaches to economics, biology, and neuroscience.



Jeannette Wing

A researcher with expertise in security and privacy, Wing has held key positions in academia, government, and industry. She heads the Data Science Institute.



Lydia Chilton

With expertise in HCI, Chilton creates hybrid human-computer systems to solve problems humans and machines cannot solve by themselves. *PhD, University of Washington, 2015*



Nakul Verma

A machine learning researcher, Verma leverages intrinsic structure in data to design learning algorithms. He joins Columbia after five years at Janelia Research Campus, HHMI. *PhD, UC San Diego, 2012*



Ronghui Gu

Gu's research focus is programming languages and making critical software systems truly reliable and secure through formal verification. He arrives January 2018. *PhD, Yale, 2016*

Award-winning papers

Best Paper Award, SIGDIAL, August 2017

[The Role of Conversation Context for Sarcasm Detection in Online Interactions](#)
Debanjan Ghosh (Rutgers), Alexander Richard Fabbri, Smaranda Muresan

Distinguished Paper Award, USENIX Security, August 2017

[CLKSCREW: Exposing the Perils of Security-Oblivious Energy Management](#)
Adrian Tang, Simha Sethumadhavan, Salvatore Stolfo

Best Paper Award, Computational Complexity Conference, July 2017

[Settling the query complexity of non-adaptive junta testing](#)
Xi Chen, Rocco A. Servedio, Li-Yang Tan (Toyota Technological Institute), Erik Waingarten, Jinyu Xie

A Top Pick of Computer Architecture Conferences, IEEE Micro, May/June 2017

[Evaluation of an Analog Accelerator for Linear Algebra](#)
Yipeng Huang, Ning Guo, Mingoo Seok, Yannis Tsividis, Simha Sethumadhavan

Best Paper Award, CoNext, December 2016

[Maximizing Broadcast Throughput Under Ultra-Low-Power Constraints](#)
Tingjun Chen, Javad Ghaderi, Dan Rubenstein, Gil Zussman

Department numbers

55 Faculty

846 CS majors, a 386% increase over 5 years

45%* of CS majors are women
(of 788 reporting gender)

4,792 fall 2016 CS class enrollments

4,788 spring 2017 CS class enrollments

All student stats from 2016-17 academic year

Major faculty awards



David Blei awarded Guggenheim Fellowship, April 2017. Also named Fellow of the Institute for Mathematical Statistics, August 2017



Luca Carloni elevated to IEEE Fellow, November 2016.



Julia Hirschberg elected to National Academy of Engineering, February 2017. Also elevated to IEEE Fellow, November 2016.

Grants of note

\$14M, four-year IARPA grant to develop SCRIPTS, a system for searching over speech and text in multiple languages to find documents relevant to a user's English question. **Kathy McKeown** is principal investigator.

\$8M DARPA award to defend US power grid from attacks. **Dan Rubenstein** and **Vishal Misra** will help build a system to detect outages by monitoring out-of-band data (Twitter feeds, communications networks).

\$2.5M, three-year ONR Grant to build a security architecture to protect cyber-physical systems (CPSs) from failures and cyber-attacks. **Suman Jana** will lead effort, working with **Salvatore Stolfo** and **Simha Sethumadhavan**.



**Department of Computer
Science**
cs.cornell.edu

Cornell Computer Science flourishes in an Ivy League University, which allows for a unique culture of collaborations with disciplines across the campus. CS is positioned within an administrative unit (Computing & Information Science or CIS) that also contains Cornell's Information Science and its Statistics departments. This CIS structure allows ideas and technology of computation to benefit disciplines across the University, providing enormous leverage given the high quality of Cornell's research and students.

Currently, the CS department includes 45 tenure-track faculty (37 in Ithaca and 8 in NYC), with plans to grow to 60 over the next few years. Among the biggest events for Cornell CS this past year was the official opening of the Cornell Tech campus on Roosevelt Island in New York City, where CS graduate students have the opportunity to engage in work involving significant external engagement, including collaborations with engineering, business, and law students, to emerge as tomorrow's digital age leaders.

In Ithaca, Cornell CS added four new faculty members this year: **Austin Benson** develops computational frameworks for analyzing large-scale and complex datasets; **Eshan Chattopadhyay** focuses on complexity theory, pseudorandomness and cryptography; **Chris De Sa**, works on algorithmic, software and hardware techniques for high-performance machine learning; and **Bharath Hariharan**, is interested in computer vision and machine learning. Additionally, newly inaugurated Cornell president Martha Pollack joined as a faculty member in both Computer Science and Information Science.

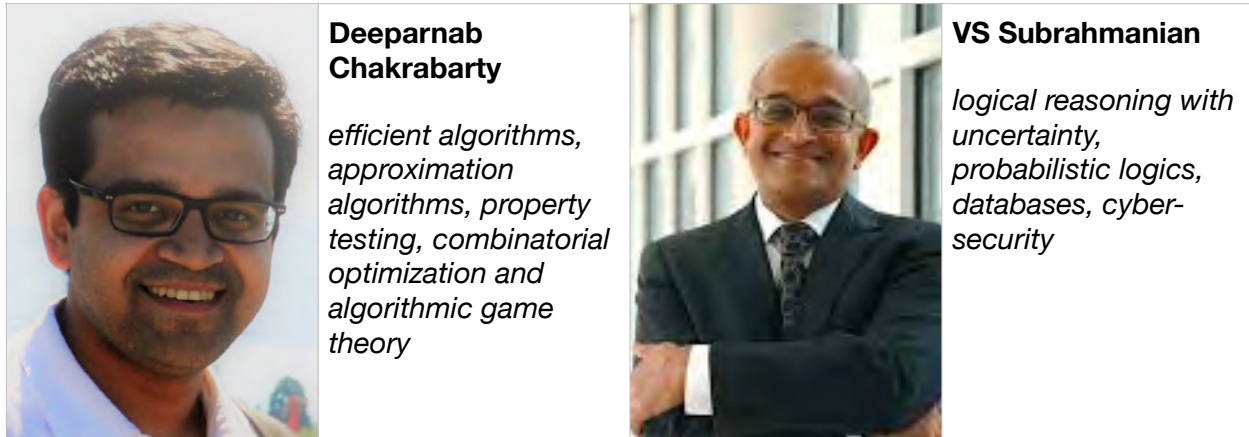
Other highlights over the past year include:

- Cornell CS faculty, through our Initiative for Cryptocurrencies and Contracts (IC3), has emerged as the premiere think tank for blockchain and other fin-tech initiatives.
- With a recent \$10 million grant from NSF Expeditions in Computing, CS faculty are creating the new field of computational sustainability. Cornell's Institute for Computational Sustainability is a multi-institutional research team focusing on solving challenges facing our planet.
- Key CS faculty are leading a worldwide group of scientists studying software defined networking (SDN), and they have pioneered the use of high-level languages with well-defined semantics (along with means and tools to prove properties of SDN programs).
- The theory faculty in CS continue to find deep connections with economics and social science, as well as exploring logical formalism for verification and programming languages. The most recent two recipients of the lifetime achievement awards for Theoretical Computer Science are both Cornell faculty.

CS at Cornell is dedicated to a diverse and inclusive environment for research and learning. This Fall, we welcomed 40% women into our matriculating class. CS also hosts an annual summer workshop for under-represented minority undergraduate students from across the country to encourage them to pursue research.

Department of Computer Science
Dartmouth College
www.cs.dartmouth.edu

New Faculty Hires



Research Highlights

- Professor Xia Zhou named to N2Women: Rising Stars in Networking and Communications
- Professor David Kotz and colleagues win ACM SIGMOBILE Test-of-Time Paper Award
- Professor VS Subrahmanian and colleagues win International Conference on Logical Programming Test-of-Time Paper Award
- Jessica Fan '17 wins Honorable Mention in the CRA Outstanding Undergraduate Researcher Award
- Emily Greene '17 wins Honorable Mention in the Collegiate Award from the National Center for Women & Information Technology

Other Highlights

- Professor Xia Zhou wins Alfred P. Sloan Fellowship
- Professor Lorenzo Torresani wins Fulbright Fellowship
- Professor Hany Farid inducted into the National Academy of Inventors

Student Numbers and Growth (2016-2017)

- Taught CS1 to 425 students on campus (10% of the student body and an increase of 45% from 5 years ago)
- Awarded 100 Bachelors (33% to women) and 37 Masters and Ph.D.s
- Sent 28 students to Grace Hopper Celebration of Women in Computing

Organizational News

- President, Provost, and Dean of Faculty have committed to 50% growth of Computer Science faculty
- The Computer Science Department is expecting to move into a new 175,000 square building along side the Thayer School of Engineering. This new building will allow Computer Science to grow by at least 50% and Engineering to grow by 100%.

School of Computing

DePaul University

cdm.depaul.edu

New faculty:

- Isuru Godage, Cyberphysical Systems Engineering
- Guy Zimmerman, Computer Science
- Mona Rahimi, Software Engineering
- Sharief Otiefy, Network Engineering
- Luisa Polania, Predictive Analytics

Faculty Highlights:

- Professor Amber Settle was elected Chair of the SIGCSE board.
- Professor Rosalee Wolfe was awarded an academy fellowship at the University of Hamburg to engage in research on the Academy's long-term project "Development of a corpus-based electronic dictionary of German Sign Language."
- Professor Radha Jagadeesan was part of a team that won the 2017 Alonzo Church Award for Outstanding Contributions to Logic and Computation for providing a fully-abstract semantics for higher-order computation through the introduction of game models, thereby fundamentally revolutionizing the field of programming language semantics, and for the applied impact of these models.

Student Highlights:

- MS in Predictive Analytics students were invited to present their capstone projects at the Chicago City Data Users Meetup held in May at the Microsoft Technology Center.
- Five School of Computing students (Artur Oganezov, Arpankumar Patel, Megan Pecho, Xavier Sepulveda and Sriram Yarlagadda) were recognized by Illinois Technology Foundation's "Fifty for the Future" as the tech industry's best and brightest students.
- The Security Daemons team placed fourth nationally in the Collegiate Cyber Defense Competition (CCDC) after winning the CCDC Midwest region finals for the third year in a row.
- Cybersecurity student Shannon Linares and Information Assurance alum Marco Alonzo were part of the winning team at this year's US Cyber Challenge Competition.

New curriculum:

- Master of Science in Product Innovation and Computing
- BS in Cyber-Physical Systems Engineering
- Interdisciplinary BS in Data Science

Facilities:

- The Idea Realization Lab, a new maker space
- Cyber-Physical Systems Lab
- Innovation Development Lab (iD-Lab)



Transforming the 21st century information and technology landscape

With more than **1,700 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**. Bringing computer and information science together under one roof, CCI is a dynamic, collaborative college with the depth and breadth to spot trends before they emerge, to solve problems before they occur, and to build a better tomorrow, starting today.

In August 2017, **Isaac L. Auerbach Professor & Dean Yi Deng** celebrated his first year at CCI. Dean Deng has shaped a clear vision for the future, positioning CCI at the heart of industry-driven, experiential learning in Philadelphia and beyond. With a strategic vision **driving growth in CCI's diverse, multi-disciplinary research**, the college is poised to be a catalyst for economic development in the region. CCI continues to engage industry in exciting new ways and strengthen the tech talent pipeline. From the launch of the new **CCI Corporate Partners Program** to fostering **Drexel's nationally recognized cooperative education program**, CCI is working to ensure the absolute best professional experiences for CCI students while **providing the most robust, sought-after, and job-ready technology talent in the region**.

CCI recently introduced its transformative **Women in Computing Initiative** built around the goal of **increasing female students enrolled at CCI by 50% in five years**. In addition to a vast array of recruitment and retention programs, both new and ongoing, CCI is moving forward quickly towards a goal of funding **100 new scholarships for women**.

Led by a **world-class faculty** comprised of leading computing and information science experts, the College offers a **rich portfolio of academic programs** at the BS, MS, and PhD levels, including computer science, software engineering, data science, information systems, health informatics, library & information science, and cybersecurity.

Driven by **nationally recognized leaders in scholarly excellence**, CCI's **research expertise** lies in broad areas including **computer science, computer security, human centered computing, informatics and data science, and library and information science**.

Select research highlights from an outstanding year

The Center for Visual and Decision Informatics (CVDI), an NSF Industry University Cooperative Research Center formed by the University of Louisiana at Lafayette and Drexel University in 2012, is poised to become the largest center of its kind in the U.S. after recently receiving approval for a second round of National Science Foundation funding. **CVDI is the only such NSF Center in the nation that focuses on data science, big data analytics and visual analytics**. Over the next five years, CVDI will consist of seven universities and 40 industry partners and will generate more than \$12 million in funding.

Drexel University has distinguished itself as **one of the top institutions for cybersecurity education in the nation**, according to the National Security Agency and the Department of Homeland Security. In June 2017, the NSA and DHS recertified the university as **Center of Academic Excellence in Cyber Defense Education**. Drexel's remains the first cybersecurity program in Philadelphia to receive this distinction and joins just over 200 programs in the nation that have earned the certification for "contributing to the protection of the National Information Infrastructure."

Drexel's **Metadata Research Center**, headed by CCI's **Alice B. Kroeger Professor Jane Greenberg** is a key partner on the new NSF/Northeast Spokes Award, "A Licensing Model and Ecosystem for Data Sharing," in conjunction with MIT and Brown.

Drexel University is a core member of the **Solutions for Operational Aviation Research Center of Excellence**, a consortium of academic institutions and key industry partners providing the FAA with research to modernize the technical training of air traffic controllers, aviation safety inspectors, airway transportation system specialists, engineers and technicians.

10% increase in undergraduate class size in fall 2017 (~1,100 UG and 600 G/PhD students)

CCI senior **Paritosh Gupta** and mechanical engineering senior **Danish Dhamani** developed the **Orai** app that uses artificial intelligence to train users to become effective communicators.

The **Drexel Women in Computing Society (WiCS)** recently won a seed-funding grant from **Google.org** and the **National Center for Women and Information Technology (NCWIT)**. WiCS plans to use the grant to enrich and expand their mentorship program.

CCI graduate student **Alexandra M. Wilder** was recently awarded **Society of American Archivist's (SAA) highly coveted F. Gerald Ham and Elsie Ham Scholarship**, which is given to students in the archival studies field based on academic merit.

Alex Felmeister, a PhD student in CCI's Information Studies program, recently received the **2017 iFellows Doctoral Fellowship** award for his thesis tentatively titled "Advancing collaborative pediatric brain tumor research through temporally based predictive modeling of a large scale national clinical data research network".

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



New Faculty Member

Eduardo Rojas, PhD USF 2017
3D Printing of Antennas, Waveguides



New Faculty Member

Houbing Song, PhD UVa 2012
Cybersecurity for Cyber-Physical Systems

Programs and Enrollment

| Program | Fall 2017 | Program | Fall 2017 |
|-----------------------------|-------------------|--|------------------|
| BS Computer Engineering | 48 | MS Cybersecurity Engineering | 15 |
| BS Computer Science | 57 | MS Electrical and Computer Engineering | 16 |
| BS Electrical Engineering | 67 | MS Software Engineering | 22 |
| BS Software Engineering | 57 | MS Systems Engineering | 20 |
| <i>Undergraduate</i> | <i>229</i> | MS Unmanned and Autonomous Systems Engineering | 11 |
| | | PhD in Electrical Engineering and Computer Science | 8 |
| | | <i>Graduate</i> | <i>92</i> |

Recent Grants and Contracts

- Towhidnejad et al., Multi-level Model of Swarm Intelligence for Resilient Autonomous Systems, AFRL Information Directorate, \$544k, two 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
- Butka et al., Multi-Domain Approach to Increased USV [Unmanned Surface Vehicle] Capability for Future Naval Missions, ONR, \$900k, five years

Points of Note

- New to CRA fall 2017
- ECSSE, pronounced “ecks-ee”
- PhD in EE&CS started fall 2015, now 8 students; first quals taken spring 2017
- Anticipate two hires to start fall 2018; cybersecurity, data science
- Strategic research thrusts: Cybersecurity and assured systems engineering; modeling and simulation for aviation and aerospace; detect and avoid for unmanned systems
- 19 faculty members; 17 doctorate, 2 masters
- Faculty affiliated with ASSURE (FAA COE for UAS), NEAR (Next-Generation Embry-Riddle Applied Research) Lab, Eagle Flight Research Center
- Hands-on undergraduate and masters programs; increasingly accurate approximation to engineering practice
- Two-semester cross-disciplinary capstone (all ECSSE undergrad programs) uses Scrum, industrial strength tools (Atlassian toolset) for project development, management
- Nearly 100% placement
- Largest civilian employers of graduates of ECSSE programs, long term: Boeing, Lockheed Martin; recent hires by same plus Rockwell-Collins, Harris, General Dynamics, Northrop Grumman, Microsoft, Intel

Student Organizations

- | | |
|---|---------------------------------------|
| • Artificial Intelligence Club | • Tech Eagles (HackRiddle hackathon) |
| • IEEE & IEEE HKN | • UPE |
| • Mobile Application Development (MAD) Club | • White Hat Eagles Cybersecurity Club |

Computer Science and Informatics Emory University

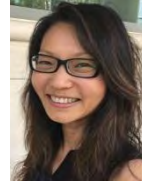
<http://csi.mathcs.emory.edu>

New faculty:



Dorian Arnold
Associate Professor
High Performance Computing,
Fault Tolerance, Systems
Joined Emory from Univ New Mexico

Recently promoted:



Li Xiong
Professor
Data Privacy/Security
Winship Distinguished
Chair Professor

Research Highlights:

- Best paper award AMIA 2017: PheKnow Cloud – Evaluating Phenotype Candidates from Medical Literature, Prof Joyce Ho (Emory) and co-authors Bridges, Wallace, Ghosh and Henderson
- Emory System Ranked 1st in Live Question Answering Challenge 2016 : PhD student Dennis Savenkov and Prof Eugene Agichtein receive recognition at NIST Text Retrieval Conference.
- Best paper award IEEE MDM 2016: An In-Memory Dual Space Grid Index for Moving Object Databases, PhD student Xiaofeng Xu and Prof Li Xiong
- Best student paper award ACM SYSTOR 2016: Enabling Space Elasticity in Storage Systems, Prof Ymir Vigfusson's students Sigurbjarnarson, Ragnarsson, and Yang with collaborator Balakrishnan

Other Highlights:

- Prof Avani Wildani gives plenary lecture on Neural Computing at 2017 Tapia Conference
- Prof Ymir Vigfusson receives NSF CAREER award for "Rethinking the Cache Abstraction"
- Profs Jun Kong and Shamim Nemati receive NIH K01 awards
- Prof Li Xiong receives grants from NSF, NIH, and PCORI for privacy research
- Prof Jinho Choi receives multiple research grants and gifts from industry for NLP research
- Prof Davide Fossati innovates teaching CS1 in group format and flipped classroom
- Ph.D. graduates took positions at UCSD, SUNY Albany, Google, Facebook, Amazon and Microsoft

Student Numbers and Growth:

- Taught Intro CS to 1098 students on campus (~25% of the Emory College student body)
- Awarded 56 Bachelors, 14 Masters, and 4 Ph.D.s
- Sent 21 students to Grace Hopper Conference

Organizational News:

- Department builds strength in Data Science and HPC/Systems through focused 3-year faculty hiring
- New standalone department of Computer Science proposed and proceeding toward realization

A couple of CSI research groups:



Students at 2016 Grace Hopper:





Department of Computer Science

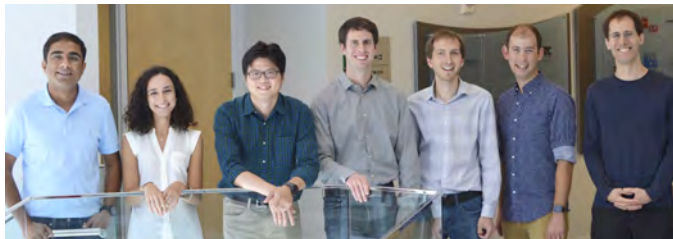
<http://cs.gmu.edu>

Fast Facts:

- Number of faculty: 47 (40 tenure-track)
- Undergraduate student enrollment: 1364
- Graduate student enrollment: 101 (Ph.D. program), 375 (in four M.S programs)
- Research Expenditures (FY 17): \$8M

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
- Song Min Kim, Ph.D. (University of Minnesota) – Area: Wireless networks, Internet of Things
- Parth Pathak, Ph.D. (North Carolina State), Postdoc (UC Davis) – Area: Next-generation wireless networks, Cyber-physical systems
- Thomas LaToza, Ph.D. (Carnegie Mellon), Postdoc (UC Irvine) – Area: Software Engineering, Human-Computer Interaction
- Dov Gordon, Ph.D. (University of Maryland), Postdoc (Columbia) – Area: Cryptography, Secure Computation
- Yue Cheng, Ph.D. (Virginia Tech) – Area: Distributed Systems, Storage Systems, Cloud Computing



Recent Research Highlights:

- NSF CAREER Award received by Yotam Gingold
- \$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

Awards/Recognition:

- Daniel Menasce received the 2017 Outstanding Faculty Award from the Commonwealth of Virginia
- Research papers by faculty members Thomas LaToza and Sanjeev Setia categorized as classic papers by Google Scholar

George Washington University Department of Computer Science

<https://www.cs.seas.gwu.edu/>

New Faculty hires:



Robert Pless is joining as Chair and Endowed Professor, with a research focus on Computer Vision and Machine Learning with applications to medical imaging and social justice.



David James is joining as Assistant Professor of the Practice, with a focus on Computer Science Education, Computing and Music and tools for collaboration at a distance



Thomas LeBlanc is Joining as Professor and University President. He served as Provost at Miami, and before that as Chair and Dean of Computer Science at Univ. of Rochester.

Research and Faculty Highlights:

- Prof. Xiuzhen Cheng recently elevated to Fellow of the IEEE
- Prof. Robert Pless received funding from the Bill and Melinda Gates Foundation to improve computing and analytic infrastructure to optimize breeding of sorghum in Africa
- Prof. Claire Monteleoni is general chair of the 2016 Climate Informatics Conference
- Prof. Poorvi Vora received the Public Engagement Award from the Election Verification Network for research protecting and promoting election integrity verifiability.
- Students Samsara Counts Joseph Schiarizzi organized Hackital, a 500 person hackathon focussed on technology and government

Department Highlights:

- Coherent, friendly department of 14 faculty with multiple hires expected each year for the next several years
- Fantastic research building opened in 2016 to encourage collaborations across engineering, including state of the art nano-fabrication facilities



Georgia Tech School of Computer Science

<http://scs.gatech.edu>

@gatech_scs

Professor Lance Fortnow, school chair

SCS by the numbers

- **35** full-time faculty
- **18** adjunct appointments
- **8** post-doctoral fellows
- **5** research scientists
- **1** research associate
- **\$33.8M** in active research funding
- **183** students
- **9** Ph.D. tracks, including computing architecture, security/cryptography, and theory
- **3** M.S. information security specializations: systems, policy, user and usability

Innovations

- Tackling the challenges of big data and the end of Moore's Law, SCS launched two new research groups: **Institute for Data Engineering and Science (IDEaS)** and the **Center for Research into Novel Computing Hierarchies (CRNCH)** in 2016.
- Georgia Tech is on the forefront of cybersecurity research, working with nearly **\$35M** in funding on projects with **IBM**, **Intel**, and **British Petroleum**.
- DARPA awarded a **\$9.4M** grant to a team of researchers, including SCS Professors **Alessandro Orso** and **Milos Prvulovic**, for their work on

devices to monitor the internet of things from malicious software.

- Professor **Alessandro Orso** won an ISSTA Impact Paper Award for his contributions to the software testing and analysis field. Professor **Merrick Furst** won an AIJ Classic Paper Award for a groundbreaking planning graph algorithm.

New Faculty Hires

- Professor **Lance Fortnow** signed a five-year extension as chair of SCS, where he has already grown the school since joining in 2012.
- Professor **Vivek Sarkar** joins us as the new Stephen Fleming Chair for Telecommunications, bringing his expertise on all forms of parallel computing.
- Assistant Professor **Jacob Abernethy** comes to us from University of Michigan with a focus on machine learning.
- Associate Professor **Vladimir Kolesnikov** and Assistant Professors **Jamie Morgenstern** and **Xu Chu** arrive in spring 2018.

New Faculty Hires:

- **Felix Herrmann:** EAS/ECE Joint Appointment Professor joining the CSE after being a professor for the Department of Earth, Ocean, and Atmospheric Sciences at the University of British Columbia.
- **Tobin “Toby” Isaac:** Assistant Professor received a Ph.D. from University of Texas at Austin. His research area is high performance computing.
- **Anne Benoit:** Visiting Associate Professor joining the CSE after being a junior member of the Institut Universitaire de France and teaching masters of computer science at ENS Lyon.
- **Woosang Lim:** Postdoctoral Fellow received a Ph.D. from the School of Computing at KAIST University and is now working with Haesun Park and Jimeng Sun of the CSE.
- **Kumar Aatish:** Research Scientist II received his Masters in Computational Science, Mathematics, and Engineering from the University of California San Diego.

Research Highlights:

- **D. Bader, O. Green,** DARPA, “SHARP: Software Toolkit for Accelerating Graph Algorithms on HIVE Processors,” Apr 2017-Oct 2021, **\$6.8M**
- **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 FY17: 143 Master’s Students, 107 PhD Students

Organizational News:

- New Center: Institute for Data Engineering and Science (IDEaS): Co-Directors Srinivas Aluru (CSE) and Dana Randall (CS)

Other News:

- **The top school at Georgia Institute of Technology for research expenditures per faculty** with an average of \$550,000 each and \$6.6 million total.
- **Over 16 Pinnacle Projects** with approximately \$39 million in active awards (FY 2017) across 45 active projects
- **Cyber analytics and cyber security:** David Bader has led several DARPA efforts producing research invaluable for identifying and defending against difficult-to-spot insider threats. Projects such as STINGER offer an open-source way to understand data with large, streaming graphs.
- **Awarded Centers for Computing:** Intel® Parallel Computing Centers, Big Data in Biosciences and Public Health, and High-Performance Scientific Simulation.
- **Paper Honored as First to Earn ACM ‘Results Replicated’ Badge:** Srinivas Aluru, along with a team of Georgia Tech Ph.D. students, produced a paper that was the first to ever be awarded a new designation from the ACM and SIGHPC for research integrity showing successfully duplicated results.
- **Strategic Partnership Program:** Entering its third year, this program brings experts together to tackle some of industry’s challenges regarding HPC. Firms represented included Accenture, Booz Allen Hamilton, IBM, Keysight Technology, LexisNexis, NVIDIA, Yahoo, National Security Agency, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Sandia National Laboratories.

Professor Amy Bruckman, interim school chair

Organizational numbers

- FY2016: **85** Ph.D. students, **194** master's students
- FY2017: 61 faculty and staff (**40** tenure-track faculty)

Research highlights

- **Mark Guzdial, Barbara Ericson**; *Expanding Computing Education Pathways Alliance*; Oct. 2012-Sept. 2018; **\$3.2M**
- **Mark Riedl**; *Interactive Machine Learning for Machine Training*; June 2017-May 2019; **\$1.1M**
- **Sonia Chernova, Andrea Thomaz**; *Leveraging Human Interaction to Learn and Reason over Multimodal Object Affordances*; July 2016-June 2019; **\$1.4M**
- **Karen Liu, Greg Turk, Charles Kemp**; *Robotic Assistance with Dressing Using Simulation-Based Optimization*; July 2015-July 2019; **\$1.2M**
- **Alex Endert, John Stasko**; *User-Driven Model Steering and Curation via Inference from Interaction and Model-Space Sampling*; March 2017-March 2021; **\$1.1M**
- **Tucker Balch, Michael Wellman**; *Detecting Financial Market Manipulation: An Integrated Data- and Model-Driven Approach*; **\$1M**

Other highlights

- **Paper Recognized for Enduring Contributions to Robotics** – IC Professor **Frank Dellaert** received the AAAI Classic Paper Award for work on the Monte Carlo Localization algorithm in a 1999 paper, *Monte Carlo Localization: Efficient Position Estimation for Mobile Robots*.

- **Annie Antón Serves on White House Commission on Enhancing National Security**: Antón, an IC professor and former school chair, served on the bipartisan commission that was created by presidential executive order on Feb. 9, 2016, by former president Barack Obama and submitted its final report on Dec. 1, 2016.
- **Devi Parikh Earns IJCAI Computers and Thought Award** – IC Assistant Professor Devi Parikh earned the premier award for AI researchers under the age of 35 for her contributions in semantic image understanding and related work.
- **IC Faculty and Former Students Awarded 10-Year Impact Award** – Professor **Gregory Abowd**, former Research Scientist **Matt Reynolds**, and alumni **Shwetak Patel** and **Julie Kientz** were given the award at Ubicomp 2017, recognizing their 2007 paper that used a single plug-in sensor to detect a variety of electrical events throughout the home.

New faculty hires

- **Seth Hutchinson** – Professor and KUKA Chair for Robotics, joining IC in Spring 2018 after 17 years at the University of Illinois at Urbana-Champaign.
- **Sauvik Das** – Assistant professor, joining IC in Spring 2018 after receiving his Ph.D. at Carnegie Mellon; research interests lie in HCI, data science, and cybersecurity.
- **Matthew Gombolay** – Assistant professor, joining IC in Fall 2018 after receiving his Ph.D. at the MIT; research interests lie in robotics, AI and machine learning, and human-robot interaction.

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

New faculty hires:

| | |
|--|--|
| Yuan Hong Assistant Professor Privacy and Anonymity, Differential Privacy, Secure Multiparty Computation | Kyle Hale Assistant Professor Operating systems, high-performance computing, computer architecture |
|--|--|

Research Highlights:

- \$8.4M in CS-lead grants/projects with 19 tenure-track faculty
- 83% of CS faculty are leading PI of funded research projects
- 6 NSF CAREER/DoD YIP Awardees

Other Highlights:

- 3 recent Best Paper Awards
- 67% of CS Full Professors are Fellows of Professional Societies (IEEE/ACM/AAAS/etc.)
- CS Tech Programming Team Advances to World Finals
- 51 Girls Learn to Program Robots in Computer Science's Middle-School Computer Discovery Camp in Summer 2017

Student Numbers and Growth:

- Awarded 64 Bachelors, 370 Masters, and 17 Ph.D.s in 2017
- CS department has doubled the number of students in the last 5 years to approximately 1200
- Master in Data Science program has grown to 67 students in its 3rd year (Fall 2017)
- New Master of Science in Computational Decision Science and Operations Research accepts the first students for the Fall 2016 semester.

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 2015
- \$7.6 million gift from Chris Gladwin, the founder of Cleversafe

IOWA STATE UNIVERSITY

Department of Computer Science

www.cs.iastate.edu

New Faculty Hires for the Academic Year 2017-2018

Forrest Sheng Bao, Assistant Professor

AI
Medical Signal/Image Processing

Borzoo Bonakdarpour, Assistant Professor

Hybrid/Cyber-physical Systems
Formal Methods
(Joining in January 2018)

Ali Jannesari, Assistant Professor

Program Analysis
Parallelism and Software Engineering
(Joining in January 2018)

James Lathrop, Assistant Professor

Molecular Programming
Information Theory
HCI and Computer Gaming

Jia (Kevin) Liu, Assistant Professor

Networking
Optimization
Machine Learning

Research and Scholarship Highlights for 2016:

- Submitted proposals during 2016 totaling over \$10M.
- The first **Midwest Big Data Summer School for Early Career Researchers** was held June 20-24, 2016 at ISU, and was organized by three of our faculty.
- The **Midwest Verification Day Conference** was held at ISU on October 21-22, 2016, and was organized by three of our faculty.

Engagement and Outreach in 2016:

- Outreach Committee provided computational thinking workshops for over 300 K-12 students
- Our department received an award from the Google igniteCS Program to design and implement a mentorship program. Nine undergraduate students served as mentors 10 hours per week for a group of area middle school students.
- One of our undergraduate students started Iowa Girls Code, providing mentorship to female students statewide.

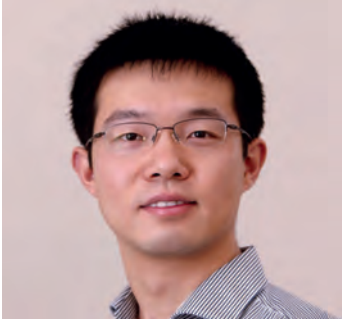
Students and Department Growth, and Curricular Developments:

- Undergraduate enrollment in Computer Science and Software Engineering has experienced an 80% increase in the past four years (it now totals over 1,300, evenly split between the two majors).
- Graduate enrollment in Computer Science has increased 84% in the past 2.5 years (it now totals over 200, evenly split between MS and PhD students).
- Our programming team has been to the ACM-ICPC World Finals 8 of the past 10 years, with 2016 marking the 4th consecutive year earning a place at the World Finals.
- The Computer Science undergraduate was again accredited by ABET, for a full six-year term.
- The department undertook the year-plus long process necessary to implement multiple tracks for the undergraduate degree, beginning Fall 2018.
- We are leading the effort in implementing a minor, a certificate, and a major in Data Science.

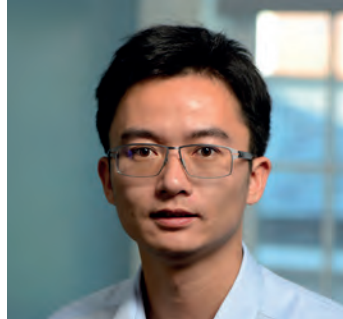
DEPARTMENT OF COMPUTER SCIENCE
JOHNS HOPKINS UNIVERSITY

CS.JHU.EDU

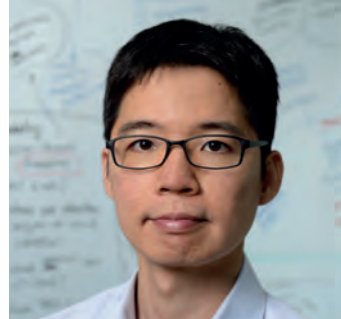
NEW FACULTY HIRES:



Xin Jin, Assistant Professor
(July 2017)
*Computer networks,
distributed systems*



Ryan (Peng) Huang, Assistant
Professor (August 2017)
*Operating systems, distributed
systems, programming
languages*



Chien-Ming Huang, Assistant
Professor (August 2017)
*Human-robot interaction,
human computer interaction,
robotics*



Mark Dredze, Associate
Professor (August 2017)
*Machine Learning, natural
language processing,
computational health
and medicine*

OTHER HIGHLIGHTS:

- MIT Technology Review: Innovators Under 35 recognized Suchi Saria
- NSF Career Award received by Vladimir Braverman and Matthew Green
- Robert B. Pond, Sr. Excellence in Teaching Award received by Joanne Selinski
- Joel Dean Excellence in Teaching Award received by Michael Dinitz
- Johns Hopkins Catalyst Awards received by Alexis Battle, Ben Langmead, and Xin Li
- 2017 Staff Excellence Award received by Javonnia Thomas

STUDENT NUMBERS AND GROWTH:



93

Bachelors

66

Masters

16

Ph.D. degrees

401

Undergraduates,
up 25% from last year



Undergraduate
enrollment includes
71 new freshmen,
up from 59 last year

151

Students currently
enrolled in CS PhD program

101

Students enrolled in the
CS Master's program

150+

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



30

Tenure Track Faculty

3

Teaching faculty

5

Research faculty

10

Research scientists
and postdocs

DEPARTMENT MILESTONES:

- The CS Department celebrated its 30th anniversary in the 2016–2017 academic year
- The Gerald M. Masson Distinguished Lecture Series was established to honor the department's founding chair

COMPUTER SCIENCE AT KANSAS STATE UNIVERSITY

2016-2017

RESEARCH

Our Four Core Focus Areas:



Cybersecurity



Cyberphysical
Systems



High Assurance
Software



Data Science

Expenditures:



\$3.3M

Newly Awarded Grants:



\$4.9M

STUDENTS

Degrees Awarded:

Undergraduates **83**

Masters **28**

PhD **4**



Other Facts:

81.6% Freshmen to Sophomore retention rate

150% Growth in students since 2010

389% Growth in female students since 2010

50% Increase in PhD students since 2012

Number of Students:

Undergraduates **613**

Masters **33**

PhD **46**



FACULTY

Stats:

16 Tenure Track

5 Instructional

6 Endowed Positions

7 NSF Career Awards

1 ONR Young Investigator Award



New Faculty Added in 2016:



Cornelia
Caragea



Arslan
Munir



George
Amariuca

Total Combined Experience Of:

16 Years of Faculty Experience

160 Refereed Publications

\$5.0M In Research Grants



STATE-OF-THE-ART FACILITIES

Our New Building:

- 40-million-dollar addition to the Engineering Complex
- New labs, classrooms, and offices
- Completed in 2016



School of Computer Science Kean University

<http://www.kean.edu/~compsci>

New faculty hires:



Mayra Bachrach
CS Education, Robotics



Mark Karol
IEEE Fellow, Networks



Daehan Kwak
IoT Networks



Kazi Zunnurhain
Cloud Computing

Research Highlights:

- *Lifeline*, an undergraduate research innovation in autonomous life-saving devices, was demonstrated at the New Jersey Tech Council meeting in June, to interested investors.
- Undergraduate research, a hallmark of Kean's School of Computer Science, was presented at CSCloud '17 and HCI '17, among other venues.

Other Highlights:

- A CS Education minor, the first in New Jersey and one of the first in the US, for students interested in teaching K-12 Computer Science was approved effective fall 2017.
- NSF Graduate Research Fellowships (2014, 2016) have been awarded to CS alums.
- NSF REU awards were given to two undergraduate students in 2017.
- Post-graduate student placements include roles at IBM, Motorola, Optum and Vanguard.
- Computer science faculty were recognized with 2017 university awards for student mentoring at both the graduate and undergraduate levels.
- HackKean '18 planning is underway. 2018 will be the 4th year of HackKean, a student-run outreach event.

Student Numbers and Growth:

- Graduate and undergraduate program growth and graduation rates continue to increase.
- Scholarships were awarded to undergraduate students to attend the Grace Hopper Conference (2 students) and the Tapia Conference (1 student).
- 2017 Student internships were outstanding, with students placed at the FBI, NJ State Police, BAE Systems, Harris Corporation, and Express Scripts, and other employers.

Organizational News:

- Computer Science moved to Kean's new North Avenue Building in late 2016.

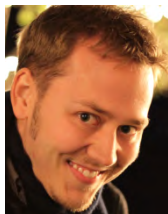


SCHOOL of
**COMPUTER
SCIENCE**



Department of Computer Science and Engineering
Lehigh University
<http://www.cse.lehigh.edu>

New Faculty Hires:



Eric Baumer

Human Computer
Interaction,
Social Informatics,
Technology Resistance

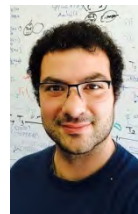
Ph.D. UC Irvine,
Post-doc Cornell



Miaomiao Zhang

Image Analysis,
Machine Learning,
Statistical Modeling

Ph.D. Univ. of Utah,
Post-doc MIT



Roberto Palmieri

Fault-Tolerant and High-
Performance Systems,
Distributed Computation

Ph.D. Sapienza Univ. Rome,
Post-doc Virginia Tech

Highlights:

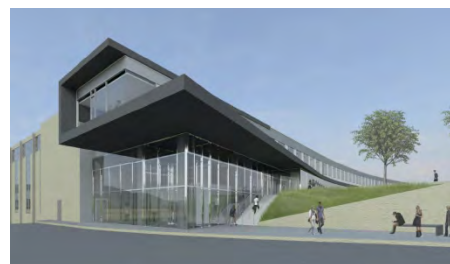
- Michael Spear received NSF/Intel Partnership on Computer Assisted Programming for Heterogeneous Architectures (CAPA) research award in collaboration with Xiaochen Guo from ECE, along with colleagues from Penn State and Arizona State.
- Yinzhi Cao received two NSF awards, including a Trustworthy Computing Systems (TWC) Medium award in collaboration with colleagues from Columbia University.
- Ting Wang received an NSF Secure and Trustworthy Cyberspace (SaTC) grant.
- Roberto Palmieri received an Air Force Research Laboratory Young Investigator Program award.
- Jeff Heflin is serving as the General Chair of the 16th International Semantic Web Conference.
- Mooi Choo Chuah co-chaired the IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering, July 2017.
- Liang Cheng served as a program co-chair for the IEEE International Conference on Sustainable Computing and Communications, October 2016.
- Brian Davison is a co-chair for the 41st International ACM SIGIR Conference on Research and Development in Information Retrieval, July 2018.
- Daniel Lopresti is continuing his term on the Computing Community Consortium Council, and is program co-chair for the 14th International Conference on Document Analysis and Recognition, November 2017.
- The CSE Department received a total of \$2.9 million in research funding since September 2016.

Student Numbers and Activities:

- Taught CSE 002 Fundamentals of Programming to 7.5% of all Lehigh undergrads last year.
- Graduated 111 Bachelors, 15 Masters, and 4 Ph.D.s.
- Sent 6 students to 2016 Grace Hopper Conference; will send another 6 students in 2017.
- Sent 3 students to 2017 ACM Richard Tapia Celebration of Diversity in Computing; Michael Spear served as vice chair for the Student Research Competition.

Organizational News:

- Daniel Lopresti serves as director for the university-wide Data X initiative which greatly expands Lehigh's capacities for teaching and research in computer and data science.
- CSE plays a primary role in Lehigh's new Data Science minor, led by Brian Davison.
- The CSE Department is moving to a new home! See the architectural rendering of Lehigh's renovated Building C, formerly the site of Bethlehem Steel Research.

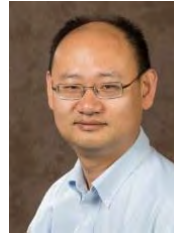


Department of Computer Science
Michigan Technological University
<http://www.mtu.edu/cs/>

New faculty hires:



Dr. Bo Chen
Cloud Computing Security
Mobile Device Security
Big Data Security
Software Security
Secure Hardware



Dr. Jianhui Yue
Computer Architecture
Operating System
System Optimization of Big
Data Process

Research Highlights

- S. Onder received NSF grant to develop a critical compiler and micro-architecture
- Z. Wang received NSF grant to develop a new cache locality theory
- M. Song received NSF grant to investigate under-ice mobile wireless communications
- L. Brown received U.S. Army grant to develop agent-based management of agile microgrids
- T. Havens received DoD Army grant to develop new algorithms to detect buried objects
- S. Nooshabadi received DARPA grant to develop synchronization software for sensor nodes
- M. Jeon and his students received the Best Paper Award at the 2016 ICAD conference
- K. Vertanen received Google Award to investigate abbreviated text input via a game

Other Highlights

- The Computer Science program is ranked 18th in mid-career median pay of all Computer Science programs in the nation, according to *PayScale*
- The Software Engineering program is ranked 10th in the nation, according to *CollegeChoice*
- Four faculty members received NSF CAREER Award
- One faculty member received the ACM SIGSOFT Impact Paper Award

Student Highlights

- J. Roznick received the DoD SMART Scholarship in 2017
- G. Asililoglu received the Graduate Student Service Award at the 2017 Michigan Tech Graduate Research Colloquium
- B. Closner, R. Strauble, and M. Davis won the 2016 NMU Invitational Programming Contest
- First-year women percentage in academic year 2017 reaches record high: 18.1%

Organizational News:

- The Department of Computer Science, Department of Electrical and Computer Engineering, and School of Technology at Michigan Tech offer a new Master of Science degree in Cybersecurity. The program utilizes a wide-range of academic and industry experience across multiple disciplines and provides students excellent education and research opportunities.
- Michigan Tech Institute of Computing and Cybersystems (www.icc.mtu.edu) brings faculty and students from across the campus together to discover new knowledge in the field of computing and information sciences. The Institute is composed of five research centers with 50 members from 12 departments and schools. The Institute received more than \$5.8 million external research funding and produced more than 300 technical papers in two years.

Gianforte School of Computing

Montana State University

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

Faculty Hires for 2017-2018

- Indika Kahanda, Assistant Professor (bioinformatics and computational biology, machine learning, data mining, biomedical natural language processing)
- Mary Ann Cummings, Assistant Teaching Professor
- Rance Harmon, Instructor



Faculty Sought for 2018-2019, <https://www.cs.montana.edu/opportunities.html>

- Two Assistant Professors
- One Instructor or Assistant Teaching Professor

Research Highlights

- David Millman (PI) and Brendan Mumeby (co-PI) received a three year, \$300K NSF grant entitled *Biofilm Resource and Information Database (BRaID): A Tool to Fuse Diverse Biofilm Data Types*.
- Brittany Terese Fasy (PI) and Mike Wittie (co-PI) are among the proposers of a three year, \$1,166K NSF grant entitled *Improving the Pipeline for Rural and American Indian Students Entering Computer Science Via Storytelling*.
- Clem Izurieta (PI) and Brendan Mumeby (Co-PI) received a \$288K NSF REU Site award from the National Science Foundation that commenced this past summer.
- Upulee Kanewala is the PI of a two-year, \$156K NSF grant: *Toward Sustainable Software for Science - Implementing and Assessing Systematic Testing Approaches for Scientific Software*.
- Mike Wittie is part of a team of researchers who received \$138K from the US Fish and Wildlife Service for a project entitled *Federal Lands Wildlife-Vehicle Collision Data Coordination*.
- John Sheppard received the Montana State University Vice President for Research's Meritorious Technology and Science Award.
- Ph.D. student Alan Cleary co-authored a paper entitled *Exploiting Frequented Regions in Pan-Genomic Graphs*. The paper received the Best Student Paper Award at the ACM BCB Conference

Student Numbers and Growth

- 493 majors, 26 M.S. students, 20 Ph.D. students in Fall 2016
- 431 majors, 25 M.S. students, 24 Ph.D. students in Fall 2015
- Awarded 6 Ph.D. degrees, 13 M.S. degrees and 73 B.S. degrees in AY 2016-2017

Organizational News

- A Computer Science B.A. degree should become available by Fall 2018
- We are remodeling our public spaces to communicate the relevance of CS more broadly.

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

New faculty hires:



Valerie Barr
Jean E. Sammet Professor of Computer Science
CS Department Chair & Co-lead of Data Science Program



Peter Klemperer
Assistant Professor of Computer Science and Innovation Hire in
Engineering

Highlights

- **Barbara Lerner** is in the 3rd year of a 3-year NSF grant, collaborative with Harvard University and Harvard Forest, to develop support for collecting provenance during scientific data analysis.
- **Audrey St. John** and **Heather Pon-Barry** are in year 3 of the Google funded project MaGE (Megas and Gigas Educate): Growing Computer Science Capacity at Mount Holyoke College
- **Audrey St. John** is in year 3 of the NSF funded grant CAREER: A Rigidity Theory for Multi-Robot Formations (IIS-1253146)
- Best paper award at the Computational Sustainability Track of AAAI: Xiaojian Wu, Akshat Kumar, **Daniel Sheldon**, and Shlomo Zilberstein. Robust Optimization for Tree-Structured Stochastic Network Design. AAAI Conference on Artificial Intelligence (AAAI), 2017.
- **Daniel Sheldon** has a new project on machine learning for extracting information about bird migration from weather radar <http://darkecology.cs.umass.edu/>
- CS Department is collaborating on the development of a Data Science major.

Student Numbers and Growth

- Awarded 29 Bachelors in 2017
- Expect to award 52 Bachelors in 2018
- 3 students completed 2016-2017 senior theses

Department of Computer Science National University of Singapore

<http://www.comp.nus.edu.sg>

Recent faculty hires (Joined July 2017):



Trevor Erik CARLSON
Efficient Processor Cores;
Fast, Accurate Performance
Analysis



Reza SHOKRI
Machine Learning and Data
Privacy

Research Highlights:

- STOC 2017 Best Paper Award – Deciding Parity Games in Quasipolynomial Time (C. Calude, S. Jain, B. Khossainov, W. Li, F. Stephan)
- RSS 2017 Best Systems Paper Award – XPose: Reinventing User Interaction with Flying Cameras (L. Ziquan, M. Shridhar, D. Hsu, S. Zhao)
- Prof Ken Sung is part of a team that uncovered the role of spindle matrix proteins in NSC reactivation
- Apache SINGA is listed as a top-10 machine learning framework

Other Highlights:

- Prof Li-Shiuan Peh elected IEEE Fellow
- Dr. Yair Zick has been named a Fellow under the National Research Foundation Fellowship
- Sketchbook Motion, an app developed by A/P Zhao Shengdong, has been named Apple's Best iPad App of 2016
- Dr. Prateek Saxena has been named one of the ten honorees of the regional MIT Technology Review Innovators Under 35 for Southeast Asia, Australia, New Zealand and Taiwan.
- Dr Bryan Low has been appointed World Economic Forum Global Future Council Fellow for The Future of Artificial Intelligence (AI) and Robotics
- Prof Ooi Beng Chin has been awarded the prestigious 2016 China Computer Federation (CCF) Overseas Outstanding Contributions Award for his research in the field of databases
- ViSenze, a spin-off company by Prof Chua Tat Seng, has raised US\$10.5 million in Series B funding
- Prof Tulika Mitra received the Prof S K Chatterjee Outstanding Woman Researcher Award by IISc

Student Numbers and Growth:

- NUS launches two new part-time Bachelor of Technology (BTech) programs in Software Engineering and Cyber Security
- NUS is opening up 140 courses to its alumni over the next three years as part of its efforts to promote lifelong learning (at no cost!)
- CS major intake has grown by 20% in 2017/18

Organizational News:

- NUS Computing received the Top Achievement Award for having the most number of graduates participating in the recent Commencement Class Giving 2017 campaign
- CS launches 18-month internship co-op program in InfoSecurity
- A new building for the School of Computing will be ready in 3 years' time!
- CS professors are helping numerous newly funded national initiatives, including the National CyberSecurity Lab, the Singapore CyberSecurity Consortium, the Singapore Data Science Consortium, and the AI Technology at AI.SG

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 40-50 students annually, with around 90 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 19 tenure track faculty, 5 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 problem; we specialize in architectures that are demonstrably secure and implementable in the Cloud and 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, software-defined data centers, and the Internet. Autonomous and robotic 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, 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 of our student theses have led to publications in major conferences and frequent best-paper awards.

Department in numbers

Faculty: 36 tenure-track, 13 contract, 21 affiliated/associated, 74 PhD students, 397 students in 2 MS programs, 588 majors, 400+ minors.

Enrollments: 320% increase since 2006-7. 4052 fall enrollments. 35% MS acceptance rate, 9% PhD acceptance rate.

Academy Members and Society Fellows: 3 NAE/NAS, 1 Royal Society, 2 Academia Europea, 5 ACM, 3 IEEE, 4 SIAM, 2 AMS. 5 Sloan Fellows, 1 AAAS Fellow, 13 PYI and CAREER awards.

Major faculty awards: Nevanlinna Prize, Waterman Award, Guggenheim Fellowship, Humboldt Prize, Academy Award.

Major Distinctions 2016-17



Yann LeCun elected to the National Academy of Engineering or developing convolutional neural networks and their applications in computer vision and other areas of artificial intelligence.



Subhash Khot received MacArthur Fellowship, and was elected Fellow of Royal Society for his definition of the 'Unique Games' problem and leading the effort to understand its complexity and pivotal role in the study of efficient approximation of optimization problems, leading to breakthroughs in algorithmic design and approximation hardness.



©NYU Photo Bureau: Gallo

New building: This year the Computer Science department moved to new space at 60 Fifth Ave (former Forbes Magazine building), which it shares with the Center for Data Science (CDS). This move expands the space available for CS growth and strengthens the links of CS to many other disciplines through the CDS.

New educational programs

MS in Computing, Innovation and Entrepreneurship and Tech MBA (joint with School of Business)
Data Science PhD program (Center for Data Science).

Other Faculty distinctions in 2016-17

SIAM Fellow (Spencer); IACR Fellow (Shoup); National Academy of Inventors (Perlin); Simons Senior Fellow (Wright); CAREER (Panozzo); Google Faculty Award (Cho); Privacy Enhancing Technology award (J. Bonneau). INRIA International Chair (D. Shasha). World's Top 50 Industrial IoT, 5G Innovators (Rappaport); Silver Professorships

New faculty recruited



Joan Bruna, Machine learning, statistics, foundations of deep learning. Previous affiliation: Berkeley Statistics.



Joseph Bonneau, Security, secure communication, cryptocurrencies. PhD Cambridge, postdoc Stanford.



Anirudh Sivaraman, Networking, programmable routers. PhD MIT.



Aurojit Panda, Networking, correctness in systems. PhD Berkeley.



Rajesh Ranganath, Machine learning, probabilistic modeling, inference, applications to healthcare. PhD Princeton.

Student distinctions

Google PhD fellowship (Arjovsky), Adobe Fellowships (Gil-Ureta, Hu, & Jiang), Dean's Dissertation Fellowship (Pavlinovic, Sukhbaatar, and Venkataraman).

Notable awards and gifts

Facebook (500k/year for PhD student support). 3.7 mln. Samsung funding for research in deep learning. Continuing Moore-Sloan Berkeley-NYU-UW Data Science Environment funding.

(Overton, Spencer); Lovie Award (LeCun); NYU Teach/Tech Award (Engel & Kapp); SIGCOMM best paper (Sivaraman); IEEE S&P ("Oakland") distinguished paper (Walfish); IEEE CSCloud and Computational Science conferences best papers (Mishra); Distinguished paper award at the IEEE/ACM ASE (PhD students Pavlinovic and Wies),

Conferences and workshops chaired/organized

NIPS 2017 (Fergus), ACM Hot Topics in Networking (Walfish), Workshop on Domain Decomposition (Overton), ISSAC (Yap), VSTTE and TAPAS 2017 (Wies), Arab Women in Computing (Odeh), Chair of IEEE-NY Computer Society (McIntosh)

Research Highlights:

- Active research exceeds \$64M with \$16.5M in new awards in 2016-17
- M. Chi receives NSF CAREER Award, becoming department's 28th CAREER winner
- Selected to be an NSA Science of Security Lablet (with Carnegie Mellon, University of Illinois - Urbana Champaign and University of Maryland) since 2011 with \$13M funding
- 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
- Selected as a new site of the existing NSF Center for Hybrid Multicore Productivity Research (CHMPR) IUCRC
- Published highly cited research study finds gender bias in open-source programming
- Released device allowing users to manipulate 3-D virtual objects more quickly
- Announced new system that makes it harder to track Bitcoin transactions
- Released new gaming tool to increase adaptability, autonomy of non-player characters



*Dr. Laurie Williams
Interim Department Head*

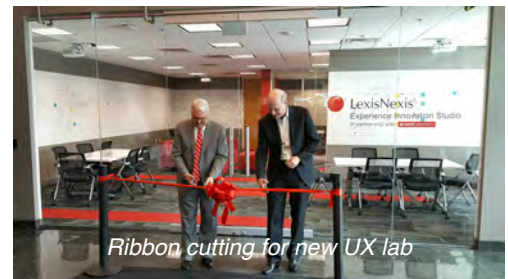
Organizational News:

- Department celebrates its 50th Anniversary in the fall of 2017 ([events](#))
- Undergraduate female enrollment up 55% in last decade
- NC State ranks #1 in the nation in number of female tenure-track/tenured faculty in Departments of Computer Science in Colleges of Engineering!
- Launched three new MS tracks; Security, Data Science & Software Engineering
- Opened new multi-disciplinary Games and Visual Narrative Suite
- NC State ranks #13 top supplier of talent to Silicon Valley companies (#7 non-CA)
- Ranked Top 10 Most Affordable Online Master's in Computer Science Degrees
- *Princeton Review* ranks gaming program #7 among public universities; #38 overall
- *USN&WR* ranks Online Computer Science & Networking Programs #6 in nation



Partnerships in Action:

- ePartners Program boasts >100 corporate partners generating ~\$1.5M annually in cash support & faculty awards
- Fidelity Investments Speakers Series enters 11th year
- LexisNexis and NC State open new multi-disciplinary User Experience Lab
- Microsoft Research names L. Williams Outstanding Collaborator



Special Awards for 2016-17:

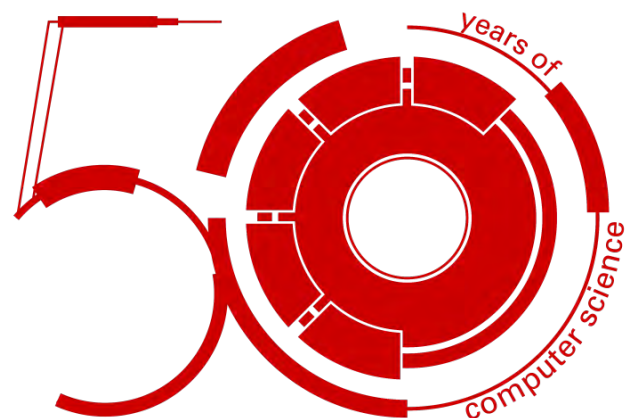
- T. Menzies wins Mining Software Repositories Foundational Contribution Award
- M. Singh elected an AAAI Fellow
- R. Dutta named ACM Distinguished Engineer
- F. Mueller honored as IEEE Fellow
- M. Vouk honored as IEEE Life Fellow
- D. Kekas receives AURP Leadership Award

Student Enrollment (Fall 2017):

| | |
|-----------------|------------|
| • Undergraduate | 1,049 |
| • Masters | 507 |
| • PhD | <u>197</u> |
| Total | 1,753 |

- Accepted Fall 2017 Undergrads strongest class ever with weighted GPA of 4.66 and avg SAT of 1399 (on 1600 scale)

May 2017 Avg Salaries - \$70K BS / \$108K MS



Northeastern University

College of Computer and Information Science

2017



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



Aanjan 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



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

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

RESEARCH HIGHLIGHTS

BEST PAPER AWARDS

2015-2017 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

CAREER & YOUNG INVESTIGATOR AWARDS

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

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 Network Science Institute (<http://www.netsci.org>) and the newly formed Cybersecurity and Privacy Institute (<http://cyber.ccis.northeastern.edu>)

BY THE NUMBERS

- 61 TT/T faculty total - (25% interdisciplinary with another college)
- 4 PhD programs - Computer Science, Information Assurance, Personal Health Informatics, Network Science
- 171 PhD Students - 29% female

COOPERATIVE EDUCATION

Cooperative Education (co-op) is a cornerstone of our MS and undergraduate programs. CCIS places 1000 students in six month co-ops at 500 companies nationwide.

Computer Science at Northwestern University embodies three core values: technical excellence, whole-brain thinking, and highly interdisciplinary work. [Northwestern CS](#) is driven by the goal of constantly pushing at the boundaries of the field with exceptional work in programming languages, machine learning, network security, computational imaging, and educational applications. Northwestern CS has developed an approach that is truly interdisciplinary, with faculty and students working with colleagues in journalism, business, music, and education to create innovative, impactful results.

Expansion Plan

- [Northwestern University has announced an ambitious plan to hire 20 new computer science faculty members and transform the role of CS within the University.](#) Half of the new faculty appointments will be in core CS areas and half will be structured as collaborative “[CS+X](#)” appointments with other disciplines.
- As part of this expansion, Computer Science will move into newly remodeled space in the Mudd Building on Northwestern’s Evanston campus. [Learn more about our vision.](#)

New Faculty

- Northwestern is excited to announce three new computer science faculty members:
 - **Han Liu**, associate professor joining from Princeton, exploits computation and data as a lens to explore science and machine intelligence.
 - **Christos Dimoulas**, assistant professor joining from Harvard, develops programming languages for secure and robust software systems.
 - **Konstantin Makarychev**, associate professor joining from Microsoft Research, designs efficient algorithms for computationally difficult problems.
- **These faculty join in addition to the nine faculty hired in the prior three years:** Simone Campanoni (Harvard/compilers), Anindya De (Rutgers/theory), Eleanor O’Rourke (UWash/CS+learning science), Jennie Rogers (MIT/databases), Michael Rubenstein (Harvard/robotics), Sara Sood (Pomona/A.I.), Jesse Tov (Northeastern/programming languages), Aravindan Vijayaraghavan (NYU/theory), and Marcelo Worsley (USC/CS+learning science).

Research and Award Highlights

- Northwestern CS faculty have won **six NSF CAREER Awards** in the past three years.
- **Uri Wilensky** received a [2016 Excellence in Educational Design Award](#) for the development of NetLogo.
- **Michael Rubenstein** received a [2017 Sloan Research Fellowship](#) from the Alfred P. Sloan Foundation.
- **Yan Chen** was named an IEEE fellow for design, measurement, and security of networking systems.
- **Brenna Argall** was named to [Crain’s Chicago Business “40 Under 40.”](#)
- **Peter Dinda** earned Best Paper at the 2017 IEEE International Conference on Cloud Engineering.

Education and Student Highlights

- Over the past five years, the number of Computer Science majors has tripled, and course enrollments have more than doubled. In response, CS has retooled curricula in many classes, including the [introductory CS-111](#), which is now one of the most popular courses at Northwestern.
- Northwestern students have won the ACM International Collegiate Programming Mid-Central Regional Contest three times in the past four years.

Faculty and Student Entrepreneurship

- [Narrative Science](#), founded by Professors **Kristian Hammond** and **Larry Birnbaum**, was named to *Forbes’s* list of [“Top 10 Hot A.I. Technologies.”](#)
- Based on Professor **Fabián Bustamante’s** research, alumni startup [PhenixP2P](#) launched a real-time video streaming platform that reached the final round of TechCrunch’s Startup Battlefield.
- Started by Professor **Alok Choudhary**, data science company [4C Insights](#) expanded its leadership team and raised \$26 million in series C funding.

Graduate Program of Computer Science and Engineering at The Ohio State University

Location: Columbus, Ohio, (the 15th largest city in the country).

History: The Ph.D. program was established in 1969, and department has graduated about 700 Ph.D. and more than 2,000 MS students.

Current graduate enrollment: 300+ including 200+ Ph.D. students

Multiple endowed fellowships for graduate students donated by alumni

- All the Ph.D. students are fully supported

Faculty: 40 tenure-track members, where 20 joined in the last 12 years.

- 29 NSF Career Awards
- 15 Fellows in AAAI, ACM and IEEE
- 4 endowed chair professors and university distinguished scholars

Faculty research: aiming at high quality and high impact

- Annual research expenditure: \$12 million (2016-2017)
- Research areas: AI, algorithms, architecture, computer security, data management, data analytics, graphics and visualization, high performance computing, networking, programming languages, software engineering, software systems, and theories.
- Many publications in the top venues in all above research areas
- Graduating 30-35 Ph.D. a year, supervising many MS projects

Recognitions: laying foundations in theory, making existence in systems

- Pioneered computer graphics and animation fields
- Widely used methods and software in systems and data processing
- Created influential conferences of VLDB and ICDCS

Outstanding graduates: distinguished leaders in industries and academia

- Fellows in major corporations, including Cisco, IBM, Intel, Microsoft
- Multiple Oscar Academy Awards in Technology
- National Academy Members in Engineering and Arts and Sciences
- Professors in many top computer science departments



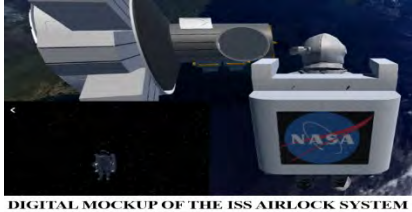


Computer Science Department Oklahoma State University

<http://cs.okstate.edu>



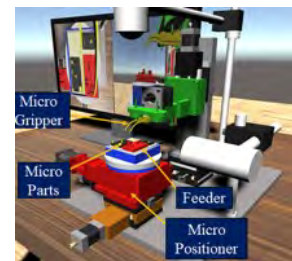
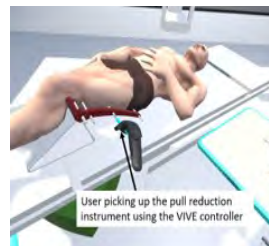
Research Highlights:

| REU Site: Big Data Analytics at Oklahoma State University | REU Site for Information Centric Engineering | Design of Deep Space Habitats (Collaborations with NASA) |
|---|---|---|
|  |  |  <p>DIGITAL MOCKUP OF THE ISS AIRLOCK SYSTEM</p> |

- **Next Generation IoT Test Beds**

Our department under the direction of Dr. J. Cecil achieved two major international milestones recently. As part of US Ignite/GENI projects, we successfully designed and demonstrated an IoT based advanced manufacturing Test Bed using Next Generation networking principles; this is the first major IoT implementation globally in advanced manufacturing.

Another notable achievement is the creation of a Distributed Virtual Reality based Training Simulator for orthopedic surgery; our new Center collaborated with Dr. Miguel Pirela-Cruz (Texas Tech Health Sciences Center, El Paso) in developing this simulator to train medical residents.



- **Summer UAV flight campaign:**



Dr. Crick's Robotic Cognition Laboratory plays a major role in the \$6,000,000 CLOUDMAP project. This NSF-funded program involves four universities and seeks to improve meteorological understanding of the near-surface atmospheric boundary layer, as well as improve the timeliness and accuracy of severe weather forecasts. This summer, over 65 researchers and students converged on the OSU campus for a week of joint deployment and testing of dozens of different aerial platforms.

New Programs: Graduate Certificate in Big Data Analytics

New faculty search: Two Assistant Professor Positions beginning Fall 2018

Enrollment Numbers:

Undergraduate majors – 237
Graduate students – 81

Faculty

- 56 Tenured/tenure-track faculty
- 20 Instructors
- 1 Member of the National Academy of Engineering
- 1 Fellow of the National Academy of Inventors
- 4 Editors-in-chief of internationally recognized academic journals
- 13 ACM/IEEE fellows
- 23 Young investigator/CAREER awards

Research

- \$11.5M in research expenditures (2016-2017)
- 34 patents issued in the past 10 years
- 14 spinoff companies + licenses

Research Areas of Excellence

- Artificial intelligence and robotics
- Communications and signal processing
- Computer graphics and visualization Cybersecurity
- 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

2016-2017 National Awards

- Attila Yavuz: NSF CAREER Award
- Arun Natarajan: DARPA Young Faculty Award
- Margaret Burnett: Computing Research Association Undergraduate Research Faculty Mentoring Award
- Tom Dietterich: AMiner Most Influential Scholar Award
- Gabor Temes: Semiconductor Industry Association (SIA) University Researcher Award
- John Wager: National Academy of Inventors Fellow

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 2016)
 - 3,123 undergraduate students
 - 248 master’s students
 - 232 doctoral students
- Degrees awarded (2016–2017)

| | Bachelor’s | Master’s | Doctoral |
|-----|------------|----------|----------|
| ECE | 124 | 58 | 17 |
| CS | 502* | 81 | 18 |

**One of the top in the nation*

- Enrollment almost doubled in the last 5 years
- \$3.6M in scholarships awarded to EECS students

Affiliated Centers and Institutes

- Center for Design of Analog and Mixed-Signal Circuits (CDADIC)
- The 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)
- Oregon Cybersecurity Center of Excellence (CCoE)



*Once Upon an Algorithm
How Stories Explain Computing*
Martin Erwig
MIT Press 2017

Times Higher Education
review: <https://goo.gl/HU81gF>

College of Information Sciences and Technology
Penn State University
ist.psu.edu

New Faculty Hires:

- Saeed Abdullah, Assistant Professor
- Jim Farrugia, Assistant Teaching Professor
- Ben Hanrahan, Assistant Professor
- Russ Houseknecht, Lecturer
- David Hozza, Lecturer
- Alison Murphy, Assistant Teaching Professor
- Linhai Song, Assistant Professor
- Jian Wu, Assistant Teaching Professor
- Nan Zhang, Professor
- Zihan Zhou, Assistant Professor

Research Highlights:

- Four faculty earn [\\$4.4 million award](#) from NSF for “Penn State’s CyberCorps; Scholarship for Service Program”
- Dinghao Wu receives \$3.5 million award from the Office of Naval Research to support “A New Direction for Software Reverse Engineering and Binary Code Retrofitting”
- [Dongwon Lee](#) earns grant from NSF for “Training Computers and Humans to Detect Misinformation by Combining Computational and Theoretical Analysis,” (e.g. automated detection of fake news)
- James Wang earns two patents for [computing emotions aroused from images](#) and image annotation
- Zihan Zhou and James Wang earn patent for composition modeling for photo retrieval
- [Xiao Liu](#) wins ACM 2017 bronze medal during PLDI’s Graduate Student Research Competition

Other Highlights:

- “Raymond G. Tronzo MD Professorship in Cybersecurity” endowed with \$1 million gift from Diana L. Tronzo
- [Jessie Li](#) and [Dinghao Wu](#) earn NSF CAREER Awards
- Lee Giles honored with the 2018 IEE CIS Neural Networks Pioneer Award
- [Pete Forster](#) recognized by the Dept. of Homeland Security for research on battling extremism on campuses
- Research on [big data and severe weather](#), [social media personas](#), [veterans in IT careers](#), and [social media’s role in disaster response](#) receive considerable media attention

Student Highlights:

- First-year undergraduate enrollment in IST at the University Park campus up 30% overall, 75% for female students, and 63% for underrepresented students
- Nine female students attended both the Grace Hopper Conference and the Computing Research Association for Women Grad Cohort Workshop
- [Tyler Yazujian](#) named a 2016 CoSIDA Academic All-American (football)

Organizational News:

- New [B.S. in Cybersecurity Analytics and Operations](#) now offered on the University Park campus
- [Ranked #5](#) by U.S. News & World Report for “Best Online Graduate Computer Information Technology Programs”
- IST led new University-wide effort for [Penn State Startup Week](#), bringing more than 60 leaders in innovation and entrepreneurship to engage with students on campus



Ten first-year students visit leaders at Google, Microsoft, Boeing, Amazon, and others during Seattle alternative spring break trip

ENROLLMENT AT AN ALL-TIME HIGH

- At Purdue University, the demand for computer science continues to grow. Currently, **1,708 students** are enrolled in the undergraduate program — more than doubling the number of students enrolled just five years ago.
- With more than **4,000 applications for Fall 2017**, the program's admission percentage rate has gone down to 36 percent, even as the quality of applicants has gone up.

WOMEN ON THE RISE

- The total number of female CS undergraduate majors at Purdue has grown by 260 percent over the past five years, and **77 women** entered the computer science major as freshmen this fall.
- **Twenty-one percent** of first-year computer science majors at Purdue are now women, compared to 13 percent in 2015. Female faculty members have also doubled since 2012.

NEW FACULTY

As part of an ongoing expansion, Purdue's Department of Computer Science has hired eight new faculty members this year, for a total of 18 new faculty members in the past five years. Plans for future growth include nine positions starting in Fall 2018.

Assistant Professors

Simina Branzei, Ph.D. '15 (Aarhus University)

Research Area: Economics and computation

Christina Garman, Ph.D. '17 (Johns Hopkins)

Research Area: Practical and applied cryptography

Chunyi Peng, Ph.D. '13 (UCLA)

Research Area: Mobile networking, security

Yexiang Xue, Ph.D. '17 (Cornell)

Research Area: Decision making and machine learning under uncertainty

Ming Yin, Ph.D. '17 (Harvard)

Research Area: Social computing and crowdsourcing

Professors of Practice

Our new Professors of Practice will focus primarily on teaching and promoting the integration of academic scholarship with industrial experience.

George Adams, Ph.D. '84 (Purdue)

Gustavo Rodriguez-Rivera, Ph.D. '98 (Purdue)

Jeff Turkstra, Ph.D. '13 (Purdue)

NEW UNDERGRADUATE MAJOR IN DATA SCIENCE

In conjunction with the Department of Statistics, Computer Science has launched a new undergraduate major in **data science**, a response to industry trends and student demand.

NEW MASTER'S DEGREE IN INFORMATION SECURITY

The department recently launched a new master's degree in **information security for computing professionals**.

ROMPF WINS DOE EARLY CAREER AWARD

Assistant Professor Tiark Rompf received an Early Career Research award from the U.S. Department of Energy for his work in generative programming.

Stanford | ENGINEERING

Computer Science

cs.stanford.edu

Recent CS faculty hires (2016 and 2017):

Clark Barrett
Associate Professor (Research) of Computer Science
Areas: Formal Methods, Automated Reasoning
<http://theory.stanford.edu/~barrett>

Emma Brunskill
Assistant Professor of Computer Science
Areas Machine Learning, Artificial Intelligence
<http://www.cs.cmu.edu/~ebrun/>

Omer Reingold
Professor of Computer Science
Areas: Computational complexity and foundations of cryptography
<https://omereingold.wordpress.com/>

Mary Wootters
Assistant Professor of Computer Science and Electrical Engineering
Areas: Error correcting codes, randomized algorithms
<https://sites.google.com/site/marywootters/>

Matei Zaharia
Assistant Professor of Computer Science
Areas: Computer Systems, large-scale data processing
<https://cs.stanford.edu/~matei/>

Jeannette Bohg
Assistant Professor of Computer Science
Areas: robotics, perception
<https://am.is.tuebingen.mpg.de/person/jbohg>

2017 Faculty Awards:

Matei Zaharia received VMware's Early Career Systems Research Award
James Landay, Dan Boneh and Christos Kozyrakis were named ACM Fellows
Oussama Khatib received the IEEE Technical Field Award in Robotics and Automation
Yaov Shoham was named a Fellow of Game Theory Society and awarded the Feigenbaum Prize
Leo Guibas was elected to the National Academy of Engineering
John Mitchell was elected to the American Academy of Arts and Sciences
Tim Roughgarden was named a Guggenheim Fellow
Bill Dally received the Tau Beta Pi Teaching award

Student Numbers and Growth:

CS is the most popular undergraduate major at Stanford (about ~20% of UG majors)
Over 30% of undergraduate CS majors were women in 2016-17
Approximately 90% of all Stanford undergraduate students take a CS course

Organizational News:

Jennifer Widom was named Stanford's 10th Dean of the School of Engineering
The CS department has been approved to grow to 50 faculty FTE from the current 43 over the next few years.
Planning for a new building is currently underway.

Zakir Durumeric
Assistant Professor of Computer Science
Area: computer security
<https://zakird.com/>

Kayvon Fatahalian
Assistant Professor of Computer Science
Areas: visual computing, graphics, systems
<http://graphics.stanford.edu/~kayvonf/>

Tengyu Ma
Assistant Professor of Computer Science and Statistics
Areas: machine learning, algorithms
<https://www.cs.princeton.edu/~tengyu/>

Aviad Rubinfeld
Assistant Professor of Computer Science
Areas: Game theory, Computational complexity
<https://people.eecs.berkeley.edu/~aviad/>

Dorsa Sadigh
Assistant Professor of Computer Science and Electrical Engineering
Areas: learning and control, formal methods, human-robot interaction
<https://dorsa.fyi/>

Li-Yang Tan
Assistant Professor of Computer Science
Areas: Computational complexity
www.ttic.edu/faculty/tan

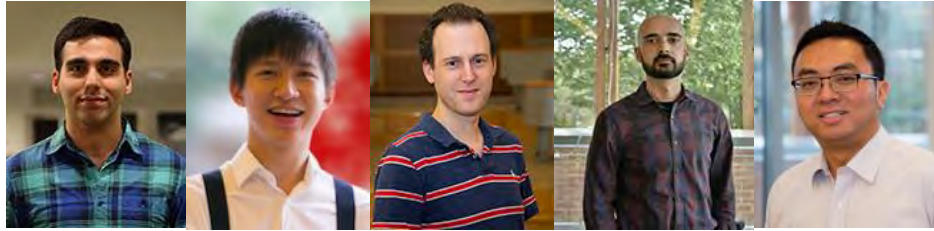
Recent CS Lecturer Hire:

Chris Gregg
Lecturer, Computer Science
<http://ecosimulation.com/chrisgregg>

Department of Computer Science
Stony Brook University
www.cs.stonybrook.edu

New Faculty:

- Five new tenure-track and four new teaching faculty equates to ~20% faculty growth.



L-R- Amir Rahmati (UMich; Security and Privacy; Joining 2018), Dani Yogatama (CMU; Machine Learning; Joining 2018), Roy Shilkrot (Augmented Reality, HCI; MIT), Francesco Orabona (Univ. of Genoa, Yahoo Research; ML Algorithms), and Xiaojun Bi (Univ. of Toronto, HCI; Google).

Research Highlights:

- Significant growth in cyber-security research portfolio with about \$10M in new funding. Sekar and Polychronakis' \$3.4M award ONR award is of our larger funding awards.
- New NSF-supported I/UCRC *Center for Visual and Decision Informatics* in collaboration with four other universities established to tackle big data analytics.
- Two new NSF CAREER awards (Jing Chen and Rezaul Chowdhury) bringing the department's total over time to 21 CAREER awardees.
- Seven faculty receive Google Faculty Research Awards which focused on user interface, machine learning, mobile applications, and human activity recognition.

Student Growth and Activities

- Awarded 266 Bachelors, 176 Masters and 16 PhDs in the academic year 2016-17.
- In the Fall 2016, a total of 6,535 students campus-wide were enrolled in CS courses. In the Fall 2017, the number grew by almost 15% with 7,347 students enrolled in CS courses within the department.
- Students and alumni were recognized with a number of awards this year including Grace Hopper Celebration Scholarships, ACM SIGKDD Doctoral Dissertation Award; NAI Young Academic Inventor's Award; SUNY Honorary Degree (Shutterstock founder, Jon Oringer), UG Provost Award for Academic Excellence; ACM-BCB Best Paper Award.

Other Highlights and Outreach

- SUNY awarded \$4.5M to the campus for new leadership hires in AI and cyber-security areas.
- New research opportunities in medicine for computer science – a \$75M facility is funded this year to house *Institute for Discovery and Innovation in Medicine & Engineering* (I-DIME).
- An interdisciplinary \$3M National Science Foundation Research Traineeship grant supports grad students working with big data from six departments including computer science.
- Faculty and undergraduate computer science mentors worked with 1,500+ K-12 students on programming lessons, research projects, and also a USENIX FAST17 presentation.



School of Information Studies (the iSchool)

Syracuse University

<http://ischool.syr.edu/>

New Faculty Hires:



Radhika Garg
Decision making for cloud
computing and IoT
PhD (2017), University of Zurich



Ingrid Erickson
Work, mobile devices and ubiquitous
digital infrastructures
Joined Jan 2017 from Rutgers

Research Highlights:

- In 2016, faculty published 36 journal articles and 27 referred conference papers
- 38% increase in grant awards received over FY2016; 181% increase in new funds committed
- Yang Wang received an NSF CAREER award for research on “Effective Privacy Management for People with Visual Impairments”
- A team led by Jennifer Stromer-Galley received an \$11.5 million IARPA contract to design and experimentally test an application to promote reasoning and decision-making.
- Kevin Crowston and Ingrid Erickson received an NSF award to run a research coordination network on “Work in the Age of Intelligent Machines”

Other Highlights:

- Rachel Ivy Clark received the 2016 Beta Phi Mu Eugene Garfield Dissertation Award
- Martha Garcia-Murillo received a Fulbright Scholarship for Spring 2017
- Caroline Haythornthwaite received the 2017 ASIS&T Research in Information Science Award

Student Numbers and Growth:

- In Fall 2017, 698 undergraduate (Information Management and Technology), 667 masters (Library & Information Science and Information Management) and 31 PhD students
- Incoming undergraduate class in 2017 is 41% female
- Online enrollments are greatly exceeding targets

Organizational News:

- New masters degrees launched in Applied Data Science and Enterprise Data Systems
- 2016 “IT Girls” retreat attracted 93 women high school students to Syracuse
- Fast Track agreements reached with several undergraduate institutions to streamline application to masters programs
- 92% placement rate and \$65K average starting salary for undergraduate class of 2016; 92% placement rate and \$80K average starting salary for IM masters graduates in 2016

Syracuse iSchool faculty, staff and PhD students in 2016:





Computer Science

TENNESSEE TECH

Faculty Highlights:

Two faculty promoted to Full Professor in AY 16-17

- William Eberle (Area: Data Science)
- Ambareen Siraj (Area: Cybersecurity)

Two new faculty (13 total: 10 tenure/tenure track, 2 lecturer, 1 administrative)

- Gerald C. Gannod, Harry C. Stonecipher Distinguished Professor and Chair (PhD, 1998, Michigan State University)
- David Brown, Lecturer (PhD, 2015, University of Alabama at Birmingham)

Research Highlights:

- Over 30 publications in journals and conferences by faculty and students
- New Grants Activated: \$1.5M. Includes the following:
 - Mohammad Rahman (PI)
 - Sheikh Ghafoor (PI), David Brown (Co-PI), Michael Rogers (Co-PI)
 - Gerald C. Gannod (Co-PI)
- Cybersecurity, Education, Research, and Outreach Center (CEROC) established in the College of Engineering. \$2M in new funding received from the State of Tennessee to supplement the \$4M grant received from NSF in FY16.

Program Highlights:

- Graduated first two PhD students (Ph.D. in Engineering w/Concentration in Computer Science)
 - Vitaly Ford (Area: Cybersecurity; Advisor: Ambareen Siraj; Appointment: Assistant Professor at Arcadia University)
 - Lenin Mookiah (Dissertation Title: “Personalized Context Mining of News Streams Using Graph-Based Approaches”; Area: Data Science; Advisor: William Eberle; Appointment: Data Scientist, Monsanto)
- Successful Launch of NSF SFS Cybercorps Scholarship Program via \$4M grant from NSF. 15 students currently under scholarship that includes \$22,500 stipend, full tuition, fees, and books, and more.
- Launch of the Data Science Concentration and the Parallel, Distributed, and High-Performance Computing Concentration
- Degrees Conferred
 - BS: 53
 - MS: 7
 - PhD: 2
- Enrollment Growth:
 - BS: 427 (up 15% from previous year)
 - MS: 24 (up 25% from previous year)
 - PhD: 18 (up 25% from previous year)

Community and Economic Development

- Department involved in creation of nearly 400 new jobs via recruiting of two new companies (SAIC, Digital Dream Forge) to the Cookeville area.
- \$45K in new funding provided to the department via new corporate partnership program with several companies



Recent Research Awards

Automatic Composition of Complex Pipelines Using Deep End-To-End Optimization

Sponsor: DOD-Air Force-Research Laboratory
PI: Xia "Ben" Hu

Collaborative Research: Managing Stress in the Workplace: Unobtrusive Monitoring and Adaptive Interventions

Sponsor: National Science Foundation
PI: Ricardo Gutierrez-Osuna, Co-PI: Annmarie MacNamara

Collaborative Research: CICI: Secure and Resilient Architecture: S3D: A New SDN-Based Security Framework for the Science DMZ

Sponsor: National Science Foundation
PI: Guofei Gu

Context Aware Mission Auditing System (CAMAS): A Framework of Mission Discovery, Learning, and Adaptation Algorithms for Mission Optimization

Sponsor: DOD-Air Force-Research Laboratory
PI: Jyh-Charn "Steve" Liu

DistressNet-NG: Next Generation Resilient Mobile Broadband Communication and Edge Computing for FirstNet

Sponsor: DOC-National Institute of Standards and Technology
PI: Radu Stoleru, Co-PI: Walter Magnussen

Effective Exploitation of Structural Data for Oncology

Sponsor: Cancer Prevention and Research Institute of Texas
PI: Thomas Ioerger, Co-PI: Kevin Burgess

Enhancing Visualization Skills and Conceptual Understanding Using a Drawing - Recognition Tutoring System for Engineering Students

Sponsor: National Science Foundation
PI: Tracy Hammond
Co-PIs: Stephanie Valentine, Kristi Shryock

Collaborative Research: A General Feature Learning Framework for Dynamic Attributed Networks

Sponsor: National Science Foundation
PI: Xia "Ben" Hu

Algorithms and Abstractions for Efficient Virtual-Memory Streaming and Big-Data Computing

Sponsor: National Science Foundation
PI: Dmitri Loguinov

HELIOS: Accelerated Recovery of Evolving Spatial-Temporal Dynamics

Sponsor: DOD-Advanced Research Projects Agency
PI: James Caverlee, Co-PI: Xia "Ben" Hu

Transforming Deep Learning to Harness the Interpretability of Shallow Models: An Interactive End-to-End System

Sponsor: DOD-Advanced Research Projects Agency
PI: Xia "Ben" Hu, Co-PI: Eric Ragan

NRI: Collaborative Visual Assistant for Robot Operations in Unstructured or Confined Environments

Sponsor: Department of Energy
PI: Robin Murphy

SDI-CSCS: Collaborative Research: S2OS: Enabling Infrastructure-Wide Programmable Security with SDI

Sponsor: National Science Foundation
PI: Guofei Gu

NSF Engineering Research Center for Precise Advanced Technologies and Health Systems - \$19.75 million

Enrollment (2017)

Master's
199

Ph.D.
156

Undergraduate (excluding freshmen)
1,047

New Faculty (2017)



Theodora Chaspari
Assistant Professor



Juan Garay
Professor



Bobak Mortazavi
Assistant Professor



Atlas Wang
Assistant Professor

Overview

11 Faculty Fellows 44 Tenured/Tenure-track Faculty 10 ACM Distinguished Scientists 27 U.S. Government Awards, including NSF CAREER

Diversity

| | | |
|------------|-------------------------------|---------------------|
| 14% Female | Undergraduate 22% Hispanic | 2% African American |
| 17% Female | Graduate 6% Hispanic | 2% African American |



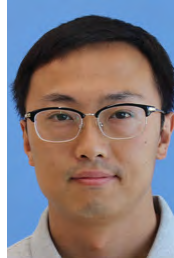
Department of Computing Sciences
Texas A&M University – Corpus Christi
<http://csci.tamucc.edu>

New faculty hires for Fall 2017:



Alaa Sheta

- Evolutionary Computing
- Image Processing
- Software Reliability & Cost Estimation
- Wireless Sensor Network
- Smart Grid



Ning Zhang

- Software defined networking
- 5G
- Security

Teaching Faculty

- Saman DeSilva
- Minhua Huang
- Mamta Yadav

Research Highlights:

- J. Xie received \$224K from NSF to develop a networked airborne computing platform to enable advanced research in UAS exploration.
- M. Rahnemoonfar & S. King awarded \$120K by Amazon to develop methods of product counting.
- \$540K NSF MRI funding awarded (PI A. Mahdy) for Integrated Gas Monitoring and Source Identification Unmanned Aircraft System for Exploration, Compliance and Assessment.
- HPC cluster installation completed with support of \$400K NSF MRI grant (PI Li).
- 2017 journal articles in *IEEE Control Systems Letters*, *IEEE Signal Processing Letters*, *Intelligent & Fuzzy Systems*, *Sensors*, and *Wetlands Ecology & Management*.
- Papers in CVPR '17, ICWIN '17, IGARSS 2017, IVPC '17, and SAM '17.

Other Highlights:

- NSF awarded \$3.8M for Computing Alliance of Hispanic-Serving Institutions (\$188K for TAMUCC, PI Mahdy) .
- Alliance of 4 TAMU system institutions (TxARM) awarded \$2.8M by NSF to study a model to increase underrepresented minorities in the professoriate (\$520K for TAMUCC, PI King).
- Ongoing grants from NSF S-STEM: \$609K (PI Kar), \$598K (PI King) to support undergraduates.
- Google igniteCS grant for summer camp for high schoolers to learn about computer science.
- Designated as a National Center for Excellence in Cyber Defense Education by DHS and NSA.
- Held three one-week summer coding camps for over 90 middle school girls.
- High-school and middle school camps for programming UAS.
- Cyber Defense team placed 6th in Gold bracket and 8th overall in 2017 National Cyber League.
- Cyber Defense team placed 2nd Fall 2016 CAHSI Hackathon.
- M. Rahnemoonfar founded a Corpus Christi chapter of WiMLDS.

Student Numbers and Growth:

- Undergraduate enrollment up every year since 2011 (2017 is 120% over 2011).
- Enrollment in new doctoral program at 14.
- Diverse undergraduate population with 50% URM (43% are Hispanic) and 19% are female.

Organizational News:

- New fast track 5 year BS/MS degree starting Fall 2017.
- Created new first year learning communities for computer science majors and redesigned intro sequence labs.
- 27 % of Tenure Track faculty are female, as well as 28% of all full-time faculty.

Department of Computer Science
Texas State University
<http://www.cs.txstate.edu>

New faculty hires:



Dr. Jelena Tesic
Machine learning, visual
recognition, deep neural
networks, image and
video data management,
multimedia analytics



Dr. Yan Yan
Computer vision,
machine learning,
multimedia

Faculty Highlights:

- PECASE award received by Professor Oleg Komogortsev
- Professor Moonis Ali served as General Chair of IEA/AIE, Professor Byron Gao as Local Organization Co-Chair of ACM SIGMOD/PODS 2018, 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.

Research Highlights:

- Google Virtual Reality Research award received by Professor Oleg Komogortsev
- Huawei Technologies Research award by Professor Ziliang Zong
- US Ignite and City of Austin's Giga TECHs Award received by Professors Dan Tamir and Metsis
- NSF REU Site in Software Systems and Analysis grant received by Professors Guowei Yang and Anne Ngu
- Several research grants received from NSF, DHS, and NIST

Student Highlights:

- Two NSF GRFP awards received by Kristi Belcher and Jared Coplin
- Conference of Southern Graduate School's Outstanding Master's Thesis Award in Math, Physical Sciences and Engineering received by Sepideh Maleki
- CRA 2016 Outstanding Undergraduate Researcher Award received by Jared Coplin
- Student enrollment dramatically increased to 1,189 (Fall 2016)

Organizational News:

- New PhD in Computer Science program starts in Fall 2017. This innovative program integrates computer science research with business training.
- Several new faculty positions committed by the university to support the PhD program

Department of Computer Science

Texas Tech University

<http://www.depts.ttu.edu/cs/>

Recent Faculty Hire



Fang Jin, Ph.D. CS
Virginia Tech
Assistant professor in
Big Data Analytics, Machine learning,
Data Mining and Graph Mining



Tommy Dang, Ph.D. CS
U of Illinois at Chicago
Assistant professor in
Data Visualization, Human and Computer
Interaction, Computer Animation

Research Highlights:

- Public release of Dr. Namin's NSF-sponsored research on "Sonifying Cybersecurity Cues for Visually Impaired Web Users"¹
- Dr. Serwadda's work on brainwave authentication, "EEG Identification Can Steal Your Most Closely Held Secrets", is featured in *IEEE Spectrum*², along with recent interviews with *Digital Trend*³ and *Inverse*⁴. Dr. Serwadda had funding from DARPA and NSF for his prior work in Biometrics.



Other Highlights:

- Best 35 online computer science degrees for 2017 by College Choice⁵ whose ranking scores are based on academic reputation, credit hour cost, retention rate and average early salary of graduates.
- Dr. Mengel is 2017-18 Outreach Chair (Elected) of Society of Women Engineers.
- Our graduates took positions at Google, General Motors and Iowa State University.

Student Numbers and Growth:

- Sent 68 undergraduate students to 16 countries to study/intern as part of the college mandatory of 6-8 weeks of International experience.
- Isaac Griswold-Steiner, a senior student supervised by Dr. Serwadda, is a lead author of a paper to be presented at 2017 IJCB, top biometrics international conference.

Organizational News:

- EWOCs (Extraordinary Women of Computer Science) received \$3000 from Google thru the National Center for Women & Information Technology to establish ACM-W chapter.
- The college and the university committed to \$100,000 for a data visualization Lab.
- The dean commits 60 faculty positions, which will support his vision to use Big Data, Visualization & Nano technology in energy, water, transportation and medical research.
- \$3.2 M was pledged for the international engineering program, part of which will be an endowed graduate fund for graduate fellows, ten of which will be given this year.

1 URL: <https://www.youtube.com/watch?v=aFOkvECg6xY&t=46s>

2 <https://spectrum.ieee.org/the-human-os/biomedical/devices/eeg-identification-can-steal-your-most-private-secrets>

3 <https://www.digitaltrends.com/cool-tech/cybersecurity-brain-wave-passcodes/>

4 <https://www.inverse.com/article/21905-brain-wave-password-hacking-cybersecurity>

5 <https://www.collegechoice.net/rankings/best-online-bachelors-in-computer-science/>



THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE

Computer Science

Research Faculty

Kobus Barnard
Christian Collberg
Saumya Debray
Alon Efrat
Chris Gniady
John Hartman
Katherine Isaacs
John Kececioglu
Stephen Kobourov
Joshua Levine
David Lowenthal
Todd Proebsting
Carlos Scheidegger
Richard Snodgrass
Michelle Strout
Mihai Surdeanu
Beichuan Zhang

By the Numbers

Faculty: 27
Research Funding: \$3.2 million
Undergraduate Students: 1500
Graduate Students: 60

Connect

520-621-4632
1040 E 4th Street
Gould-Simpson Room 917
Tucson, AZ 85721

@UOFACOMPSCI



NSF TRIPODS Grant Awarded

The Departments of Computer Science and Mathematics and the GIDP in Statistics were awarded \$1.4 million for 1 of 12 NSF Transdisciplinary Research in the Principles of Data Science grants. tripods.arizona.edu

Richard Snodgrass Named Galileo Circle Fellow

Professor Richard Snodgrass was recognized as the department's first Galileo Circle Fellow, one of the highest honors bestowed upon faculty in the College of Science.

Data 7 Research Institute Created

The University of Arizona recently created the Data 7 Research Institute with Professors Stephen Kobourov and Mihai Surdeanu as two of the lead researchers. The goal of Data7 is to foster the next generation of data-driven research by encouraging university-wide interdisciplinary collaboration, gaining external visibility, developing industry alliances, and increasing funding for UA research. data7.arizona.edu

Catapult Award for Information Technology

Professors Saumya Debray and Richard Snodgrass were presented with the first Catapult Award for Information Technology from Tech Launch Arizona, the University's tech transfer arm.

SaddleBrooke Science Cafe

Faculty from the department hosted a series of lectures at the SaddleBrooke community entitled, "Take a Byte Out of Big Data." The lectures may be found on [YouTube](https://www.youtube.com).





FAST FACTS

Faculty size: 18

Career awardees: 4

Endowed chairs: 4

Undergraduate students (excluding freshman): 554

PHD students: 53

New research awards for 2016-2017: \$2.7M

OVERVIEW & UPDATE

This is an exciting time in the Computer Science and Computer Engineering Department at the University of Arkansas in Fayetteville. The University of Arkansas in Fayetteville is the flagship campus in the University of Arkansas system. It has the highest Carnegie classification of doctoral-granting, research university with very high levels of research activity. The Computer Science and Computer Engineering (CSCE) Department in the University of Arkansas in Fayetteville is housed in the state-of-the-art J.B. Hunt Transport Services Inc. Center for Academic Excellence with modern faculty offices, laboratories suitable for hardware and software research and education, and classrooms for teaching. CSCE has comprehensive education programs in both computer science and computer engineering. It offers seven degree programs: B.S. in computer science, B.S. in computer engineering, B.A. in computer science, M.S. in computer science, M.S. in computer engineering, PhD in engineering (Computer Science), and PhD in Engineering (Computer Engineering). The degree programs of B.S. in computer science and B.S. in Computer Engineering are accredited by the Engineering Accreditation Commission of ABET.

The CSCE did very well in research, education, and services in the past year. This is resulted from an excellent effort and dedication of faculty, staff, and students. CSCE now has 18 excellent faculty members. Four of them are endowed chair professors and four of them are NSF CAREER Awardees. Last year, CSCE hired two excellent tenure-track assistant professors Dr. Yarui Peng who graduated from the Georgia Institute of Technology and Dr. Alexander Nelson who graduated from the University of Maryland in Baltimore County. They cover a wide range of computer science and computer engineering domains, such as dig data and analytics, cyber security, artificial Intelligence, machine learning, service computing, recommendation systems, theoretical computer science, algorithms, Information retrieval, software engineering, computer vision, wearable computing, embedded systems, reconfigurable computing, digital integrated circuit design and analysis, extreme environment electronics, hardware security, and computer aided design.

The Department is also active in research and the total amount of new research grants is \$2.7M for 2016-2017 fiscal year. An average amount of new research award per tenure or tenure-track faculty members is more than \$168K for the past fiscal year. CSCE PhD programs are growing fast and our PhD enrollment is 53 in 2016-2017 fiscal year compared with 39 in 2014-2015, representing an increase of 36% for the past two years. The PhD enrollment growth is supported by a significant increase in new research awards both internally and externally for the past two years.

CSCE has shown a success in maintaining and developing outstanding student-centered education programs with outstanding for the past year. The CSCE enrollment in our undergraduate programs continues to grow and our current undergraduate enrollment excluding students in Freshman Engineering is 569. The quality of instruction continues to be excellent and the average instructor rating in the Department from the student evaluation of teaching was above 4.2 out of 5, indicating very high student satisfaction.

Computer Science at UC Berkeley, 2017

Recent Hires:

- Moritz Hardt, Ph.D., Princeton, 2011, Machine Learning
- Sergey Levine, Ph.D. Stanford, 2014, Machine Learning for Decision Making and Control
- Jonathan Ragan-Kelley, Ph.D., MIT, 2014, High Efficiency Computer Graphics



Soda Hall

Research Highlights:

- Five Berkeley EECS Faculty Among Investigators Awarded \$14.5M by CZ Biohub: M. Maharbiz, Y. Song, Waller, R. Muller and N. Yosef
- 2017 NAE Memberships in EECS, Tsu-Jae King Liu and Kathy Yelick
- 2017 American Academy of Arts and Sciences membership, Kathy Yelick
- Anca Dragan, one of 35 Innovators under 35 for MIT's Tech Review, 2017
- 2017 Internet Defense Prize, Vern Paxson and David Wagner and 2 of their students
- Ruzena Bajcsy, NAE Founders Award and John Scott Award
- ACM/AAAI Allen Newell Award, Jitendra Malik
- ACM Prize in Computing , Alexei Efros
- 2017 Sloan Research Fellowship, Ren Ng
- Sergey Levine, one of 35 Innovators under 35 for MIT's Tech Review, 2016
- Pieter Abbeel and Jan Rabaey, EECS faculty named in top 5 of list of 50 top tech pioneers for 2017 by Belgian *De Tijd*

Organizational News

- Berkeley establishes a [Division of Data Sciences](#) which extends beyond EECS but whose Interim Dean is Professor David Culler and many of whose faculty come from EECS.
- Some new courses have already been developed with connector courses in a broad array of majors across campus, and a data science major is planned. The introductory Data Science 8, offered jointly with Statistics, has grown to over 1000 students in Fall 2017.

Student Numbers and Growth

- Our incoming CS Ph.D. class grew to 64 from 2016's 39, with 27 being in AI/Machine Learning.
- Currently, 1388 EECS undergraduates are in the College of Engineering, with 257 women and 95 members of underrepresented minority groups.
- 1400 more students are currently enrolled in the College of Letters and Science CS major in 2017; and our introductory course, CS 61A, has its largest enrollment ever, with more than 1700 students in Fall 2017. Starting Spring 2018, CS61A will be made available online for course credit to all other UC campuses, to be followed by CS61B.



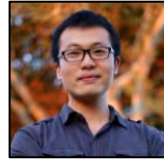
New faculty hires:



Yufei Ding
Program Optimization



Trinabh Gupta
Systems



Yu-Xiang Wang
Machine Learning



Richert Wang
Teaching Professor

Research Highlights:

- Best Paper Award at EUROCRYPT 2017 by Binyi Chen and Stefano Tessaro
- Most Influential Paper at ASPLOS 2017 received by Tim Sherwood
- Best Paper Award at IEEE Cluster 2017 by Stratos Dimopoulos, Chandra Krintz, and Rich Wolski
- Distinguished Paper Award at NDSS 2017 by Ruoyu Wang, Yan Shoshitaishvili, Antonio Bianchi, Aravind Machiry, John Grose, Paul Grose, Christopher Kruegel, and Giovanni Vigna
- Most Influential Paper Award at IUI 2017 by John O'Donovan
- Best Paper Honorable Mention at CSCW 2017 by Morgan Vigil-Hayes and Elizabeth Belding
- Team Shellphish nets \$750,000 win at DARPA Cyber Grand Challenge

Faculty Awards:

- Divy Agrawal named 2016 Fellow by the American Association for the Advancement of Science
- Rich Wolski named 2017 Fellow by the Institute of Electrical and Electronics Engineers
- 2016 ACM SIGARCH Maurice Wilkes Award received by Tim Sherwood
- Tefvik Bultan named 2016 Distinguished Scientist by the Association for Computing Machinery
- NSF CAREER Award received by Rachel Lin
- Sloan Research Fellowship awarded to Stefano Tessaro
- IBM Faculty Award awarded to William Wang

Student and Alumni highlights:

- PhD Candidate Yan Shoshitaishvili has accepted a faculty position at Arizona State University
- PhD Candidate Yanick Fratantonio has accepted a EURECOM faculty appointment
- Recent CS graduate Gang Wang joins Virginia Tech as Assistant Professor
- PhD candidate Yan Shoshitaishvili quoted in The New York Times
- CS graduates Christo Wilson and Xia Zhou won NSF CAREER Awards
- CS alum Huan Sun joined CS faculty at Ohio State; received the 2016 SIGKDD Dissertation Runner-Up Award

Organizational news:

- Matthew Turk named department chair of UCSB Department of Computer Science
- 535 CS undergraduates and 160 graduate students, department taught CS courses to 1,425 non-majors



A Big Department, Growing Bigger

[Computer Science \(CS\) at UCF](#) is home to 2102 CS undergraduate majors and 840 IT majors; last year the department awarded 371 BS degrees. The MS degrees in CS, Data Analytics, and Digital Forensics have 250 students enrolled. There are 167 CS PhD students. Among its 38 tenured/tenure-track faculty, CS has [8 assistant professors](#), including 4 IEEE fellows, 2 AAAS fellows, one ACM fellow (Narsingh Deo), and 5 NSF CAREER award winners. The department employs two NAE members (Elaine Weyuker and Jim Baker). The department also has 9 instructors and lecturers. In 2016-17 the department hired 2 new faculty in UCF's cluster on cyber security and privacy ([Xinwen Fu](#) and [Aziz Mohaisen](#)) and a third in the cluster on genomics and bioinformatics ([Wei Zhang](#)).

Research Highlights

UCF is ranked in the [top 50 domains for CS research by Semantic Scholar](#). CS faculty members publish in top conferences and journals, including 13 publications in the past year in *IEEE Transactions* journals and 8 in *ACM Transactions* journals. Papers from 2006 by professors Mubarak Shah and Gary T. Leavens have been noted by Google Scholar as "Classic papers that have stood the test of time": taking [4th place in the area of multimedia](#) and [2nd place in the area of software systems](#), respectively. Kenneth Stanley's paper introducing NEAT won the [2017 ISAL Award for Outstanding Paper of the Decade 2002-2012](#).

Kenneth Stanley's AI startup, [Geometric Intelligence, was acquired by Uber](#). [TeachLivE](#), the result of VR research by Charles Hughes and his colleagues, is used worldwide by over 90 universities to prepare K-12 teachers; it has been commercialized by [Mursion Inc.](#) for customer interaction training. Kien Hua's chaining technique started peer-to-peer data sharing and streaming technology (used, e.g., in BitTorrent and Skype).

The Center for Research in Computer Vision ([crcv.ucf.edu](#)) has 4 faculty members. Among their many publications are [10 papers accepted in ICCV 2017](#) and [6 papers in CVPR 2017](#). The [Computational Imaging Lab](#) is leading the NASA GOLD Mission's Science Data Center, part of a \$63M project performing image analysis for an ultraviolet imaging satellite in geostationary orbit. In the 2016-17 academic year the department had \$4.6M in external research expenditures.

Teaching and Student Highlights

UCF is recognized (by NSA and DHS) as a [Center of Academic Excellence](#) (CAE) for Cyber Defense Education and as a CAE in Cyber Defense Research. UCF student teams won the national Collegiate Cyber Defense Championship (CCDC) in 2014, 2015, and 2016. The UCF CCDC team [won the national 2016 Collegiate Penetration Testing Competition](#).

The UCF Programming team, which has won the SE regional contest each year from 2012-16, finished [13th in the world and first among US teams in the ACM International Collegiate Programming Contest](#).

The University of Chicago has embarked on an ambitious initiative to expand Computing and Data Science across the entire campus. This initiative involves major faculty hiring, expansion of research areas, and an increase in both graduate and undergraduate student populations. Construction is underway for a new home for the Department of Computer Science, the Computation Institute, and related efforts in Data Science and Media Arts and Design.

New Faculty Hires:



Michael Franklin
Liew Family Chair of Computer Science
Database Systems, Big Data



Robert Grossman
Frederick H. Rawson Professor
Professor of Medicine and CS
Data Science



Blase Ur
Neubauer Family Assistant Professor
Security, Privacy, HCI
(Ph.D., CMU 2016)



Ben Zhao
Neubauer Professor of CS
Networking, HCI, Data Mining, Security & Privacy



Heather Zheng
Neubauer Professor of CS
Networking, Systems, Mobile Data



Junchen Jiang
Assistant Professor (starting July 2018)
Networking and Big Data
(Ph.D., CMU 2017)



Aaron Potechin
Assistant Professor (starting July 2018)
Complexity Theory
(Ph.D., MIT 2015)

Research Highlights

- NSF CAREER Award received by Prof. Ravi Chugh
- DARPA Young Investigator Award received by Prof. Risi Kondor
- ACM SIGACT Distinguished Service Prize, and the Edsger Dijkstra Prize in Distributed Computing received by Prof. Laci Babai
- Best Paper Awards at CHI, ICER, OSDI, and STOC conferences
- Genomics Data Commons public launch with Vice President Biden
- NSF Research Traineeship (NRT) Award for Climate and Data Science

Other Highlights

- Prof. Robert Grossman named ACM Fellow
- Prof. Andrew Chien named Editor in Chief of *Communications of the ACM*
- Awarded 78 Bachelors and 87 Masters degrees in 2017
- Inaugural class of Masters of Computational Analysis and Public Policy graduates
- Initiated dual MBA/Masters of CS degree program with Booth School
- Hosted 1st NSF Translational Data Science Workshop and 1st Midwest Machine Learning Symposium
- Sent 27 students to 2017 Grace Hopper Celebration of Women in Computer Science



WELCOMING 15 NEW FACULTY



Paul Constantine, PhD Stanford

Paul's research interests include uncertainty quantification and dimension reduction for computational science and engineering simulations.



Dan Massey, PhD UCLA

Dan's research focuses on cyber security for traditional systems, emerging cyber physical systems and the Internet of Things.



Sidney D'Mello, PhD Univ. of Memphis

Sidney's research examines the complex interplay between thoughts and feelings while people perform complex real-world tasks.

(Joint with the Institute of Cognitive Science)



Rebecca Morrison, PhD U. of Texas Austin

Rebecca researches sparse structure learning in non-Gaussian graphical models and representations of model inadequacy in reduced systems.



Ellen Do, PhD Georgia Tech

Ellen invents at the intersections of people, design and technology, working on computational tools for design.

(Joint with the ATLAS Institute)



Orit Peleg, PhD ETH Zurich

Orit researches how organisms buffer themselves against environmental fluctuations and adapt over a wide range of time scales.

(Joint with the BioFrontiers Institute)



Bradley Hayes, PhD Yale

Bradley researches the algorithmic foundations of human-robot interaction, developing techniques to turn robots into capable teammates.



Abtin Rahimian, PhD Georgia Tech

Abtin's research interests include scientific computing, multi-scale computational modeling, fast parallel algorithms for physical simulations and cellular biomechanics.



Alexandra Kolla, PhD UC Berkeley

Alexandra's interests lie in theoretical computer science and, more specifically, spectral graph theory and convex optimization.



Chenhao Tan, PhD Cornell

Chenhao's research interests include the social aspects of language and multi-community engagement. He is broadly interested in NLP, AI and computational social science.



Daniel Larremore, PhD CU Boulder

Daniel develops methods for analyzing large-scale network data and uses them to solve applied problems.

(Joint with the BioFrontiers Institute)



Ashutosh Trivedi, PhD Univ. of Warwick

Ashutosh's research focuses on applying mathematical reasoning techniques to design and analyze safe, secure cyber-physical systems with guaranteed performance.



Ryan M. Layer, PhD Univ. of Virginia

Ryan develops algorithms and data structures that facilitate the rapid exploration and integration of large-scale genetic data sets.

(Joint with the BioFrontiers Institute)



Tam Vu, PhD Rutgers

Tam builds systems to improve pediatric health care practices. His team designs and implements novel, practical cyber-physical systems.



Daniel Leithinger

Daniel uses sensing, robotics and software to develop workplaces for data exploration, computer-aided design and remote collaboration.

(Joint with the ATLAS Institute)



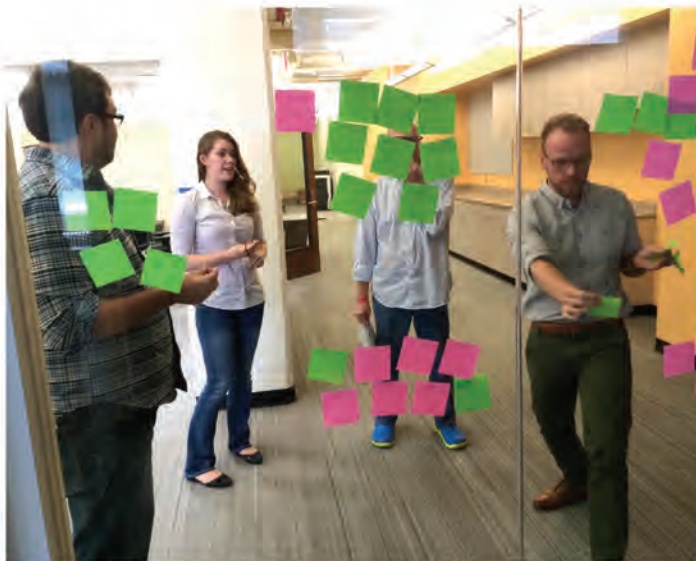
Information Science

UNIVERSITY OF COLORADO BOULDER

In 2015, the University of Colorado Boulder (CU) established the **Department of Information Science** in the new College of Media, Communication and Information. Over the course of two years, the department has hired **12 new faculty**— for a total of 13—to develop undergraduate and doctoral degrees and establish a portfolio of world-class research. The first undergraduate and doctoral classes began in Fall 2016.

At the undergraduate level, the department offers a full 4-year B.S. degree, which blends computing with social science and the humanities for an interdisciplinary education. Students have hands-on experiences with investigating and creating all aspects of **human-data interaction**: They research how people and organizations interact with technology and information. They design apps, algorithms and user interfaces, learning to collect, analyze, and interpret information using qualitative and quantitative techniques.

The faculty focuses on the social study of data, information, media and computing. Faculty research covers topics including: human-computer interaction, information visualization, machine learning, social media, social informatics, computational social science, crisis informatics, personal information management, IT education, diversity in IT, law in socio-technical systems, philanthropic informatics, youth and IT, information in everyday life, and information history.



In the department's short history, the faculty have received nearly \$2M in new external funding; are teaching to approximately 400 unique students each semester; are advising 20 PhD students in our own program and other CU programs; and have launched active research programs.

As we build our department from the ground up, we strive to articulate and reify our core values of inclusivity and disciplinary excellence across classroom, lab and workplace.



William Aspray

Professor, Associate Chair of Graduate Studies
information policy, history, behavior, and work



Lecia Barker

Associate Professor, Assoc Chair of Undergrad Studies
information technology education, women in computing



Jed Brubaker

Founding Assistant Professor
identity & data: social media, post-mortem data, marginalized users



Laura Devendorf

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



Casey Fiesler

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



Brian Keegan

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



Leysia Palen

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



Michael J. Paul

Founding Assistant Professor
machine learning, natural language processing, social media analysis, health



Rick Robinson

Founding Professor of the Practice
design, ethnography, collaboration, innovation



Ricarose Roque

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



Danielle Szafir

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



Amy Volda

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



Steve Volda

Founding Assistant Professor
information overload, information sharing, ubiquitous computing

Faculty can be reached at firstname.lastname@colorado.edu
For department inquiries, write to leysia.palen@colorado.edu

Computer Science & Engineering 371 Fairfield Way, Unit 4155 Storrs, CT 06269 860-486-3719 cse.uconn.edu

CSE Faculty

- 27 Tenure Track Faculty
- 4 Teaching Faculty
- 3 Assistant Research Professors

Research Highlights

- 12 NSF Career Awardees
- \$22.6 million in active research projects
- 6 research centers pairing academia with industry and government to solve real-world problems

2017 Graduates

- 137 B.S./B.S.E.
- 26 M.S.
- 12 Ph.D.

Academic Programs

- B.S. in Computer Science
- B.S.E. in Computer Science & Engineering
- B.S.E. in Computer Engineering
- M.S. and Ph.D. programs

2017 Enrollment

- 787 Undergraduate
- 63 M.S.
- 91 Ph.D.

New Strategic Direction: CSE Establishes Connecticut Cybersecurity Center

The Connecticut Cybersecurity Center (C3) offers a new strategic direction for the department. C3 unites the **Voting Technology Research (VoTeR) Center**, **Synchrony Financial Center of Excellence in Cybersecurity**, **Center for Hardware Assurance Security and Engineering (CHASE)** and **Comcast Center of Excellence for Security Innovation (CSI)** under one roof to provide expertise in network and computer security.

CSE Welcomes Faculty Researchers

Amir Herzberg

Professor and Comcast Chair for Security Innovation

- Security and Privacy for Internet and beyond
- Applied Cryptography
- Secure Usability and HCI



Walter O. Krawec

Assistant Professor

- Quantum Cryptography and Communication
- Computer Security
- Information Theory



Fei Miao

Assistant Professor

- Cyber-Physical Systems
- Autonomous Transportation Systems
- Optimization and Control



Faculty Win Prestigious Awards



NIH Mid-Career

Independent Scientist Award

Title: Classifying Addictions Using Machine Learning of Multidimensional Data



2017 NSF CAREER Award

Title: Algorithmic Challenges and Opportunities in Spatial Data Analysis



2016 NSF CAREER Award

Title: Algorithms for Domain-Level Analysis of Gene Family Evolution

Computer and Information Sciences Department
University of Delaware
2016-2017 Year in Review

Retirements

Dave Saunders

New Hires

Rui Zhang

Debra Yarrington

Current Faculty Status

Tenure Track Faculty- 2

Continuing Track (Teaching)- 3

Academics

New online Graduate Certificate in Applied Bioinformatics launched in Summer, 2017

Faculty Awards

- Sunita Chandrasekaran- Won a 2016 IEEE-CS TCHPC Award for Excellence for Early Career Researchers in High Performance Computing.
- James Clause- ISSTA 2017 Impact Paper Award for the International Symposium on Software Testing and Analysis. Recognizes papers published within the last 10 years that have had significant impact on the field.
- Keith Decker- Named JPMorgan Chase Faculty Scholar
- Lena Mashayekhy
 - February, 2017: Best Application Paper Honorable Mention in IIE Transactions on Scheduling & Logistics (2nd place among all journal papers published in issues 47:7 through 48:6).
 - December, 2016: Received the 2016 IEEE TCSC Outstanding PhD Dissertation Award
- Lori Pollock
 - Named Co-Chair of CRA'S Committee on Education (CRA-E)
 - Appointment as Alumni Distinguished Professor in 2016
- Lori Pollock and Vijay Shanker- Most Influential Paper Award from the 6th International Conference on Aspect-Oriented Software Development
- Vijay Shanker- Two, F1000 Recommended Papers for 2017
- Hagit Shatkay - Elected to the board of directors of the International Society for Computational Biology (ISCB)
 - Appointed member of the Computer Science Evaluation Panel of the National Science and Engineering Council of Canada (NSERC)
- Michela Taufer- Named JPMorgan Chase Faculty Scholar
- Cathy Wu
 - Named "Highly Cited Researcher" (top 1%) by Thomson Reuters (Clarivate Analytics), 2016, 2017
 - National Advisory General Medical Sciences Council, National Institutes of Health, 2017 (appointed by NIH Director)
 - Senior Member, The Institute of Electrical and Electronics Engineers (IEEE), 2017
- Rui Zhang- NSF Career Award

Faculty Grants Awarded January, 2017-September 2017

14 grants totaling \$4,233,052 involving 10 different faculty. Agencies include: NSF; NIH; Oak Ridge National Laboratory; US Army Research Office; Lawrence Livermore National Lab; Friends of GTM Reserve; JPMorgan Chase; Scalable Networking Technologies; and UDRF.

COMPUTER & INFORMATION SCIENCE & ENGINEERING

University of Florida
cise.ufl.edu

New Faculty Hires:



Christina Boucher, Ph.D.

Assistant Professor
Research Focus:
Bioinformatics



Jaime Ruiz, Ph.D.

Assistant Professor
Research Focus:
Human-Computer Interaction

Research Highlights

- We have 2 ACM Fellows, 3 AAAS Fellows, 6 IEEE Fellows, 4 ACM Distinguished Members, 15 NSF CAREER Awardees, 1 Sloan Research Fellow, and 1 National Academy of Inventors fellow.
- More than 50 percent increase in research expenditures over the last 5 years

Other Highlights

- Recent Startups: [Shadow Health](#), [CryptoDrop](#), [Virtual Traffic Stop](#), [Tera Insights](#), Ultrahinet

Student Numbers and Growth

- 22 percent of black women enrolled in computer science Ph.D. programs nationwide are at UF CISE. ([Taulbee Survey](#))
- Top 20 among computer science Ph.D. programs for most women enrolled ([ASEE](#))
- Top 10 among computer science Ph.D. programs for most students enrolled ([ASEE](#))
- Total Enrollment: 2,430
 - Bachelor's - 1,714
 - Master's - 577
 - Ph.D. - 139

Organizational News

- Top 10 for number of faculty
- Ranks No. 1 among computer science departments nationwide in the number of women faculty. ([ASEE](#))
- University of Florida ranks Top 10 among public universities

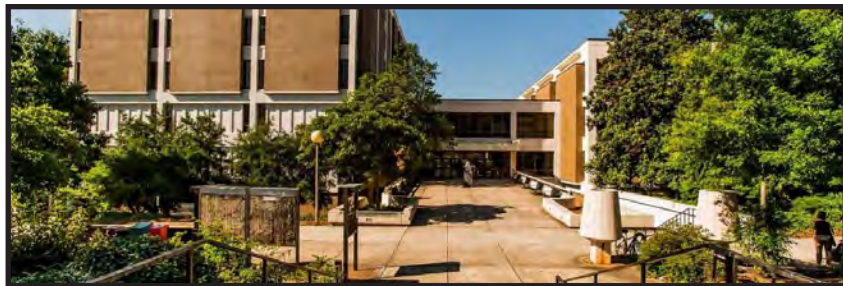


Department of Computer Science

Franklin College of Arts and Sciences

UNIVERSITY OF GEORGIA

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



DEPARTMENT OVERVIEW

The Department of Computer Science at the University of Georgia was established in 1984 and has grown to include 27 faculty members, more than 175 enrolled graduate students and over 1065 undergraduate majors, and to serve thousands of non-major undergraduates. It offers the B.S., M.S. with thesis, 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 the past three years, the department has hired 4 new tenure-track faculty members and will hire two more in this academic year. Recently recruited faculty include Dr. Yi Hong with expertise in medical imaging and computer vision, Dr. Jaewoo Lee in data mining and privacy, Dr. Kyu Lee in mobile and system security, and Dr. Shannon Quinn with expertise in biomedical imaging and scalable computing. In addition, the department has hired 5 new lecturers to enhance its teaching mission.

RESEARCH HIGHLIGHTS

- The department established the Institute for Cybersecurity and Privacy (ICSP) under the University-wide initiative of Georgia Informatics Institutes in 2017. It is being directed by Prof. Kang Li with Profs. Roberto Perdisci, Kyu Lee, and Jaewoo Lee as founding members. ICSP has been designated as an NSA/DHS National Center of Academic Excellence in Cyber Defense Research (CAE-R).
- The annual research expenditure averaged over the last three years is \$1,750,000 with grants being awarded by NSF, NIH, DARPA, DHS, ONR, and the industry.
- Faculty in the department have secured more than \$1 million in new funding over the next few years with a significant component going toward cybersecurity research.
- Prof. Tianming Liu was recently recognized as a Distinguished Research Scientist by UGA. Two faculty, Profs. Tianming Liu and Prashant Doshi have been awarded the Creative Research Medal by UGA. Prof. Roberto Perdisci was awarded the Michael F. Adams Early Career Scholar Award.

DEGREE PROGRAM HIGHLIGHTS

- New Double Dawgs (dual degree) BS-MS program established. Students entering the BS program can continue onwards to also obtain an MS in an expected duration of 5 years.
- The department's BS program is accredited by ABET.
- 25 doctoral degrees and 49 MS 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 38% in the last three years to include 179 students.
- Undergraduate enrollment has grown tremendously in the last three years by 81% to 1,065 majors.

**University of Hawaii at Manoa
Information and Computer Sciences Department**

Faculty Changes

- Professor Scott Robertson became the new Department Chair.
- Dr. Nancy Reed retired.
- Dr. Rich Gazan was promoted to Full Professor.
- Dr. Susanne Still was promoted to Full Professor.

Research Highlights:

- Professor Henri Casanova received a \$500,000 NSF award for WRENCH: A Simulation Workbench for Scientific Workflow for Users, Developers, and Researchers.
- Faculty Specialist Gerald Lau is co-PI on a \$1million NSF grant: CSP4Hawaii: Deployment of Computer Science Principles Courses within Secondary Schools in Hawaii.
- Professors Lipyeow Lim and Henri Casanova co-organized the 19th IEEE Cluster Conference

Student Highlights

- ICS undergrads won First-place, Second place, and Best College Team awards in the 2017 Annual Code Challenge.

Organizational News

- The Laboratory for Advanced Visualization and Applications (LAVA) and the Academy for Creative Media (ACM) built the highest resolution hybrid-media environment in the world. The installation is dubbed Cyber-CANOE, for Cyber-enabled Collaboration Analysis Navigation and Observation Environment.

UNIVERSITY of HOUSTON

DEPARTMENT OF COMPUTER SCIENCE

Fall 2017

Computing Research Association – Department Highlights

Academic & Student Highlights

Estimated **16% undergraduate** and **20% graduate enrollment increase** since fall 2016.

New **Accelerated BS/MS program** offered for early exposure to advanced topics and research in computing.

PhD student **Xingliang Zou** received the Outstanding Paper Award at IEEE International Symposium on Real-Time Computing. [Read More.](#)

Saurabh Sogi, a first-year computer science major, led a competition team that qualified for the finals of the NASA Space Robotics Challenge. [Read More.](#)

New Faculty (2017-2018)



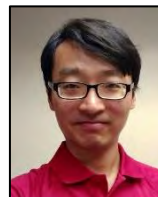
M. Amin Alipour, Assistant Professor
PhD, Oregon State University
Amin's primary research interest is in software testing and analysis, especially in designing techniques that improve the quality of large, complex software systems.



Giulia Toti, Instructional Assistant Professor
PhD, University of Houston
As a Postdoctoral Researcher at King's College London, Giulia focused on the development and application of machine learning techniques to the medical field.



Aron Laszka, Assistant Professor
PhD, Budapest University of Technology and Economics
Prior to joining UH, Aron was a Research Assistant Professor at Vanderbilt University. His research interests revolve around security, cyber-physical systems, game theory, and the economics of security.



Panruo Wu, Assistant Professor
PhD, University of California, Riverside
Panruo's research interests include high performance computing, numerical algorithms and software, parallel/distributed computing, and big data analytics.

Faculty & Staff Highlights

GuidaBot, LLC, a joint venture between **Nikolaos Tsekos**, associate professor of computer science, and Fannin Innovation Studio, received a \$225,000 NSF grant to develop and commercialize a robotic manipulator designed to work within the powerful magnetic field of an MRI machine. [Read More.](#)

Edgar Gabriel, associate professor of computer science, contributed to the release of Open MPI 2.0.0, a software that allows the different components within a high performance computer to communicate with each other. [Read More.](#)

Instructional associate professor of computer science, **Nouhad Rizk**, received the UH Teaching Excellence Award - one of the university's highest honors. [Read More.](#)

Zhigang Deng, professor of computer science, and colleagues received the Best Paper Award at the International Conference on Computer Animation and Social Agents. [Read More.](#)

Graduate Admissions Advisor, **Elizabeth (Liz) Faig**, received the UH President's Excellence Award. The award recognizes staff for meritorious service, dedication and contribution to the University beyond the normal job requirements and expectations.

Department of Computer Science University of Idaho

<http://www.uidaho.edu/engr/departments/cs>

New Faculty Hires



Min Xian
Assistant Professor
Idaho Falls
Biomedical Data Analysis



Predrag Tosic
Assistant Professor
Coeur d'Alene
Artificial Intelligence



John Shovic
Associate Clinical Faculty
Coeur d'Alene
Robotics/Embedded Systems



Julie Beeston
Assistant Clinical Faculty
Coeur d'Alene
Software Engineering

Research Highlights

- Clint Jeffery wants to make Computer Science a little easier and more fun by virtue of a serious game called CVE (Collaborative Virtual Education)
- The Idaho State Board of Education established the Center for Secure and Dependable Systems (CSDS) at the University of Idaho in response to the overwhelming need for computer-related security education and research.
- A new Robotics and Embedded Systems Laboratory has been established in Coeur d'Alene

Student Numbers and Growth

- Three new faculty have been hired and installed in Coeur d'Alene, Idaho bringing the BS, MSCS and PhD programs to Coeur d'Alene and the north Idaho area.
- The Computer Science department is part of the College of Engineering which enrolled 1837 students in the fall of 2016. That is about an 11% increase over the past 10 years, and enrolment rates are expected to accelerate.

Organizational News

- The Computer Science Colloquium is open to the public and usually held Mondays at 3:30 p.m. in Janssen Engineering Building (JEB), room 328. The event brings in speakers from research, industry and government to address advances in the state of the art, contemporary best practices and societal impacts on computing and vice-versa.

Computer Science, University of Illinois at Chicago

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

Faculty new hires and growth:

- Gonzalo Bello (PhD NCSU), Clinical Assistant Prof. (teaching), Data Science
- Tasos Sidiropoulos (PhD MIT), Assistant Prof., Theory
- Elena Zheleva (PhD U Maryland College Park), Assistant Prof., Data Science
- Xiorui Sun (PhD Columbia), Assistant Prof., Theory, Joining 2018 (MSR post-doc)
- Overall 5-year growth:
 - 2012: 27 total faculty, 23 tenure system
 - 2017: 41 total faculty, 33 tenure system
- Plan on hiring as many additional strong new faculty members as possible

Research and related highlights:

- Best paper award at CCS: “A Systematic Analysis of the Juniper Dual EC Incident,” first author Steven Checkoway
- CAREER award: Brian Ziebart
- Overall research expenditures over \$10 million for the first time this past fiscal year
- Particularly socially significant new grants
 - Isabel Cruz: Bill and Melinda Gates Foundation Grand Challenge award (success rate roughly 2%) to use data science to predict location of cases of malaria
 - Liz Marai: NIH R01 to use visual computing over medical imaging data to help make personalized treatment decisions for head and neck cancer
 - Dale Reed: UIC member of a cross-institution NSF-funded team that will help implement and measure effects of teaching Computer Science to every Chicago Public Schools high-school student.

Student numbers, demographics:

- PhD program up to 122 students, and our MS program up to 234
- 1063 undergraduate CS majors, up 26% from Fall 2017; almost triple 2012 number
- BRAID School: From 2012 to 2017, increased percentage women undergraduates from 10.4% to 17.9% (and absolute number more than four-fold)
- Underrepresented minorities: 26% of Fall 2017 CS majors

Organizational news:

- Fundraising going well for new Computer Science building scheduled to open Summer of 2021.
- New first-in-nation integrated Arts and Computer Science dual degree graduate program. 3-year program granting both MS in CS and Masters of Fine Arts (MFA).
- New combined BS/MS program allowing strong undergraduates to earn both degrees in five years.
- Planning several CS + X style undergraduate degrees, including data science (with statistics and other programs), biology, and design.

Consistently ranked among the **top 5 computer science** departments in the country, CS @ ILLINOIS has a unique combination of both quality and scale. Not only do we attract the brightest students—fall 2016 admitted students averaged a **33.8 ACT** math score—but each year we **graduate over 350 exceptional students** who go on to become leaders in industry, academia, and public service fields. Our College of Engineering educates more engineering undergraduates than MIT, Stanford, and Caltech combined, and of comparable quality.

Exceptional, internationally recognized faculty

Our **80 faculty** members have made significant contributions to a vast range of areas, including cloud computing and distributed systems, computer vision, data mining, security, software engineering, high-performance computing, and emerging fields like social computing, computational advertising, and bioinformatics. We're proud of our **13 ACM Fellows**, **13 IEEE Fellows**, **8 Sloan Research Fellows**, and **28 NSF CAREER Award** recipients.

Highly educated, creative, & well-prepared graduates

The class of 2016 bachelor's graduates reported an average **starting salary of \$99,319**. Over the years, our alumni have launched entirely new industries, generated billions of dollars in commerce, created tens of thousands of jobs, and revolutionized the way people communicate, shop, conduct business, and are entertained.

Companies that have been founded by CS @ ILLINOIS graduates are **among the biggest names in the high tech arena**, including Malwarebytes, Match.com, Netscape, Optimizely, PayPal, Siebel Systems, YouTube, and Yelp.

CS+X: Unlocking CS's Potential for the World

In the words of Marc Andreessen (BS CS '94), **"software is eating the world."** Today, computing touches nearly everything, and CS training is becoming very necessary for the arts, science, business, medicine, and engineering.

CS @ ILLINOIS is **leading the way** in preparing students to bring CS to bear on a variety of disciplines through a recent expansion of our blended degree offerings.

To supplement our long-standing programs offered with mathematics and statistics, we created **CS+X degrees in anthropology, astronomy, chemistry, and linguistics**, and the first freshman class started in fall 2014.

Now, we are proud to **announce** that we are **accepting applications** for **CS+Crop Sciences** and **CS+Music** for the fall 2018 freshman class. (More: cs.illinois.edu/cs-x)

Increasing Women's Participation in Computing: NCWIT NEXT Award Grand Prize

CS @ ILLINOIS has a long-term commitment to the recruitment and retention of undergraduate women. Thanks to **outreach and recruiting efforts** like Gems Computer Science Camp for Girls, ChicTech, Women in Computer Science Visit Day, and SAIL, as well as efforts to eliminate the effects of implicit bias in admissions, the fall 2016 CS @ ILLINOIS **freshman class in Engineering** was **46% female, a record high**. The National Center for Women & Information Technology (NCWIT) has **recognized our efforts with a \$100,000 Prize**.

CS @ ILLINOIS Facts and Figures

- 12,760 alumni
- 1,790 undergraduate students
- 920 graduate students
- 80 faculty
- \$34.7 million research expenditures in 2016
- Birthplace of Mosaic, the world's first popular web browser and the LLVM compiler infrastructure
- University of Illinois is #1 in NSF funding
- College of Engineering ranked #13 in Academic Rankings of World Universities in Engineering
- CS is ranked #5 in U.S. News & World Report Graduate School Rankings
- University of Illinois is inaugurating the first-ever engineering-based College of Medicine



Faculty statistics:

- 16 new faculty members since June 2016
- 173 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 2017):

- ~ 2,300 undergraduate students
- ~ 620 graduate students
- At right, welcoming the Engineering at Illinois Class of 2021. ECE ILLINOIS students are in purple, about 1/3 of the total incoming class.



Research awards:

- The Association for Computing Machinery (ACM) awarded Assistant Professor Haitham Al-Hassanieh the 2016 Doctoral Dissertation Award
- For his groundbreaking research, Professor Joseph W. Lyding was awarded the Foresight Institute Feynman Prize for experimental work
- Four graduate students won best presentation awards at the 2017 IEEE Applied Power Electronics Conference (APEC)
- Associate Professor Nam Sung Kim was awarded the 2017 ACM SIGARCH and IEEE-CS TCCA ISCA Influential Paper Award
- Professor Romit Roy Choudhury, Assistant Professor Haitham Al-Hassanieh, and graduate student Nirupam Roy won the Best Paper Award at MobiSys 2017 for their development of an inaudible white noise to protect private conversations from recording
- Visiting scholar Nimrod Missael Garcia Hernandez and Associate Professor Viktor Gruev won Best Paper Award in the Sensory Circuits and Systems track and Best Student Paper Award at the IEEE International Symposium on Circuits and Systems (ISCAS)
- Homa Alemzadeh (PhD '16) was awarded the William C. Carter PhD Dissertation Award in Dependability

Other faculty awards:

- Professor Emeritus Nick Holonyak, Jr., was named an Honorary Member of the Optical Society (OSA) and was awarded the coveted Benjamin Franklin Award for Electrical Engineering
- Professor Weng Cho Chew was awarded the 2017 IEEE Electromagnetics Award

Departmental news:

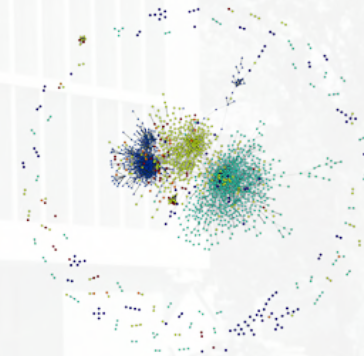
- The American Institute of Architects (AIA) Committee on Architecture for Education (CAE) selected ECE ILLINOIS for the 2017 CAE Education Facility Design Award of Merit
- ECE Building named R&D Magazine's 2016 Laboratory of the Year

UI CS 2016-17 Fact Sheet

In 2016-17, the UI CS Department welcomed **three new faculty**, added a **BSE degree** in Computer Science and Engineering, and was home to nearly **1000 undergraduate** majors and **80 PhD/MCS** students. Our 19 faculty obtained **\$2.6 million in new grants** from federal and industry sources, with annual research **expenditures** growing to nearly **\$2 million**. Five new PhD graduates started their careers at Apple, Cadence Design Systems, Delos Living LLC, NEC Labs America, and Synopsys.

In 2017-18, we will be searching for **three new tenure-track faculty**, while continuing to plan for “floor-to-ceiling” remodel of our **new home** (occupancy expected Fall 2019).

Bicycling and pedestrian simulator research (Kearney)

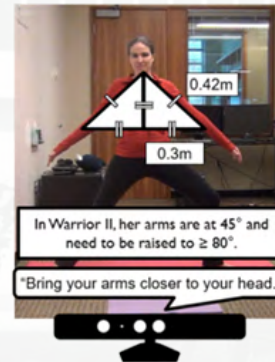


Measuring, characterizing, and detecting facebook like farms (Shafiq)

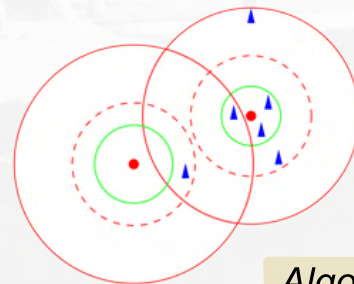


NSF-funded StarExec logic solving service (Stump and Tinelli)

HCI eyes-free yoga accessibility project (Rector)



Performing robots troupe on the road in Iowa, California, Oregon (Szecsei)



Algorithms: Geometric clustering and covering (Varadarajan)





COLLEGE OF INFORMATION STUDIES

MARYLAND'S iSCHOOL

At the College of Information Studies, University of Maryland's iSchool, we are expanding the frontiers of how people access and use information. Utilizing cutting edge technology, we create, use, and combine information to gain knowledge, make decisions, and help change the world. The iSchool specializes in digital data management and curation; human-computer interaction design; inclusive and accessible technology design; health IT; participatory technology design for youth; information and technology design for smart cities and sustainability; and cybersecurity and privacy.

Degree & Certificate Programs

Bachelor of Science in Information Science
Master of Human-Computer Interaction
Master of Information Management
Master of Library & Information Science
Doctorate in Information Studies
Certificate in Digital Curation for Information Professionals
Certificate in Youth Experience
Certificate in School Librarianship

National Rankings

U.S. News & World Report 2017
No. 8 Overall in Library and Information Studies
No. 5 in Archives and Preservation
No. 5 in Information Systems
No. 5 in School Library Media
No. 5 in Services for Children and Youth
No. 8 in Digital Librarianship



Fast Facts

Founded in 1965

•
850 Students from
15 Countries

•
Student Body is
64% Female
36% Male

•
41 Faculty and
32 Staff

•
2 ACM Fellows

•
5 NSF or IMLS
Career Grants

•
\$22.8M Research
Funding in 2016

•
6000+ Alumni

What's New in 2017

- Launched undergraduate program with 360 students enrolled for Fall 2017
- Launching specializations in Legal Informatics and Intelligence & Analytics
- Developing specializations in Health Informatics and Cybersecurity & Threat Analysis
- Hosted the 2017 annual Disability Summit with 450 attendees
- Expanded partnership with Young Readers Center in Library of Congress
- Collaborating with Maryland universities on smart city initiatives
- Spearheading national Big Data Ethics research team, NSF funded
- Faculty member received the distinguished Emmett Leahy Award



Computer Science and Electrical Engineering University of Maryland, Baltimore County

UMBC's [CSEE Department](#) is vibrant, research-oriented and multi-disciplinary with programs in Computer Science, Computer Engineering, Electrical Engineering, Cybersecurity and Data Science. Our faculty (35 tenure track, 11 teaching and 17 research) enjoy collaboration, working across our specializations and with colleagues from other UMBC departments and external partners. We have 1650 undergraduate majors, around 500 graduate students and have awarded 312 PhDs since 1986. Our research is supported by a growing and diverse portfolio of government and industrial sponsors with about \$6M in yearly expenditures.

New faculty. [Frank Ferraro](#) (PhD '17, JHU) has research interests include human language technology, machine learning and artificial intelligence. [Haibin Zhang](#) (PhD '14, UC Davis, Postdocs at UNC, UConn) works on cloud computing, cryptography, security, privacy and distributed systems. [Dr. Abhijit Dutt](#) is a Professor of Practice who directs and teaches in our new [Data Science Masters](#) program. Susan Mitchel and Michael Neary are new lectures and we have four new visiting faculty: Jennifer Sleeman, Bryan Wilkinson, Nikolaos Baroutis and Jorge Teixeira.

Research highlights. Teams led by [Fow-Sen Choa](#) and [Seung-Jun Kim](#) (with Co-PI [Tulay Adali](#)) got two awards from NSF under the Brain Initiative. [Gymama Slaughter](#) is developing a bioreactor to extend the viability of lifesaving human organs as they await transplant with a grant from the Army Medical Research and Materiel Command. [Cynthia Matuszek](#) was awarded an NSF grant to improve human-robot interactions by enabling them to understand the world from natural language. [Alan Sherman](#) received over \$1.5M in additional funding from NSF and the DoD to support cybersecurity scholarships and research on cybersecurity education. Our [Mobile Pervasive and Sensor Systems Laboratory](#) is collaborating with and funded by researchers at ARL to advance human state detection. [CHMPR](#) received over \$1M from NASA to use quantum annealing to study carbon cycles from NASA. As part of the [Cognitive Horizons Network](#), several faculty led by [Anupam Joshi](#) are collaborating with IBM Research on applying AI techniques to automate cyber-security systems, with IBM providing \$1.5 Million in support. Our new π^2 Immersive Hybrid Reality Laboratory features a curved wall with a 50 million pixel resolution and a six degree-of-freedom tracking system. Major companies such as GE, Cisco, MITRE, and Northrop Grumman amongst others provided support for faculty research in the past year.

Faculty awards and honors. Two faculty received NSF CAREER awards: [Tinoosh Mohsenin](#) to develop energy efficient implementation of deep learning algorithms, and [Ting Zhu](#) to enable IoT devices to conduct accurate, efficient, and scalable NWay sensing. Marie desJardins was recognized by Forbes as one of 21 women who are advancing AI research and was selected for the 2017 A. Richard Newton Educator Award by the Anita Borg Institute.

Student achievements. Ph.D. student Kavita Krishnaswamy was named both a Microsoft Fellow and recipient of the Google Lime Scholarship to support her Ph.D. research on developing safe physical human-robot care systems. CyberDawgs, the [UMBC Cyber Defense Team](#) took first place at the 2017 National Collegiate Cyber Defense Competition held in San Antonio.

Alumni news. Kami Okusaga (Ph.D. '10) and Josiah Dykstra (Ph.D. '13) received [Presidential Early Career Awards in Science and Engineering](#). Two distinguished CSEE alumni were honored at UMBC's 2017 commencements: [Dr. Ralph Semmel](#) (Ph.D. CS '92), director of the JHU Applied Physics Lab, was the graduate commencement speaker and [Stephanie Hill](#) (B.S. CS '86), Lockheed Martin's senior VP, spoke at the undergraduate commencement. Alumnus [Anubhav Sonthalia's](#) (MS '03) company [Sokrati was acquired by Merkle](#) for reportedly over USD 100M. Alumna Lauren Mazzoli (BS '16 MS '17) was named the UMBC Rising Star Alumna for 2017.

New academic programs. We started a new Data Science Professional Masters program in Fall 2017. This joins our Cybersecurity Masters program that now has 135 students. We also created undergraduate and graduate tracks in Cybersecurity and Data Science.



LAURA HAAS NAMED CICS DEAN



Laura M. Haas, an IBM Fellow at IBM Research – Almaden, known for her foundational research on information integration technology, has been named dean of the College of Information and Computer Sciences (CICS) at UMass Amherst. She assumed her new role on August 1, 2017.

Haas is a fellow of the ACM and an elected member of the American Academy of Arts and Sciences and the National Academy of Engineering. She earned a PhD in computer science at the University of Texas Austin and holds an AB in mathematics from Harvard University.

NEW FACULTY ('17-'18)

Mohit Iyyer

Assistant Professor (Data Science)

Anna Rita Napolone

Teaching Faculty

Marco Serafini

Assistant Professor (Data Science)

Tauhidur Rahman

Assistant Professor (Mobile Health)

Philip Thomas

Assistant Professor (Data Science)

Jie Xiong

Assistant Professor (Mobile Health)

Peter Haas

Professor (Information Management)

NEWS & HIGHLIGHTS

- Assistant Professor Phillipa Gill was named one of *MIT Technology Review's* 2017 “35 Innovators Under 35.”
- Andrew Barto, professor emeritus, received the **IJCAI-17 Award for Research Excellence** for his work in reinforcement learning.
- With the support of a **\$5M grant from the MassTech Collaborative**, CICS has installed a powerful new Graphical Processing Unit (GPU) cluster to boost its deep learning research.
- Assistant Professor Barna Saha was awarded an **NSF CAREER grant** to explore the fundamental question of what problems can be solved by computers.
- CICS launched new **graduate-level certificate programs** in information security and statistical and computational data science, as well as **Master's concentrations** in data science and security.
- Professors David Jensen and Brian Levine received a **2017 IEEE INFOCOM Test of Time Paper Award**.
- **Best Paper Awards:** AAAI-17 Computational Sustainability (Sheldon, Zilberstein, et al.); ICSA 17 (Brun, et al.); ACM SIGSOFT (Galhotra, Brun, Meliou).
- The **Center for Intelligent Information Retrieval** is celebrating its 25th anniversary.

AT A GLANCE

Faculty

Faculty: 63

Adjunct Faculty: 23

Faculty Distinctions

Lifetime Achievement Awards: 16

NSF Career Awards: 24

Distinguished Professors: 5

Research Activity FY 2016

New Awards: \$22.7M

Expenditures: \$15.8M

Enrollment ('17-'18)

Bachelor's: 999

Master's: 320

Doctoral: 210

IT Minor: 478

CS Minor: 45

Rankings

CS Graduate Programs: #25

Artificial Intelligence: #4

(*U.S. News & World Report*)

Research Centers

Center for Data Science

ds.cs.umass.edu

Center for Intelligent Information Retrieval

ciir.cs.umass.edu

Computational Social Science Institute

cssi.umass.edu

Cybersecurity Institute

cybersecurity.umass.edu



On May 12, 2017, CICS honored 213 new computer scientists, the college's largest-ever graduating class.



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www.cs.uml.edu/~haim

Haim Levkowitz, Ph.D.
Chair & Associate Professor

DEPARTMENT OF COMPUTER SCIENCE

September 24, 2017

Great things that happened at the CS Department at the University of Massachusetts Lowell during the last Academic Year

1. We successfully hired two new Tenure-track Assistant Professors.
2. We successfully hired two new Visiting Lecturers, which we hope to keep.
3. We got approval to hire four additional Tenure-track faculty members this academic year (AY17-18).
4. We are in the process of hiring a senior faculty member at the Full Professor rank, who will bring close to \$10 million in funding.
5. Our Fall 2017 undergraduate enrollments are 35%-40% higher than our Fall 2016 enrollments.
6. Incoming students are coming with better-than-ever credentials (GPA, SAT scores).
7. CS faculty members have received over \$4 million in new grant awards.
8. One CS faculty member received an NSF CAREER award.
9. One CS faculty member received tenure.
10. The University in general is seeing growth in enrollment, better incoming students, and stronger recognition regionally, nationally, and internationally.

New Tenure-Track Faculty Hires



Nirman Kumar
Algorithms
PhD, University of Illinois,
Urbana-Champaign, 2014



Thomas Watson
Theoretical computer science
PhD, University of California,
Berkeley, 2013



Kan Yang
Security and privacy
PhD, City University of Hong
Kong, 2013

Research Highlights

- Department total of over \$40M in funded research projects, covering cyber security, software engineering, mobile sensing, dialogue-based intelligent systems, networking, and theory.
- Headquarters of the NIH MD2K Center of Excellence (<https://md2k.org/>) led by Prof. Santosh Kumar, with over \$32M of funding. MD2K software platform (ACM SenSys 2017 paper) is used at ten US sites to collect 3 TB of mobile sensor data from over 100,000 person-days.
- Papers published at top venues including CHI, FOCS, FSE, ICML, IJCAI, SenSys, UbiComp.
- PhD student Austin Henley and Prof. Scott Fleming received ACM SIGSOFT Distinguished Paper Award at FSE 2016 and Best Paper Award at VL/HCC 2016.

Student and Alumni Highlights

- ACM student chapter received an igniteCS grant from Google to run a 5-week Tigers Tech Expedition program for pre-college students in Spring 2017.
- Undergraduate Kareem Dasilva won the 2016 National BPDA Mobile App Showcase.
- Student team from the Center for Information Assurance led by Prof. Dipankar Dasgupta competed against 200+ teams and placed 11th in the 2016 NSA Codebreaker Challenge.
- Five graduate students attended the 2017 CRA-Women Grad Cohort Workshop.
- Students and alumni have secured internships and full-time positions at Google, Amazon, Facebook, IBM Research, Intel, and Samsung Research.
- Sidney D'Mello (PhD 2009) joined University of Colorado as an associate professor.

Other Highlights

- Established a new Diversity in Computer Science scholarship for undergraduate students.
- NSA/NSF-funded GenCyber boot camps in Summer 2017 hosted nearly 100 students.
- Department hosted Creative Game Design Camp for high school students.
- Prof. Vasile Rus served on the Paris-based Organization for Economic Cooperation and Development (OECD) Panel of Experts on "Computers and the Future of Skill demand".
- MD2K was featured as Cover Story on MIT Technology Review.
- Professor Emeritus Stan Franklin's LIDA AI system was featured in an NBC News article.



2016/17 Snapshot

Computer Science at Michigan

New Faculty Hires

- Manos Kapritsos - Assistant Professor
- Baris Kasikci - Assistant Professor
- Westley Weimer - Professor
- Roya Ensafi - Research Assistant Professor
- Emily Graetz - Lecturer
- Nicole Hamilton - Lecturer

Research Impacts

- Memex human trafficking work on dark web by Michael Cafarella led to law enforcement arrests
- Election security work, congressional testimony, by J. Alex Halderman has mainstreamed recognition of challenges to US democracy, helped spur action
- Medical device and facility security work, congressional testimony, by Kevin Fu seeks mandate of guidelines to help prevent hospital shutdowns
- Smartphone app predicts patient bipolar episodes before full onset; Emily Mower Provost, Satinder Singh Baveja, UM Medical School
- Health data used to predict hospital C. diff infections; Jenna Wiens, UM Medical School
- Smartphone app aids Flint, MI residents in assessing lead risks; UM Data Science Team in conjunction with UM Flint and Google

Department Highlights

- MIT Technology Review 35 Under 35: Jenna Wiens
- Lifetime Achievement Award from European Computer-Supported Cooperative Work: Mark Ackerman
- NSF CAREER Awards: Reetuparna Das, Emily Mower Provost

- PhD grads took faculty positions at Indiana Univ Bloomington, Stanford, Stony Brook, UIUC, UNC-Charlotte, Virginia, and Wisconsin-Madison
- “Engineering for the greater good”: student projects led by David Chesney developed assistive technology for the disabled

Diversity and Outreach

- NEXT Award from National Center of Women and Information Technology for recruiting and retention efforts
- Second annual CS Kickstart orientation held to welcome first-year women
- Women in Computing lecture series; panels with representatives from industry
- Pre-college summer camps held on campus and in Detroit for 120 students

Student Numbers

- Declared undergraduates, W17: 1760
- PhD, W17: 223
- 662 UG degrees conferred, 24 PhDs in AY 16/17
- 48% of incoming first-year UM students were taught CS in AY16/17

Technology Transfer

- Let’s Encrypt, free certificate authority with goal of securing web, surpasses 100M certificates
- Clinc, AI personal assistant spinout, raises \$6.3M Series A Funding
- Lattice Data, spinout that structures dark data, acquired by Apple
- May Mobility, autonomous shuttle fleet service, debuts at Y Combinator



SCHOOL OF INFORMATION

UNIVERSITY OF MICHIGAN

si.umich.edu

Honors and accomplishments

ACM Fellows:

Mark Ackerman, George Furnas

SIGCHI Academy:

Mark Ackerman, Paul Resnick, George Furnas

European Conference on CSCW Lifetime Achievement:

Mark Ackerman

IMS Global Leadership Award:

Charles Severance

NSF CAREER Awards:

Eric Gilbert, Qiaozhu Mei, Mark Newman, Sarita Schoenebeck

New programs

We facilitate high-quality engaged learning experiences for all UMSI students with local and global partners through Alternative Spring Break; Citizen Interaction Design; Design Studio; and Global Information Engagement.

Popular online offerings

- Python for Everybody
- Web Design for Everybody
- Applied Data Science with Python
- MicroMasters in UX Research and Design

Over 511,000 students have enrolled in UMSI MOOCs since 2015

Student stats

850

Current enrollment in all programs (BSI, MSI, MHI, PhD)

435

2017/18: Largest entering class in school history

97-100%

Employment rate for recent graduates in all programs

New faculty 2017-18



Eric Gilbert

Associate Professor and John Derby Evans Endowed Professor of Information



Libby Hemphill

Associate Professor



Alain Cohn

Assistant Professor



Patricia Garcia

Assistant Professor



David Jurgens

Assistant Professor



Andrea Thomer

Assistant Professor



Robin Brewer

Presidential Post-Doctorate Fellow



computer SCIENCE & ENGINEERING

DEPARTMENT AT A GLANCE

OVERVIEW

CS&E at Minnesota has boomed from just a handful of graduate students and faculty in 1967 to an undergraduate and graduate student body today of **approximately 2,200**. These students are served by **46 tenure track faculty members**, who consistently rank among the top scholars in our field and provide leadership and expertise in nearly all major areas of computer science and engineering.

STUDENT ENROLLMENT

We offer B.S. and B.A. Degrees in Computer Science as well as a B.S. in Computer Engineering serving **1,784 undergraduate** (Fall 2017); we offer a Ph.D. in Computer Science, and M.S. Degrees in Computer Science, Software Engineering, and Data Science serving a total of **481 graduate students** (Fall 2017).

DEGREES GRANTED

We granted a total of **379 bachelors**, **115 master's**, and **26 doctoral degrees** (2016-17).

WELCOME NEW FACULTY

Welcome to **Kangjie Lu** (security and privacy, program analysis, and operating systems) and **Janardhan Kulkarni** (algorithms and game theory).

FACULTY

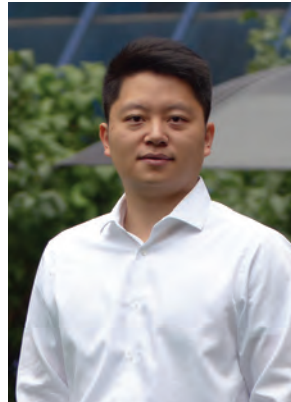
The department has **46 tenured and tenure track faculty members** and **11 teaching faculty**, including **1 Regents Professor** (Vipin Kumar, the highest honor bestowed on a faculty member at the University of Minnesota), **19 NSF CAREER Award winners**, **3 PECASE Award winners**.

FACULTY HIGHLIGHTS

- Distinguished McKnight Professor Joseph Konstan was recognized with the **SIGIR 2017 Test of Time Award** and **AAAI-17's Classic Paper Honorable Mention**.
- Regents Professor Vipin Kumar received the **2016 IEEE Computer Society Sidney Fernbach Award** and was selected as a **SIAM Class of 2017 Fellow**.
- Distinguished McKnight Professor George Karypis received the **2017 IEEE ICDM Research Contributions Award**.
- Professors Konstan and Karypis were also the second recipients ever of **WWW2016's Seoul Test of Time Award**—previous recipients were Sergey Brin and Larry Page.
- Associate Professor Mohamed Mokbel received the **10-Year Award** at **VLDB 2016**.
- Assistant Professor Lana Yarosh received a **2017 NSF CAREER Award** and was inducted into **ACM's Class of 2017 Future of Computing Academy**.
- Assistant Professor Myers received the **National Cancer Institute's 2016 U4C Breast Cancer Challenge Award**.
- Assistant Professor Dan Knights launched the start-up **CoreBiome, Inc.** in August of 2017.

RESEARCH IMPACT

- **49** of our faculty research papers have **1000+ citations** and **106** have **500+ citation** according to Google Scholar.
- This year we had over **\$12M in research expenditures**.



Kangjie Lu



Janardhan Kulkarni



Assistant Professor Lana Yarosh's undergraduate students work with one of the latest versions of the ShareTable.

More information about CS&E:

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

UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

New two NTT Faculty:

- May Zein El Din, M.S.
- Kendall Bingham, M.S.

Research Highlights:

- Dr. Ahmed Hassan \$440,551 from the Office of Naval Research/Air Warfare and Weapons Application Division for “RF Coupling Revisited.”
- Dr. Sejun Song, Ph.D., \$63,709 from Futurewei Technologies for “Super High Throughput and Low Latency Video Streaming” project
- Dr. Zhu Li \$150,000 from Futurewei Technologies for “Point Cloud Compression” and \$95,386 from Huawei Technologies
- Dr. Faisal Khan \$50,000 from the University of Missouri FastTrack Initiative for *“Intelligent IGBT/MOSFET Gate Driver Module with Embedded State of Health Estimator Unit.”*
- Dr. Masud Chowdhury \$50,000 from the University of Missouri FastTrack Initiative for *“On-Chip Integration of High-Speed Voltage Regulator for a Reconfigurable Scheme to Manage Power, Temperature and Reliability in the Next Generation Integrated Circuits.”*
- Drs. Mostafizur Rahman, Ahmed Hassan and Masud Chowdhury \$771,000 from National Science Foundation (NSF) grant to establish a new Center for Nanotechnology.

Other Highlights:

- Dr. Sejun Song full tenure at the rank of Associate Professor for the School of Computing and Engineering.
- Dr. Baek-Young Choi served as a NASA Faculty Fellow at the Marshall Space Flight Center in Huntsville, Alabama for Summer 2017

Student Numbers:

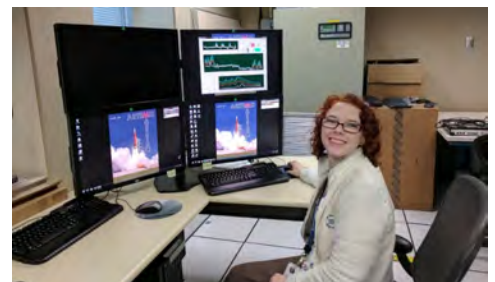
- 129 undergraduate students were awarded degrees in Fall '16 and Spring '17 for Computer Science, Bachelor of Technology and Electrical and Computer Engineering.
- 383 graduate students were awarded degrees in Fall '16 and Spring '17 for Computer Science and Electrical Engineering.
- Seven students were awarded PhDs in Fall '16 and Spring '17.

Organizational News:

- Ant Financial Services Group acquired KC-based EyeVerify and renamed it ZoloZ
- Brian Hare, M.S., received the Provost’s Good Teaching Award for 2016-17

Student Highlights:

Kati Williams (Senior, Electrical and Computing Engineering) just completed her third semester interning at the NASA Marshall Space Flight Center assisting in software development and verification of human rated space flight software for NASA’s Space Launch System (SLS).





2017–2018 Bringing New Faculty, Recognition, Students, and Space

COMPUTER SCIENCE is on the move at the University of New Mexico! UNM, occupying nearly 700 acres along historic Route 66 in Albuquerque, is a designated Minority-serving institution, and one of only four Carnegie Research/Doctoral-Extensive Universities designated as Hispanic-serving. The Computer Science department has 17 tenure track faculty and two lecturers, with growing research expenditures averaging over \$3.5M per year since 2015.

New Faculty Joining the Department

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



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



MARINA KOGAN, joining us in January 2018, researches Human-Centered Computing, with interests in Crisis Informatics, Social Computing, and Network Science.



Growing Recognition and Diverse Impacts

OUR DEPARTMENT conducts fundamental and applied research and works to make things better across Computer Science and beyond, with collaborations around the campus and around the world. A sampling of recent successes include:

- *Faculty Awards:* Darko Stefanovic was named a **2016 ACM Distinguished Scientist**, and Lydia Tapia received the **2017 Borg Early Career Award**.
- *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, to date reaching **1,100 students** across New Mexico—and for the first time, adding a computer science class to the UNM core curriculum.

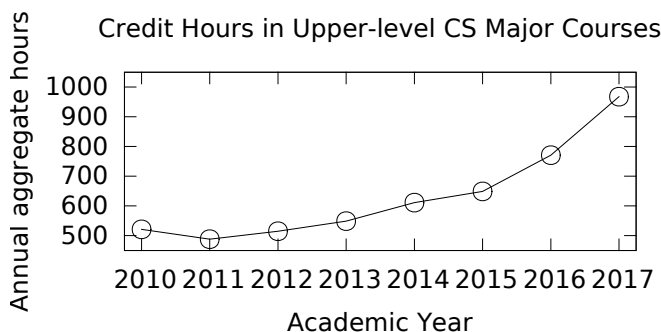
- *Society:* A UNM grad student co-authored a paper revealing risks in top Chinese mobile web browsers. Also, risks to Korean children discovered in a smartphone app generated coverage reaching *The New York Times*.

Student credit hours and degrees soaring

THE CRA has long highlighted CS student growth across the country, a surge that is now being felt in earnest at UNM CS.

The enrollments in our upper-level CS major classes have nearly doubled between 2010 and 2017 (see graph), and the annual BS degrees awarded have more than tripled over those years.

According to the latest Fall 2017 data, we have a total of 143 BS, 65 MS, and 68 PhD candidates in the department—plus 342 undergraduate pre-majors heading our way!



Construction Nears Completion



FARRIS ENGINEERING CENTER is reaching the culmination of a \$26M down-to-the-slabs renovation, bringing new space and facilities for UNM Computer Science. In January 2018, after 18 months scattered around campus, the department is scheduled to reunite in our new space.



UNM

Electrical & Computer Engineering

www.ece.unm.edu/

The University of New Mexico

- Since 1889

2017: An Electrifying Year at ECE



- **New ECE faculty hire Eirini-Eleni Tsiropoulou has been chosen as one of the top ten Rising Stars of 2017 by "Networking Networking Women (N2Women)," a discipline-specific community for researchers in the communications and networking field.**
- **Three new Assistant Professor and two new Lecturer III Positions have been opened at ECE.**
- **"Internet of Things" [Master's Degree](#) offered online at ECE.**

2017 ECE Principal Investigator Awards Announced

| Principal Investigator | Awarded Amount |
|------------------------|----------------|
| Ganesh Balakrishnan | \$480,239 |
| Steven Brueck | \$1,340,519 |
| Vince Calhoun | \$531,532 |
| Christos Christodoulou | \$2,780,485 |
| Daniel Feezell | \$490,000 |
| Rafael Fierro | \$188,203 |
| Vince Calhoun | \$170,000 |
| Mark Gilmore | \$496,971 |
| Gregory Heileman | \$105,000 |
| Thomas Hussey | \$499,831 |
| Craig Kief | \$1,827,824 |
| Jane Lehr | \$1,404,466 |
| Manel Martinez-Ramon | \$370,670 |
| Zhen Peng | \$175,516 |
| Salvador Portillo | \$322,500 |
| EdI Schamiloglu | \$3,634,612 |
| Yin Yang | \$432,707 |

IEEE Communications Society Holds Summer School at UNM

Thirty students spent four days (July 17-20) at the University of New Mexico as part of the 2017 IEEE Communications Society's ("ComSoc") Summer School Program. [The IEEE ComSoc Summer School](#) is designed for young professionals, Ph.D. students, or recent graduates studying communications and related areas.

ComSoc consists of lectures by international experts and includes poster presentations by participating Ph.D. students. The program covers fundamental, advanced and hot topics in communications.

ECE Grad Students Mustafa and Pouncey Leave A Lasting Mark

ECE Grad Student Mustafa Salman has been published twice in 2017. A paper he co-authored appeared in the 2017 IEEE 14th International Symposium on Biomedical Imaging. Another paper appeared in the 2017 IEEE International Conference on Acoustics, Speech and Signal Processing.

ECE Grad Student Jon Cameron Pouncey has been published twice in 2017 and won two awards! His first paper was presented at 19th Annual Directed Energy Symposium, Huntsville, AL, 2017. His second paper appeared in The Proceedings of the 2017 IEEE Pulsed Power Conference, Brighton, England, 2017 (in publication). He was awarded a full scholarship and stipend to complete his PhD from the Department of Defense SMART. He also received a 10K scholarship from the Directed Energy Professional Society Graduate Fellowship for 2017/2018.

School of Information & Library Science
University of North Carolina at Chapel Hill
<http://www.sils.unc.edu>

New faculty hires:



Lukasz Mazur
Human Factors and Health Safety
(joint with Department of
Radiology Oncology in School of
Medicine)



Fei Yu
Health informatics and
analytics, mobile health (joint
with Health Sciences Library)

Research Highlights:

- Active National Science Foundation Awards: David Gotz, Rob Capra and Jaime Arguello; Jaime Arguello (career), Rob Capra (career), Arcot Rajasekar
- Active NIH awards: Javed Mostafa (T3)
- Active IMLS awards: Sandra Hughes-Hassell, Amelia Gibson (career), Cal Lee
- Active foundation awards: Cal Lee (Mellon), Javed Mostafa (United Health Foundation)

Other Highlights:

- New Master's degree in Digital Curation launches in January 2018 (online)
- New PhD in Health Informatics launched in September 2017
- Information and Media in the Trump Era Symposium filled auditorium in March
- Symposium for Social Good drew students and industry from RTP in May
- Two faculty members (Jaime Arguello and Mohammad Jarrahi) received university teaching awards

Student Numbers and Growth:

- 150 Bachelor of Science in Information Science students
- 220 Master of Science students (information science, library science)
- 30 Phd in information science students

Organizational News:

- Berlin-Dublin Summer Program to visit IT companies launched May 2017
- Digital Forensics Lab and Visual Analytics Lab received new grant support
- Ibiblio celebrates 25 years on the Internet
- WiderNet celebrates "internet in a box" devices in more than 1600 institutions in developing countries.

Panelists at an information and media conference co-sponsored by UNC SILS in March discuss the social and political dynamics of "fake news." From left, Deen Freelon, Christopher Bail, Dave Karpf, Zeynep Tufekci, and Tressie McMillan Cottom.



COMPUTER SCIENCE

Computer Science provides high-quality, high-standard instruction and engages both students and faculty in re- search, scholarship, and creative activities that promote learning, foster professional development, and contribute to the field of computing. We have a commitment to high quality and standards and we have a responsibility to both the computing profession and the discipline of computer science



Design and develop tomorrow's solutions

UND's computer science program offers a truly unique experience that gives you the opportunity to:

- Develop expertise in cybersecurity and big data
- Collaborate with engineering students from all disciplines
- Transform robotic systems using 3D printing
- Analyze imagery and data from unmanned and manned flight systems
- Create new systems for use in the medical field
- Develop web and mobile apps for computers and mobile devices
- Influence the design of systems for aerospace, including satellites

Computer Science Graduates have gone on to careers all over the world

High-tech and communication companies such as:

- Intel
- Microsoft
- IBM
- Digi-Key
- Unisys
- Electronic Data Systems
- Echelon
- Qwest
- U.S. West
- Hewlett-Packard
- Cisco
- Hitachi
- Nokia
- LSI Logic
- Motorola
- Verizon
- Bull Worldwide
- Meridian Environmental Technology
- Lucent Technologies
- And many more

Faculty:

Eight full-time faculty members and one part-time lecturer

Students:

The department has around 300 total students.

Facilities:

The facilities are extensively utilized for teaching and research at undergraduate and graduate levels.



Department of Computer Science and Engineering University of North Texas

<http://computerscience.engineering.unt.edu/>

Department Highlights

- With 3 new hires, described below, the department has grown to a size of 34 faculty.



Dr. Xuan Guo joins CSE as an Assistant Professor. He has been a postdoctoral research associate at Oak Ridge National Laboratory since 2015, when he graduated with a Ph.D. in Computer Science from Georgia State University. His research areas are bioinformatics (computational biology, machine learning and data mining) and HPC (cloud computing, distributed computing and big data analytics).



Dr. Kirill Morozov will join UNT as an Associate Professor in Spring 2018. He received his Ph.D. in Computer Science from University of Aarhus, Denmark, and is currently an associate professor at the University of Kyushu, Japan. His research focuses on cybersecurity and cryptography.



Dr. Qing Yang comes to UNT as an Assistant Professor. He received his Ph.D. in Computer Science in 2011 from Auburn University and then joined the Gianforte School of Computing at Montana State University where he was recently recommended for tenure and promotion to Associate Professor. His research focuses on the Internet of Things, vehicular networks, trustworthy social networks, network security and privacy. Dr. Yang is currently PI on an NSF EAGER grant.

- In summer 2017, the department completed an expansion of over 11,000 square feet, increasing the size of the departmental office and lab space by one third.

Research Highlights

- CSE has three Research Centers: Center for Computational Epidemiology and Response Analysis (CeCERA), Center for Information and Cybersecurity (CICS), and the Net-Centric Software & Systems Center.
- CSE has 15 Research Labs in these areas: Algorithms and Computational Science, Computer Security, Computer Systems and Networks, Databases and Data Mining, Intelligent Systems, and Software Engineering.
- Two NSF CAREER award recipients on faculty – Dr. Hyunsook Do and Dr. Wei Jin.

Other Highlights

- Dr. Saraju Mohanty selected as an IEEE Distinguished Lecturer.
- UNT is a [BRAID](#) (Building, Recruiting And Inclusion for Diversity) institution.
- CSE hosted four **GenCyber Camps** and one **Robotics and App Programming Camp** for 120 young women and men in 8th-12th grades in Summer 2017.
- The Teach North Texas program facilitates undergraduates in receiving teacher certification to become K-12 computer science teachers.

Student Numbers and Growth

- CSE awarded 191 Bachelors, 84 Masters and 11 Ph.D.s in 2016-2017.
- CSE sent 7 minority students to Richard Tapia in Sept 2017 and 16 women students to Grace Hopper in October 2017.
- In fall 2017, CSE has over 100 Ph.D. students, 200 M.S. students, and 1,100 undergraduate students enrolled.

Department of Computer Science and Engineering
University of Notre Dame
<http://cse.nd.edu>

New faculty 2017:



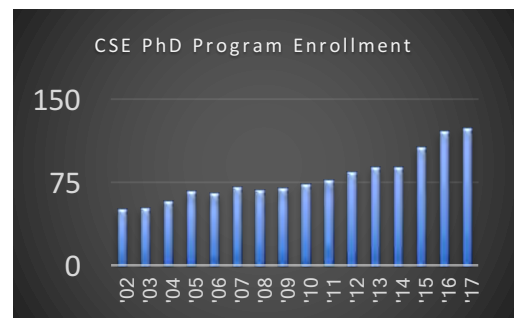
Meng Jiang
Data-driven
Behavioral Analytics



Taeho Jung
Privacy and Security in
data mining

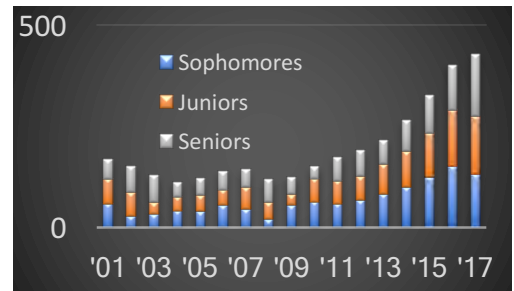
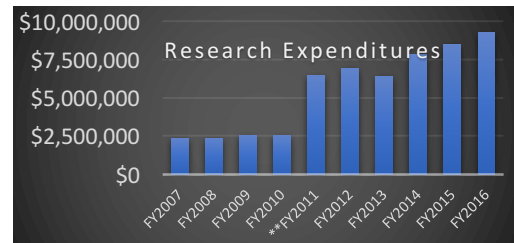
Research and Graduate Studies:

- 124 Ph.D. students enrolled, 13 Ph.D. graduates in 2017
- 79 new research awards, \$15.3 million award dollars, \$10.9 million expended
- Aaron Striegel *et al.*, \$7.9 million, IARPA, “A Comprehensive Approach to Modeling Job Performance via Unobtrusive, Continuous, Multimodal Sensing”



Undergraduate Studies:

- 105 B.S. graduates in 2017
- Number of majors has tripled since 2009
- Major 2017 hire counts: Ford (15), Pariveda (7), Google (6); 41 different employers total
- Prof. Peter Bui won the Frank O'Malley campus-wide teaching award
- ND California launched the “Silicon Valley Semester”: 10 CSE students lived in Palo Alto, took classes and worked at Bay Area firms during the spring semester; scaling up for 2018





Organizational News:

- Three open faculty lines with active search
- Kevin Bowyer completed his term as chair after 10000 (base 2) years of service (picture of cake →)
- Patrick Flynn named chair



Department of Computer and Information Science
University of Oregon

<http://cs.uoregon.edu/>

| | | | |
|---|---|---|---|
| New faculty hires: | | | |
|  | Ramakrishnan Durairajan Research focus: internet measurement robustness and resilience |  | Thien Nguyen Research focus: deep learning and natural language processing (joining in 2018 after a year with Yoshua Bengio at U of Montreal) |
| Research highlights: <ul style="list-style-type: none">• \$1.8M awarded to three faculty from the DOE Exascale Computing Program.• Founder of the Center for Cyber Security and Privacy• Co-founder (with Psychology) of the Center for Digital Mental Health• Best paper nomination (final decision at conference): "Comparative Performance Modeling of Parallel Preconditioned Krylov Methods," HPCC'17.• Best paper finalist: "Performance Modeling of In Situ Rendering," SC16. | | | |
| Other highlights: <ul style="list-style-type: none">• IEEE Fellowship awarded to Prof Rejaie.• PhD graduate employment<ul style="list-style-type: none">○ faculty positions: Colorado College, Arizona State○ industrial positions: LLNL, Twitter, Intel, ParaTools○ doing postdoctoral research: UMass, UOregon• Entering PhD cohort: 11 students, 7 of whom are women! | | | |
| Student numbers and growth: <ul style="list-style-type: none">• Approximately 660 majors and 180 minors.• Awarded 112 Bachelors degrees, with 7 ΦBK, 13 latin honors, 7 departmental honors.• Six undergraduates participated in the UO Undergrad Research Symposium.• Awarded 18 Masters and 7 PhD degrees.• 1st delivery of a minor in data science taking place in 2017-2018 academic year.• Sent 10 students to the Tapia Conference. | | | |
| University news: <ul style="list-style-type: none">• Receipt of a \$500M endowment from Phil and Penny Knight to fund the Knight Campus for Accelerating Scientific Impact.• A Presidential Initiative in Data Science focusing on 8+ tenure lines for candidates with interdisciplinary data/computational research foci is operational this academic year.• A 250 TFlop high-performance computing center acquired and made operational. | | | |

The University of Pennsylvania (Penn)'s Computer and Information Science (CIS) Department in its School of Engineering and Applied Science (SEAS) has been growing at an unprecedented rate in all dimensions over the last five years. Over the last year we have added 6 new tenure-track faculty, bringing the number of tenure-track faculty to 35. In addition, we have 12 teaching, research, and practice faculty and this number has also grown over the last few years. Finally Penn has 12 highly-ranked, and compactly located schools including Law, Business, Medicine, Education, Communications, Social Policy and Practice, and of course Arts and Sciences. More than 30 faculty from these schools have secondary appointments in CIS, making them part of our graduate group, and enhancing the breadth and diversity of expertise in the department, and leading to impactful research collaborations.

The number of our majors has tripled over the last five years, and we have drastically reduced the acceptance rate for Master's applicants (to around 10%) to keep the numbers the same, and raise quality. We have over 800 majors and 300 Masters students. We had 38 Ph.D. students enter our program this year. In the recent past our graduates have gone on to faculty positions at Brown, University of Wisconsin, Madison, and CMU, to post-doctoral positions at MIT, Stanford, Cornell, Berkeley, Yale, and CMU, and to positions at Microsoft, Google, and Facebook among other places.

The areas of strength of the department are programming languages and formal methods, databases, networks and distributed systems, machine learning and data science, natural language processing, and robotics and vision. As a medium-sized department we recruit strategically to maintain our strengths in these areas, while also developing strengths in emerging, related areas. In the last year and a half we have hired an exciting group of people at all levels of seniority: We hired Dan Roth from the University of Illinois, Urbana-Champaign as a full professor; Mayur Naik from Georgia Tech, and Shivani Agarwal from the Indian Institute of Science as Associate Professors; and Linh Phan (Ph.D. from National University of Singapore), Vincent Liu (Ph.D. U of Washington), and Chenfanfu Jiang (Ph.D. UCLA) as Assistant Professors. With these hires we have added to our strengths in data sciences, machine learning, and natural language processing, and in distributed and real-time systems.

Notable awards to our faculty: Dan Roth won the IJCAI John McCarthy Award. Rajeev Alur won the Alonzo Church Award for outstanding contributions to Logic and Computation, and was named a AAAS Fellow. Susan Davidson won the IEEE TCDE Impact Award. Stephanie Weirich received ACM SIGPLAN's Robin Milner Young Researcher Award. Val Tannen won the ACM PODS Alberto Mendelzon Test-of-Time Award. In the last two years alone at least 5 other faculty have won test-of-time/most influential paper awards in their respective subfields. Nadia Heninger received a CAREER Award in the last year. Numerous faculty have won awards from Google, Intel, Facebook, and Microsoft. Many of our faculty are in positions of national leadership in computer science. Susan Davidson is the Chair of the Computing Research Association. Sampath Kannan is a member of the Computing Community Consortium. Jonathan Smith is currently a Program Manager at DARPA.

Finally our department has been a pioneer in educational initiatives. About 15 years ago we created the Digital Media Design major that combines Computer Science with Fine Arts and Communications, and produces majors who are sought after by regular tech firms as well as by the movie and game industries. 8 years ago we created the Network Science and Engineering major that is centered in computer science and systems engineering. Several years ago we made it possible for students from outside of Engineering major in Computer Science, diversifying the pool of our majors. This and other measures have led to greatly increased gender diversity with over 32% of our current majors being female.



School of Computing and Information

Our Department is one of the founding Departments of the **newly-created** School of Computing and Information (SCI), which officially started on July 1st, 2017. SCI is the product of optimism, trust and commitment at all levels of the university. SCI aims to become the intellectual hub for interdisciplinary research, teaching and outreach activities in computing and information. It will build on existing synergies to create a critical mass of faculty in several research areas and foster collaborations across and between constituencies in research and innovation. More info at <http://www.sci.pitt.edu>



Paul Cohen is the Founding Dean of SCI, bringing with him experience that includes managing programs at the Defense Advanced Research Projects Agency (DARPA) and professional research work in artificial intelligence and cognitive science.



Rob A. Rutenbar has been named the University of Pittsburgh's senior vice chancellor for research; he will lead the University's strategic vision for research and innovation, enhancing existing technological partnerships. Before coming to Pitt, he was the Head of the Dept of Computer Science at the University of Illinois at Urbana-Champaign.

Faculty News

- Alexandros Labrinidis was promoted to full professor in Spring 2017.
- Adam J. Lee was appointed Associate Dean for Academic Programs for SCI in September 2017.
- We hired three new teaching faculty: Tim Hoffman, Sherif Khattab, William Laboon
- We will be hiring this year!

Student News

- William C. Garrison III was one of the two runner ups in the 2016 ACM SIGSAC Dissertation Award
- Yanbing Xue, together with his adviser Professor Milos Hauskrecht, received the best student paper award 30th International FLAIRS Conference
- Phuong Pham was awarded best student paper at the ACM International Conference on Multimodal Interaction.

Department News

- Between Fall 2012 and Fall 2017, our undergraduate major population grew by 115%



Picture from our Women In Computer Science (WICS) welcome event.

University of Pittsburgh

School of Computing and Information

www.sci.pitt.edu

Dr. Paul R. Cohen

Founding Dean and Professor

The University of Pittsburgh has a new School of Computing and Information (SCI), the first new school at Pitt since 1995. Only a few weeks old, SCI is already developing joint academic programs with departments as diverse as Biomedical Informatics, Physics and History; and strengthening a campus-wide community around the mission of modeling and managing the world's complicated, interacting systems.

SCI is the product of optimism, trust and commitment at all levels of the university. The vision for the school originated with its constituent faculties, led by Prof. Ron Larsen, Dean of the School of Information Sciences, Prof. Taieb Znati, Chair of Computer Science, and Profs. Diane Litman and Gregory Cooper, who direct the Intelligent Systems Program. Chancellor Patrick Gallagher and Provost and Senior Vice Chancellor Patricia Beeson made strong intellectual and financial commitments to the school, and the recent appointment of Vice Chancellor for Research, Rob Rutenbar, formerly head of Computer Science at the University of Illinois, reinforces Pitt's position that computing and information will be transformative.

The Founding Dean of SCI is Paul Cohen, an AI researcher and recent DARPA program manager.

SCI promotes systems-oriented research and polymathic education. Humanity depends on complicated systems, none of which – not climate, or markets, or microbiomes, or the immune system -- much less their interactions, belongs to a single academic department. Computing and information are central to modeling and managing systems, so SCI provides the space in which diverse disciplines “meet over models.” Polymathic education mean mastering the abstractions, representations and algorithms that unify disciplines. By learning these unifying ideas, SCI students will be able to work productively in any discipline. Thus, SCI will break down academic silos and provide strong technological foundations for interdisciplinary research and education. Transformative!

University of Rochester

Department of Computer Science

cs.rochester.edu



Wegmans Hall

New home of Computer Science and the Goergen Institute for Data Science

Recent Hires

John Criswell

Secure Systems
PhD, UIUC

Ehsan Hoque

Human-Computer Interaction
PhD, MIT

Ji Liu

Machine Learning and
Optimization
PhD, U. Wisc.

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

Department Highlights

2017

- Wegmans Hall becomes the new home of Computer Science and the Goergen Institute for Data Science.

2016

- Ehsan Hoque wins the MIT TR35 and World Technology Awards.

2015

- Rochester becomes one of only two CS departments nationwide to secure three NSF CRII awards for junior faculty.

2014

- John Criswell wins honorable mention for the ACM Doctoral Dissertation Award and the ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award.
- The Goergen Institute for Data Science is created with Henry Kautz as the inaugural Robin and Tim Wentworth Director.
- URCS becomes a charter member of the ABI/HMC BRAID diversity initiative.

Undergraduate, Graduate, and Alumni Highlights

2017

- 33% of our BA/BS computer science graduates are women, thanks in part to the BRAID initiative.

2016

- Mitchell Gordon wins CRA's Outstanding Undergraduate Researcher Award.

2015

- Alumni Rick Rashid and Avi Tevanian win ACM Software System Award for the Mach Operating System.



UNIVERSITY OF SOUTH ALABAMA SCHOOL OF COMPUTING

Organizational News and Highlights

SoC is designated as a National Center of Academic Excellence in Information Assurance/Cyber Defense through 2021. The school has awarded 29 NSF scholarships for service grants in Cybersecurity and has 15 program graduates who are serving in federal cybersecurity positions. In April 2017, the DayZero student team won the Southeastern Collegiate Cyber Defense Competition.

Student Numbers and Growth

The University of South Alabama School of Computing (SoC), the first school of computing in Alabama, has a total of 685 enrolled students with 101 active student internships. During 2016, SoC students were awarded 63 bachelor's degrees and 76 masters' degrees. SoC is located inside Shelby Hall, a state-of-the-art facility that includes seven dedicated labs with cutting-edge equipment supporting faculty and student research in cybersecurity and related areas. SoC is part of a growing research university of more than 15,000 students located on the Gulf Coast, a region experiencing robust economic growth. Mobile and the eight surrounding communities have received one of only 12 U.S. Department of Commerce designations as a "Manufacturing Community."

New Faculty Hires

Dr. Scott Sittig, assistant professor in the Health Informatics program joined the School of Computing in Aug. 2017. Dr. Phil Menard, assistant professor in Information Systems and Technology, and Dr. Ryan Benton, assistant professor in CS, both joined the School of Computing in August 2015.

Research Program Highlights

SoC boasts more than \$10 million in active grant funding. Recently, the National Science Foundation (NSF) awarded a grant for the Industry-University Cooperative Research Centers Program (I/UCRC) for a site focusing on Digital Forensics Information Intelligence. Additionally, the Technology Transfer to Practice (TTP) program, also funded by NSF, trains investigators to transition their research into applications for the government, academia, and industry. The Center for Forensics, Information Technology, and Security (CFITS) is dedicated to the study and application of digital forensics, information technology and assurance, with funding from USA and a grant from the U.S. Department of Defense. The CyberScholars program, also sponsored by NSF, provides full two-year scholarships to 20 students in information assurance education, in exchange for two years of service in government agencies. The GenCyber program provides cybersecurity summer camp experiences for K-12 students and teachers with sponsorship by the National Science Foundation and the National Security Agency.




Department of Computer Science and Engineering
University of South Carolina
<http://cse.sc.edu>

New Faculty Hires

| | | | |
|---|---|---|---|
|  | <p>Dr. Lannan (Lisa) Luo</p> <ul style="list-style-type: none">• Software and Systems Security |  | <p>Dr. Yonghong Yan</p> <ul style="list-style-type: none">• Computer Architecture, Parallel and High Performance Computing• NSF Career Award (2017) |
|---|---|---|---|

New Space

| | |
|---|--|
|  | <ul style="list-style-type: none">• In fall 2017, the Department of Computer Science and Engineering (CSE) moves into the Center for Applied Innovation and Analytics in the new Storey Innovation Center.• This new space will house CSE faculty/staff offices, seminar and meeting rooms, research labs, a data center, and a new experiential Cybersecurity classroom. |
|---|--|

Department Summary

- 23 tenured and tenure-track faculty (11 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); 5 instructors
- **Focal Research Areas:** artificial intelligence, bioinformatics, computer architecture, computer vision, cybersecurity, data science, mobile computing, robotics, software engineering, and wireless networking
- CSE contributes to the following college-wide, interdisciplinary research initiatives: (1) Smart and Connected Communities, (2) Healthcare Transformation, (3) Transformational Computing, and (4) Smart and Agile Manufacturing
- Faculty and student research is funded currently by NSF, ONR, NIH, DoE, and IARPA
- CSE is an NSF Research Experiences for Undergraduates (REU) site in Computational Robotics (<https://reu.cse.sc.edu>).

Undergraduate Programs

- Majors: Computer Engineering (225), Computer Information Systems (192), Computer Science (497)
 - Total undergraduate enrollment (fall 2017) = 914 students
- Minors: Data Science (new in fall 2017), Computer Science (89), Applied Computing (69)
- Cybersecurity Specialization in Information Assurance

Graduate Programs

- Six graduate degree programs (total graduate enrollment = 168 students)
 - MS in Information Security (new in fall 2017), MS in Software Engineering, MS and PhD in Computer Science, MS and PhD in Computer Engineering

Student Highlights

- Active Student Organizations: ACM, Carolina Gamer's Club, Cybersecurity Club, IEEE, Minorities in Computing, Upsilon Pi Epsilon, Women in Computing,
- 53 CSE students have attended the Grace Hopper Celebration of Women in Computing over the last 3 years.
- In the past year our students have been named:
 - GEM National Consortium Fellows, SIGCOMM Student Scholars, NSF Graduate Research Fellowship Program (GRFP) Fellows, International Game Developers Association (IGDA) Scholars, and ACM Student Research Award winners at ACM MobiCom
- 31 teams (made up of 132 CSE seniors) completed senior design capstone projects; a gallery of capstone project video demos is at: <https://cse.sc.edu/capstone/capstone-projects-video-demos-2017>

Other Highlights

- USC added a cluster in fall 2017 to support data and computational science research; the cluster consists of 240 Nodes, Dual Intel Xeon, over 6700 cores, 6 GPU nodes with Dual NVIDIA P100, 8 Large memory nodes with 40 cores and 1.5 TB each, EDR Infiniband (100Gb), 30TB NFS home storage, 200TB Lustre Storage

LEADERSHIP

Dr. Leon Tolbert, Department Head
Min H. Kao Building, Suite 401
1520 Middle Drive
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 42 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 2017-2018**

| | |
|------------------|-------------|
| Undergraduate | 810 |
| MS Enrollment | 74 |
| Ph.D. Enrollment | 211 |
| Total | 1095 |

Fall 2017 Freshman Enrollment

| | |
|----------------------------|------------|
| Computer Science | 122 |
| Computer Engineering | 55 |
| Electrical Engineering | 45 |
| Total EECS Freshmen | 222 |

Degrees Granted 2016-2017

| | |
|---------------|------------|
| Undergraduate | 149 |
| M.S. | 38 |
| Ph.D. | 29 |
| Total | 216 |

Faculty 2017-2018

| | |
|-------------------------|-----------|
| Professors | 23 |
| Associate Professors | 10 |
| Assistant Professors | 6 |
| Professors of Practice | 3 |
| Adjunct | 16 |
| Joint Faculty from ORNL | 30 |
| Total | 88 |

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 Point of Need/Point of Care
Nanobiosensing (PCN)**

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

Master of Science
Electrical Engineering
Computer Engineering
Computer Science

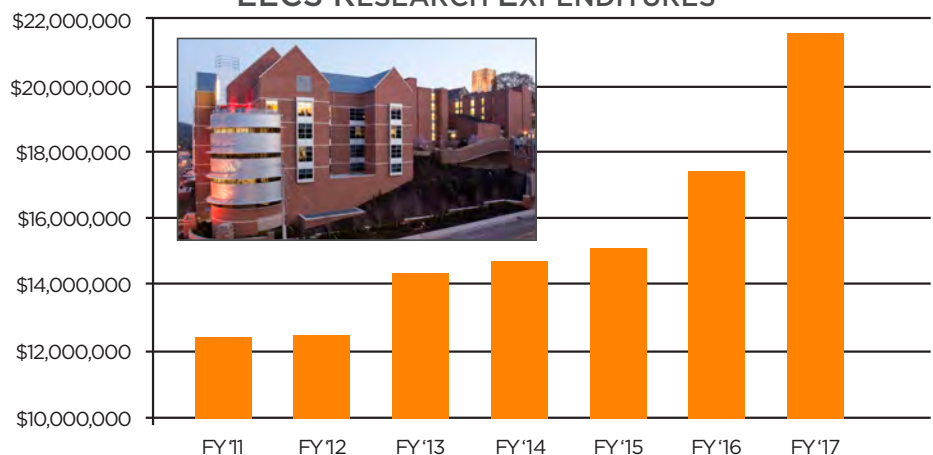
Doctor of Science
Electrical Engineering
Computer Engineering
Computer Science

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 2017: **\$21,561,974**

EECS Research Expenditures per T/TT Faculty for Fiscal Year 2016: **\$437,675**

ASEE Survey Data for 2016

- 16th nationally among public EECS programs in research expenditures per tenure-line faculty member.
- 9th nationally among public EECS programs in Ph.D. enrollment per tenure-line faculty member.

New Faculty Hires in 2016 and 2017

- Associate Professor: Song Jiang (Systems and Storage)
- Assistant Professors: Jiang Ming (Cyber Security), Jia Rao (Cloud and Parallel Computing), Dajiang Zhu (Computational Neuroscience)
- Senior Lecturers: Chris Conly, Ron Cross, Elizabeth Diaz, Chance Eary, Shawn Gieser, Vamsi Gopikrishna

Research Highlights

- Over **\$4M per year in research expenditures** for the last 3 years
- **\$7.6M research grants** in FY17, growing from \$3.1M in FY16
- Dr. Junzhou Huang received **NSF CAREER Award**
- **Best Paper Award** at APSys 2016: Kun Suo, Jia Rao, Luwei Cheng, Francis C. M. Lau
- **Best Student Paper Award** at IUI 2016: S. Gattupalli, D. Ebert, M. Papakostas, F. Makedon, V. Athitsos
- SIGMOD 2017 **Most Reproducible Paper Award**: Ning Yan, Sona Hasani, Abolfazl Asudeh, Chengkai Li
- First Runner-Up in the SIGMOD 2017 **Undergraduate Student Research Competition**: Damian Jimenez

More Achievements

- Dr. Gautam Das serving as a **General Chair** of SIGMOD 2018
- Dr. Sharma Chakravarthy served as a **Program Chair** of DaWak 2017
- Dr. Gergely Zaruba serving as a **Program Chair** of IEEE PerCom 2018
- Dr. Jean Gao serving as a **Program Chair** of IEEE BIBM 2017
- Dr. Jean Gao served as **Chair of the Editor-in-Chief Search Committee** for IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
- Dr. Chengkai Li spoke at **SXSW 2017** as a panelist on automated fact-checking
- **Ph.D. graduates secured tenure-track positions**: Naeemul Hassan (Univ. of Mississippi, Assistant Professor), Ashis Biswas (Univ. of Colorado at Denver, Assistant Professor), former Ph.D. graduate Senjuti Basu Roy (NJIT, Assistant Professor); Ph.D. graduates landed post-doctorate research positions: Azade Nazi (Microsoft Research, postdoc), Praveen Tripathi (Stony Brook University, Research Assistant Professor)

Students and Enrollment Growth

- **2014 students** in Fall 2017 (1270 Bachelor's, 634 Master's, 110 Ph.D. students)
- Successful launch of CSE **Senior Design industry sponsorship program** resulting in 12+ sponsored projects and over \$60,000 in funding since Spring 2016
- CSE student teams earn **hackathon awards** at Verizon's Hack Day, TAMU Hackathon, SASEhack



We are Hiring! (5 New T/TT Positions)

- Construction of the \$125-million, 220,000-sq. ft. **Science and Engineering Innovation and Research (SEIR) building** started. A space with 900 teaching seats in lecture halls and classrooms, the building will also be the new home of several CSE research labs.
- UT-Arlington named **R1 university** by the Carnegie Classification of Institutions of Higher Education
- **National Rankings** (U.S. News and World Report): Computer Engineering #64, Computer Science #90
- Ranked by **csrankings.org** #39 overall (by 2017 publications), #4 in AI, #10 in OS, #19 in Databases, #21 in High-Performance Computing, and #46 in Machine Learning and Data Mining (by 2016- 2017 publications)

The Computer Science Department at UT Dallas is one of the largest in the US with approximately 3,550 students and a distinguished faculty that has won numerous awards.

Research Highlights

- Six broad areas of research: AI, Cyber Security, Networks, Systems, Theory, Software Engineering.
- \$8.57 Million Research Expenditure in 2016 (37th ranked nationally based on ASEE data).
- Faculty includes 13 NSF CAREER Awardees, 3 AFOSR, and 1 ARO Young Investigators.
- CS Faculty direct 4 research institutes, 3 research centers, and one education/outreach center.
- Prof. Andi Marcus won his 4th Most Influential Paper award in the area of Software Engineering.
- Prof. Tien Nguyen won his 4th ACM SIGSOFT Distinguished Paper award in Software Engineering.
- Prof. Murat Kantarcioglu received the Technical Achievement Award in Intelligence & Security Informatics (ISI) from the Institute of Electrical and Electronics Engineers (IEEE).
- Prof. Bala Prabhakaran's NSF funded project on 3D Immersive Tele-Rehabilitation was chosen by the NSF as one of eight to showcase to US Congressmen & Senators at Capitol Hill.
- Prof. Zygmunt Haas' paper among the top 10 most cited papers in networks on Google Scholar.
- Prof. Gopal Gupta won the 10-year test-of-time award for his work on coinduction in logic.
- CS. Dept. ranked #7 in NLP, and #10 in Software Engineering at CSrankings.org ('06-'17 period).

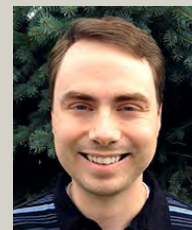
Student Numbers/Growth/Education Highlights

- Approximately 3,550 total students (2,400 Undergraduates, 1000 Masters Students, 150 Ph.D.s).
- Awarded 285 Bachelors, 430 Masters, and 23 Ph.D.s degrees in 2016-17.
- Ranked #4 nationally for the total number of students, #11 for the number of female students.
- Ranked #11 nationally for the no. of Hispanic students, #14 for the no. of African American students.
- Ranked #21 in 2014 LinkedIn's ranking of "Best Universities for Software Developers."
- Nearly 60 teams completed industry-sponsored senior-design, capstone projects.
- Silver sponsor of Grace Hopper Conference; sent 30 Students to GHC 2016.
- More than a dozen CS student organizations under the umbrella of the student chapter of the ACM.
- Student groups include: Women Who Compute, AI Society, Linux Users, Cyber Security Group.
- Center for CS Outreach runs one of the largest university-based K-12 outreach program.
- NSA Center of Excellence in Cyber Security Education, Research and Cyber Operations.

Organizational News

- Multiple new positions to be filled in Machine Learning, Data Science, Software Engineering, Cyber Security, and Human Computing Interaction (HCI).
- Center for Research in Machine Learning recently founded by Drs. Gogate, Ruoizzi, and Natarajan.
- Center for Women in Cyber Security recently founded by Dr. Bhavani Thuraisingham & Dr. Janell Straach.

New Tenure-Track Faculty



Dr. Kyle Fox
Comp. Geometry
Ph.D. UIUC,
Postdoc Duke



Dr. Shuang Hao
Network/
System Security
Ph.D. GaTech,
Postdoc UCSB



Dr. Sriraam
Natarajan
Machine
Learning/AI
Ph.D. OR St.,
Prior Faculty
appt. at Indiana



Dr. Shiyi Wei
SW Engineering,
Program
Analysis
Ph.D. VaTech,
Postdoc UMD

THE UNIVERSITY OF TEXAS AT EL PASO

Department of Computer Science

Reimagine CS - What it means to learn, whose knowledge counts, and what counts as knowledge



Mining Minds sculpture includes **binary code** that states: "Believe in yourself and in your dreams. Believe in UTEP and its aspirations. Share the Dream!"

2016-2017 HIGHLIGHTS

- The **Brookings Institute** ranks UTEP **#1** for **public, research-generating universities** with the highest level of **social mobility**.
- UTEP is designated a **National Security Agency (NSA) Academic Center of Excellence (ACE) in Cyber Operations** (1 of 19 in the U.S.); it is also designated an NSA ACE in Cyber Defense
- The U.S. Army Research Laboratory (ARL) has established a **satellite research center** at UTEP associated with the **ARL South** initiative housed at UT Austin,
- UTEP is preparing a diverse workforce with expertise in developing secure cyber systems as an **NSF/DHS CyberCorps® university**.
- Led by ARL scientist Dr. Acosta and CS Associate Professor Dr. Salamah, UTEP commemorated the opening of a **new cybersecurity center** with its first **community cybersecurity workshop** for professionals (15 organizations represented) held on August 10, 2017.
- Dr. Kiekintveld received a **Multidisciplinary University Research Initiative (MURI) grant** for the project, "Realizing Cyber Inception: Towards a Science of Personalized Deception for Cyber Defense." The partners are USC, CMU, ASU, UNC Chapel Hill, and NCSU.
- Dr. Villanueva Rosales (CS) in collaboration with Dr. Cheu (Civil Engineering) received an **NSF IRES grant** for a US-Mexico interdisciplinary research collaboration for smart cities. The Universidad de Guadalajara, an IEEE Affiliated Smart City, is the partner institution.
- Dr. E. Freudenthal **patented a process for augmenting audio** reality that facilitates on-pitch singing and may have therapeutic applications related to ASD and Parkinson's.
- UTEP CS is **one of nineteen** departments that is leading the nation in **revolutionizing engineering and computer science education** by focusing on a model of change for creating inclusive environments that prepare students for professional practice in CS.
- Dr. A. Gates received funding from the Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) program. This **collective impact project** builds upon the **Computing Alliance of Hispanic Serving Institutions (CAHSI)**, which was founded to increase the number of Hispanic students pursuing computing degrees.
- UTEP is a **BRAID institution**. The BRAID (Building, Recruiting, And Inclusion for Diversity) initiative, is co-led by the Anita Borg Institute and Harvey Mudd College and supports UTEP's diversity efforts, including sending 15 female students to the Grace Hopper Celebration.



SCHOOL OF COMPUTING

THE UNIVERSITY OF UTAH

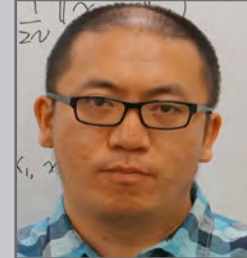
www.cs.utah.edu



Srikumar Ramalingam
Associate Professor
Computer vision, machine learning, and robotics



Rogelio Cardona-Rivera
Assistant Professor
Computational psychology, AI, and game design



Shandian Zhe
Assistant Professor
Probabilistic machine learning

Research Highlights

- Best Paper Award, ICRA 2017: “*First Demonstration of Simultaneous Localization and Propulsion of a Magnetic Capsule in a Lumen using a Single Rotating Magnet*”, Katie M. Popek, Tucker Hermans, and Jake Abbott
- School of Computing researchers receive a new three-year \$9.7 million NSF grant to extend work on CloudLab
- School of Computing ranked in the top quarter of the nation’s schools for its research productivity, according statistics from CSRankings.org

Student Numbers and Growth

- Undergraduate growth on the rise
- Awarded 85 Bachelors, 40 Masters, and 15 Ph.D.s
- Over 185 students completed senior capstone projects, see projects here
<http://www.cs.utah.edu/undergraduate-programs/seniorcapstone2017/>
<https://eae.utah.edu/2017-published-games/>

Other Highlights

- New 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>
- School of Computing students won three gold and a silver medal in the 6th International Competition on Software Verification
- Charles Hansen to receive the 2017 IEEE Visualization Career Award

Organizational News

- \$4 million in ongoing funds from the Utah State legislature to continue to fund growth in engineering and computer science
<https://www.coe.utah.edu/2017/03/10/lawmakers-fund-engineering-initiative/>
- School of Computing to fill over 12 new faculty slots over the next 3 years

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, AND THEORY, WHILE PROVIDING EXCEPTIONAL UNDERGRADUATE AND GRADUATE EDUCATION.



13
NEW TENURED OR TENURE-TRACK FACULTY SINCE 2012-2013



WE'RE HIRING

10

NEW FACULTY THIS YEAR

CYBER-PHYSICAL SYSTEMS

CYBERSECURITY

CS THEORY

MACHINE INTELLIGENCE

COMPUTER SYSTEMS

Email cs-office@virginia.edu for information.

TENURED OR TENURE-TRACK FACULTY SINCE 2012-2013:



YANJUN QI
ASSISTANT PROFESSOR
Ph.D.: Carnegie Mellon University
Machine Learning



MOHAMMAD MAHMOODY
ASSISTANT PROFESSOR
Ph.D.: Princeton University
Cryptography
Algorithms



SAMIRA KHAN
ASSISTANT PROFESSOR
Ph.D.: University of Texas, San Antonio
Computer Architecture
Grid/Cloud/High-Performance Computing
Programming Languages and Compilers



HONGNING WANG
ASSISTANT PROFESSOR
Ph.D.: University of Illinois, Urbana-Champaign
Machine Learning, Text Mining, Information Retrieval
Computational Statistics and Simulation/Statistical Modeling
Stochastic Modeling



BAISHAKI RAY
ASSISTANT PROFESSOR
Ph.D.: University of Texas, Austin
Software Engineering
Machine Learning, Text Mining, Information Retrieval



FARZAD FARNOOD
ASSISTANT PROFESSOR
Ph.D.: University of Illinois, Urbana-Champaign
Risk and Decision Analysis
Biomedical Data Sciences
Stochastic Modeling
Machine Learning
Wireless and Optical Communication Systems



VICENTE ORDONEZ
ASSISTANT PROFESSOR
Ph.D.: University of North Carolina, Chapel Hill
Computer Vision
Machine Learning
Natural Language Processing



HAIYING SHEN
ASSOCIATE PROFESSOR
Ph.D.: Wayne State University
Internet of Things/Cyber-Physical Systems
Smart Buildings/Cities
Cloud Computing
Big Data
Distributed Computer Systems and Networks



MADHUR BEHL
ASSISTANT PROFESSOR
Ph.D.: University of Pennsylvania
Autonomy and Control
Machine Learning/Statistical Modeling
Cyber-Physical Systems
Smart Cities
Autonomous Vehicles



BRAD CAMPBELL
ASSISTANT PROFESSOR
Ph.D.: University of Michigan
Cyber-Physical Systems
Internet of Things
Smart Buildings/Cities
Embedded Systems



YUAN TIAN
ASSISTANT PROFESSOR
Ph.D.: Carnegie Mellon University
Cyber-Physical Systems
Cybersecurity
Machine Learning
Human-Computer Interaction



QUANQUAN GU
ASSISTANT PROFESSOR
Ph.D.: University of Illinois, Urbana-Champaign
Machine Learning
Data Mining
Optimization
High-Dimensional Statistics



LU FENG
ASSISTANT PROFESSOR
Ph.D.: University of Oxford
Cyber-Physical Systems
Robotics
Formal Methods



SCHOOL of ENGINEERING & APPLIED SCIENCE
Department of Computer Science

HUMAN CENTERED DESIGN & ENGINEERING

Putting people first, we research, design, and engineer interactions between humans and technology.

2017-2018 FACULTY HIRES



LEAH FINDLATER
ASSISTANT PROFESSOR

- Accessible design
- Mobile and wearable technologies
- Human-computer interaction



NADYA PEEK
ASSISTANT PROFESSOR

- Digital fabrication
- Rapid prototyping
- Machine infrastructure

CENTER UPDATES

HCDE **Center for Collaborative Systems for Safety, Security and Regional Resilience (CoSSaR)**, now in its third year, launched a Speaker Series to bring experts in the areas of community resilience, to emergency management, to national security and law enforcement, to the UW campus.

The **Center for Engineering Learning and Teaching (CELT)** is in its third year leading the Consortium to Promote Reflection in Engineering Education (CPREE) with funding from The Leona M. and Harry B. Helmsley Charitable Trust.

STUDENT NUMBERS & GROWTH

Undergraduate enrollment: 206

Major-declared students in their junior and senior year

Master's enrollment: 176

Certificate enrollment: 55

Doctor of Philosophy enrollment: 40

| GENDER DIVERSITY | BS | MS | PHD | UCD |
|------------------|-----|-----|-----|-----|
| WOMEN | 61% | 56% | 60% | 62% |
| MEN | 39% | 44% | 40% | 38% |

FACULTY & STUDENT HIGHLIGHTS

Professor **Kate Starbird** has gained international attention on her research on the spread of online rumoring during disaster events, uncovering a web of conspiracy theories, political propaganda, and disinformation.



PhD student **John Porter** received a Microsoft Dissertation Grant to support his research on making gaming more accessible to people with motor disabilities.



The UW profiled HCDE undergraduate student **Tsewone Melaku** for her work encouraging young women of color to pursue STEM fields. Melaku holds leadership positions in the UW's Dream Project and Women's Center Making Connections program.



Phd student **Elena Agapie**, Research Associate **Laura Pina**, and professors **Julie Kientz** and **Sean Munson** conducted a study of period-tracking apps, discovering key reasons why they often fail users' expectations.



Senior Lecturer **Andrew Davidson** organized the UW's first Engineering-focused Alternative Spring Break, bringing a group of HCDE students to the Makah Reservation in Neah Bay, Washington, to lead a week-long design-thinking workshop for the local middle school students.



PhD students **Christina Chung** and **Elena Agapie**, and Professor **Sean Munson** found that posting food photos on Instagram can help users achieve healthy eating goals.



Professor **David Ribes** is conducting an ethnographic and archival NSF-funded study of the institutions of data science.



HCDE seniors **Runyuan (Jason) Chen**, **Aaron Joya**, **Leena Choi**, and **ShinYoung (Lucia) Choi** presented their research project *An Exploration of Self-Transcendence Through Solo-Travel* at the CHI 2017 Conference Student Research Competition.



2017 UPDATE

NEW NAME

On March 9, 2017, the University of Washington Board of Regents approved creation of the **Paul G. Allen School of Computer Science & Engineering**, named in honor of the visionary technologist and entrepreneur. Elevation of UW CSE from a department to a school came with a **\$50 million Endowed Fund for Excellence** created through gifts from Paul Allen and Microsoft to advance our leadership in discovery, education, entrepreneurship, and outreach.



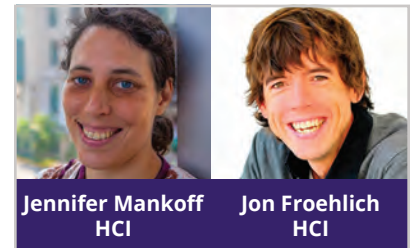
NEW DIGS

The Allen School **broke ground on a second building** adjacent to our current home at the heart of UW's Seattle campus. CSE2 will include a large robotics lab; dedicated wet lab; sophisticated makerspace; flexible events center; 250-seat auditorium; undergraduate commons; and new classrooms, faculty and graduate student offices, and collaboration spaces. Together, CSE2 and the existing Paul G. Allen Center will provide 291,000 square feet to house our rapidly expanding school.



NEW FACES

Six outstanding new tenure-track faculty (pictured at right) joined the Allen School in Fall 2017, strengthening our leadership in human computer interaction, robotics, computer architecture, theory of computation, and machine learning.



Jennifer Mankoff
HCI

Jon Froehlich
HCI

NEW FRONTIERS

A small sample of Allen School research initiatives pushing the boundaries of computing:

BATTERY-FREE COMPUTING: **Shyam Gollakota** and **Joshua Smith** oversee the development of backscatter technology for powering devices with energy pulled from the air. The team produced the first working prototype of a battery-free cellphone this summer.

NEXT-GENERATION STORAGE: Our **Molecular Information Systems Lab**, a collaboration with Microsoft Research, is developing DNA-based archival data storage. Last year, the MISL team set a record with the amount of data it successfully encoded in and retrieved from DNA.

MOBILE HEALTH: Researchers in the **UbiComp Lab** led by **Shwetak Patel** created a set of smartphone apps for disease screening and management, some of which are under review by the Food & Drug Administration for clinical use and are being adopted by industry.

SECURITY OF AUGMENTED REALITY: **Franziska Roesner** leads efforts to identify security risks associated with emerging AR platforms and to design novel systems that safeguard users.



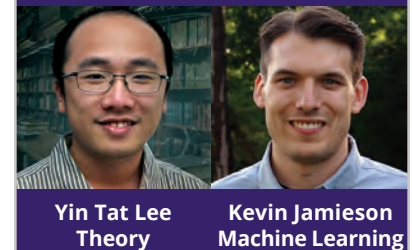
Sidd Srinivasa
Robotics

Michael Taylor
Architecture

NEW TECH IMPACT

Faculty, students, and alumni are deeply engaged in Seattle's booming tech scene. Recently **Turi** was acquired by Apple as the foundation for its future machine learning efforts; Facebook is adopting the **DreamBit** personalized image search tool from our Graphics & Imaging Lab; **Jeeva Wireless** raised \$1.2M to commercialize backscatter research; **Senosis Health** is commercializing our mobile health applications; **ImSitu** situation recognition software, a collaboration with the Allen Institute for Artificial Intelligence, is advancing the state of the art in computer vision; **Mozak**, from our Center for Game Science and the Allen Institute for Brain Science, is revolutionizing neuroscience research; **Impinj**, a world leader in RFID, had a successful IPO.

Our Industry Affiliates program engages more than **130 companies**, reflecting the growing concentration in the Seattle region of engineering offices of major technology companies.



Yin Tat Lee
Theory

Kevin Jamieson
Machine Learning

NEW ACCOLADES

Major recognition of Allen School faculty in just the past 12 months includes **Franziska Roesner**, TR35; **Emily Fox**, Presidential Early Career Award (PECASE); **Tom Anderson**, Fellow of the American Academy of Arts & Sciences; **Shwetak Patel**, Fellow of the Association for Computing Machinery; **Jeffrey Heer**, Grace Murray Hopper Award; **James R. Lee**, Simons Investigator Award; **Ali Farhadi** and **Jon Froehlich**, Sloan Research Fellowships; **Thomas Rothvoss**, Packard Fellowship; and seven NSF CAREER Awards: **Alvin Cheung**, **Ali Farhadi**, **Jon Froehlich**, **Katharina Reinecke**, **Franziska Roesner**, **Thomas Rothvoss**, and **Emina Torlak**.





Department of
Computer Sciences
UNIVERSITY OF WISCONSIN-MADISON

Research highlights

- UW-Madison is the lead campus on a \$6.1M Office of Naval Research grant, “Techniques and Tools for Debloating Containers.” *Professor Somesh Jha* is lead investigator for a team spanning five institutions.
- *Professor Stephen Wright* will lead a team of 14 researchers to establish a new, interdisciplinary Institute for Foundations of Data Science, supported by a \$1.5M NSF grant.
- A team of researchers including *Professors Aws Albarghouti, Loris D’Antoni, Shuchi Chawla, and Jerry Zhu* are developing a tool called FairSquare to automatically detect and fix bias in algorithms under a \$1M NSF grant.

Teaching

- CS is now the largest major on the UW-Madison campus, counting both undergraduate and graduate students.
- Our introductory curriculum has been redesigned with a new course sequence to better serve students with different levels of experience.
- A *Computer Sciences Learning Center* opened in spring 2016 to provide drop-in assistance to introductory students four days per week.
- We have partnered with the National Center for Women & Information Technology on a strategic plan to boost women’s enrollment in CS.

Faculty award highlights

- *Professor Gurindar Sobi* received the IEEE B. Ramakrishna Rau Award.
- *Professors Paul Barford and Somesh Jha* were named ACM Fellows, bringing the faculty total to eight.
- *Professor Jin-Yi Cai* was elected as a foreign member of Academia Europaea.



New faculty

- **Justin Hsu**, *programming languages*, begins 2018
- **Yingyu Liang**, *machine learning*
- **Theodoros Rekatsinas**, *databases/big data*
- **Mathew Sinclair**, *architecture*, begins 2018
- **Christos Tzamos**, *theory*, begins 2018
- **Shivaram Venkataraman**, *big data systems*, begins 2018

Retirements

- **Charles Dyer**, *artificial intelligence*
- **Jude Shavlik**, *computer vision*

New programs

- **Entrepreneurship**: Enabled by an anonymous donation, a partnership with Madison accelerator gener8tor helps students realize their ideas.
- **User experience**: A certificate program in UX has launched in collaboration with UW-Madison’s iSchool.

Web: cs.wisc.edu

Facebook & Twitter:

@WisconsinCS

The University of Wyoming is the only institution in Wyoming offering undergraduate and graduate degree programs. The Computer Science Department is housed in the College of Engineering and Applied Sciences (CEAS) and offers BS, MS, and PhD degrees. We currently have 13 faculty members: 3 Professors, 2 Associate Professors, 2 Assistant Professors, 1 Professor of Practice, 3 Lecturers, and 1 Visiting Assistant Professor. Our research strengths are in AI and Machine Learning, Human Computer Interaction, Cybersecurity, Big Data, Formal Methods and Theorem Proving, and Computational Complexity. The department has 290 undergraduate students and 30 graduate students. The department has the highest levels of support from the College, the University, and the office of the Governor of Wyoming. We have a number of open graduate assistantships in Machine Learning and Cybersecurity and are searching for two tenure track faculty in Cybersecurity.

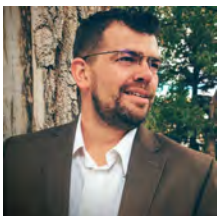
New Faculty



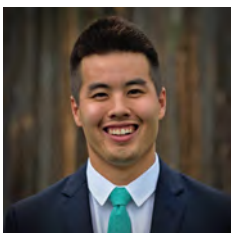
Dr. Lars Kotthoff
Assistant Professor
Ph.D. University of St Andrews
2012
<http://www.cs.uwyo.edu/~larsko>
Lars' research areas are AI and Machine Learning. He comes to us from a Post-doctoral fellowship at the University of British Columbia. Before that he was a post-doctoral researcher at University College Cork and was a researcher at St Andrews.



Dr. Chao Lan
Assistant Professor
Ph.D. University of Kansas,
2017
<http://www.cs.uwyo.edu/~clan>
Chao's research area is fairness-aware machine learning and machine learning applications in cyber-security. Chao came directly to us after completing his Ph.D. at the University of Kansas.



Dr. Mike Borowczak
Professor of Practice
Ph.D. University of Cincinnati
2013
<http://www.cs.uwyo.edu/~mborowcz>
Mike's research areas are Cybersecurity and Data Mining.. He came to us from a Data Science startup in Boulder Colorado and before that was at Intel. He is the Director of the new Cedar center and lab.



Dr. Nick Cheney
Visiting Assistant Professor
Ph.D. Cornell University 2017
<http://www.ncheney.com>
Nick's research areas are evolutionary design and deep reinforcement learning for simulated and physical robotic automation tasks.

Promotions



Dr. Amy Banic
Associate Professor
Ph.D. University of North Carolina, Charlotte 2008
<http://www.cs.uwyo.edu/~abanic/>
Amy's research is area is 3D Human Computer Interaction, Immersive Visualizations, and Virtual Environments. In 2017 she was awarded tenure and promoted to Associate Professor. Congratulations Amy!



Dr. Jeff Clune
Associate Professor
Ph.D. Michigan State University,
2010
<http://jeffclune.com>
Jeff's research is at the intersection of evolutionary algorithms and deep learning. He was awarded an NSF CAREER grant in 2015. In 2017 he was awarded tenure and promoted to Associate Professor. Congratulations Jeff! He is currently on leave at Uber.

CEDAR Center Established: The Cybersecurity Education and Research ([CEDAR](#)) Center was established in the Spring 2017 semester. Dr. Mike Borowczak was hired as director to set up the center and establish the University of Wyoming as a designated NSA/DHS Center of Academic Excellence in Cybersecurity. The CEDAR lab houses graduate students and servers allowing students and researchers to explore in a sandboxed space. The department has established a new cybersecurity certificate program.

Machine Learning for Everyone: The new Machine Learning group is designing a Machine Learning certificate that will allow students from other disciplines learn machine learning. Lars Kotthoff is offering an evening course (Fall 2017) for faculty and researchers from other disciplines to learn how to apply Machine Learning in their own research.

AI, The Future of Work, and University Education: The Department and CEAS are organizing a Summit in Jackson WY (June 2018) on how Universities should respond to the impending effects of AI on the future of work and how Universities should respond. This is crucial, especially to land grant institutions like the University of Wyoming. Stay tuned.

The Department is searching for 2 Tenure Track Faculty to start August 2018. Cybersecurity is the preferred area.

Department of Computer Science
Virginia Tech

www.cs.vt.edu

Faculty and Staff

- 47 teaching faculty, including 42 tenured or tenure-track, 3 professors of practice, 2 senior instructors
- 9 research faculty, 12 affiliate faculty from other VT departments or institutes
- 16 administrative and support staff, 6 administrative and professional faculty
- New faculty members joining in Fall 2017:
 - Matthew Hicks, PhD UIUC, systems, security, architecture
 - Xun (Steve) Jian, PhD UIUC, architecture, systems
 - Tanushree Mitra, PhD Georgia Tech, social computing

Students and Degree Programs

- Undergraduate program: 841 majors (soph, jr, senior), 17% women, 200 BS degrees awarded in 16/17
- Graduate program: 82 MS and 175 PhD students, 24% women, 38 MS and 32 PhD degrees awarded in 16/17
- 13 PhD graduates moved into tenure-track positions over last two years
- Participating in several interdisciplinary degree programs, including 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 fourth straight year

Research and Professional Service Highlights

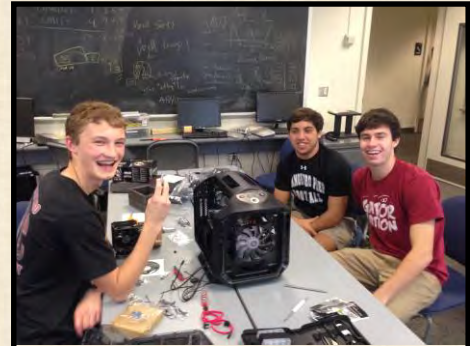
- \$11M in research expenditures in FY17, four-year average of \$13.2M per year
- Kurt Luther received NSF CAREER award, joining nine other CAREER recipients in the department
- Ed Fox named IEEE Fellow
- Best paper awards at IISWC 2016, HPDC 2017, ICDM 2017
- Major conference leadership roles at SIGCSE 2017, SSTD 2017, ICSB 2017, ICPP 2017

Coming Soon ...

- Searching for six new faculty members this year
- Significant involvement and leadership in university-wide initiatives in Data & Decisions, Integrated Security, Creativity & Innovation, and Intelligent Infrastructure



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 & Engineering (CSE) at Washington University in St. Louis - <http://www.cse.wustl.edu>

New 2017 faculty hires (5 Assistant Professors, 1 Full Professor)

| | | |
|---|---|---|
|  <p>Sanjoy Baruah Full Prof. Real-time computing & safety critical systems</p> |  <p>Ayan Chakrabarti Asst. Prof. Computer vision, computational photography, and machine learning</p> |  <p>Chien-Ju Ho Asst. Prof. machine learning, algorithmic economics, optimization, online behavioral social science</p> |
|  <p>Ulugbek Kamilov Asst. Prof. Computational imaging, image reconstruction, machine learning</p> |  <p>Brian Kocoloski Asst. Prof. High performance computing, parallel systems and software</p> |  <p>William Yeoh Asst. Prof. Artificial intelligence, optimization, multi-agent systems</p> |

Research Highlights

- Ph.D. student Missael Garcia was a co-author on a paper that won the Best Student Paper Award at the IEEE International Symposium on Circuits and Systems, as well as the Best Paper Award of the “sensory circuits and systems” track of that symposium
- Ph.D. student Abby Stylianou developed and deployed, TraffickCam, a web-based application that helps fight sex trafficking by targeting where the crimes usually occur.
- CSE faculty, Patrick Crowley, received a three-year \$499,960 NSF grant to focus on further developing the concept of Named Data Networking (NDN).
- CSE faculty, Yixin Chen, received a two-year \$589,998 NSF grant to develop, validate and assess machine-learning, forecasting algorithms that predict adverse outcomes for patients.

Other Highlights

- Prof. Raj Jain received the Lifetime Achievement Award from ACM SIGCOMM
- Prof. Patrick Crowley’s company, *Observable Networks*, was acquired by Cisco Systems
- Prof. Roch Guerin was elected chair of ACM SIGCOMM
- Computer Science and Engineering is getting a new building, McKelvey Hall, scheduled to open in late 2020

Student Numbers and News

- Our Intro to Computing class, CSE 131, is now the largest class on campus, and exceeded 600 students in the Fall 2016 semester (over 60% of those students are not engineering students, and 40% of the students are women)
- Computer Science and Engineering now represents over 40% of all course units taught in the School of Engineering
- WashU programming team placed at the ICPC World Finals (they finished 34th overall)
- CSE Senior, Brett Teng Gao, was part of the team that won the Google-sponsored AI Genomics Hackathon
- CSE Senior, Roger Albert Iyengar was awarded an NSF Graduate Research Fellowship
- ArchHacks 2016, organized by WashU students, brought together over 1,000 students to Washington University who worked on developing novel solutions to key health problems



Department of Computer Science

Wayne State University | Detroit, MI

College of Engineering

engineering.wayne.edu/cs

| NEW FACULTY |



Abusayeed Saifullah

- Ph.D., Washington University in St. Louis (2014)
- Former assistant professor at Missouri S&T

Research interests: Internet of Things, low-power wide-area networks, cyber-physical systems, real-time systems, embedded systems, distributed and parallel computing



Suzan Arslanturk

- Ph.D., Oakland University (2015)
- Former assistant professor at Ozyegin University
- Worked as a health care research analyst

Research interests: medical informatics and analytics, machine learning and pattern recognition, descriptive and predictive modeling, probabilistic graphical models

| RESEARCH |

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.)

\$500,000 NSF grant for development of innovative techniques to ensure the secure execution of large-scale scientific workflows in distributed computing environments (PI: Shiyong Lu, Ph.D.)

Developed KDM, a big data modeling tool for Cassandra, which has over 3,000 registered users, representing over 200 universities and companies in more than 64 countries across five continents

NSF-funded project titled "Modelling Caribou Migrations and Traditional Hunting Strategies in a Virtual World Simulation" examines the impact of human occupation on Caribou migration in Alaska using Artificial Intelligence and Game Programming methods (PI: Robert Reynolds, Ph.D.)

"The Sound of Seizures: Audio-triggered seizure detection," which proposes a method of identifying and capturing seizure-specific sounds to reduce respiratory risks in epilepsy patients, won \$75,000 at the 2017 Antiepileptic Drug and Device Trials Conference (Co-PI: Ming Dong, Ph.D.)

\$500,000 from NSF for "SSE: Development of a High-Performance Parallel Gibbs Ensemble Monte Carlo Simulation Engine" to enhance computational efficiency of molecular simulations (Co-PI: Loren Schwiebert, Ph.D.)

| AWARDS |

Professor Vaclav Rajlich, Ph.D., received the 2017 Distinguished Service Award from the IEEE Technical Council on Software Engineering

Professor Weisong Shi, Ph.D., selected as an ACM Distinguished Member

Ph.D. student Tayebah Bahreini won the Best Poster Award at the Michigan Celebration of Women in Computing ("Placement of Multi-Component Services in Edge Systems")

Lena Mashayekhy received the IEEE Technical Committee on Scalable Computing Outstanding Dissertation Award ("Resource Management in Cloud and Big Data Systems")

Ph.D. student Aaron Willcock received an Honorable Mention for the NSF Graduate Research Fellowship Program

| 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

| NEW RESEARCH FUNDING |

PAST 12 MONTHS

\$3.9 million

National Science Foundation

\$1.8 million

U.S. Department of Defense

\$200,000

Michigan Health Endowment Fund

Whitman College

Founded in 1882, Whitman College is a highly selective private, residential liberal arts and sciences 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. Embracing the distinctive geography and cultures of the Pacific Northwest and the Walla Walla Valley, our students develop capacities to analyze, interpret, criticize, communicate and engage allowing them to succeed in a rapidly changing, technological, multicultural world.

Computer science within the liberal arts

While its roots are in mathematics, science, and technology, computer science offers its own approaches to addressing complex problems. Computer science students at Whitman College grow to understand the power of computers and algorithms, their limitations, and their relationships with the natural sciences, social sciences, and humanities. The liberal arts setting provides a natural home for studying computer science and its interconnectedness with the modern world.

History

Computer science courses have been offered at Whitman since the 1970s. However, thanks to a major gift from Microsoft and other sources in 2014, the college was able to allow for greater offerings 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.

Faculty

Janet Davis earned her B.S. in computer science at Harvey Mudd College and her M.S. and Ph.D. at the University of Washington. She joined Whitman in 2015 after nine years of teaching at Grinnell College. Her research area is human-computer interaction, focusing on value sensitive design, participatory design, and persuasive technology. Her most recent scholarly publication is "Don't say that! An analysis of persuasive systems in the wild," with Emma Twersky '16.

Andy Exley earned his B.A. in computer science at Carleton College and his M.S. and Ph.D. at the University of Minnesota. Before defending his dissertation and joining Whitman in 2016, he taught as an instructor at U. Minnesota, Carleton, and St. Catherine University. His research is in natural language processing; his dissertation was titled, *Parsing Sentences With, uh, With Speech Repairs*. His current interests include sentiment analysis across languages and cultures.

John Stratton earned his B.S. M.S., and Ph.D. in computer engineering at the University of Illinois, Urbana-Champaign. Before joining Whitman in 2016, he served as a visiting assistant professor at Colgate University and Knox College. His research addresses software performance optimization through application case studies, architectural studies, and tool development. His publications include "Locality-Centric Thread Scheduling for Bulk-synchronous Programming Models on CPU Architectures", a best paper nominee at the 2015 International Symposium on Code Generation and Optimization.

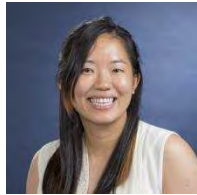
Computer Science Department Worcester Polytechnic Institute

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

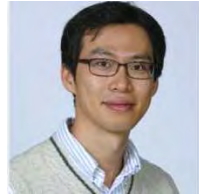
New Tenured/Tenure-Track Faculty Hires (and Previous Position)



Loris Fichera
post-doc Vanderbilt



Tian Guo
Research Prof WPI



Kyumin Lee
Asst Prof Utah St



Gillian Smith
Asst Prof Northeastern



Jing Xiao
Professor UNCC

Department Highlights

- Hired four additional full-time teaching faculty: Joshua Cuneo (Instructor), Hugh Lauer (Teaching Prof), Rodica Neamtu (Assoc Teaching Prof), and Douglas Selent (Asst Teaching Prof).
- Prof Craig Shue was awarded a National Science Foundation CAREER Award for his work on “Transforming residential networks into security assets.” He is the latest of five faculty recipients in the department.
- Prof Yanhua Li was awarded a National Science Foundation (CISE) Research Initiation Initiative (CRII) Award for his work on “CityLines: Designing urban hub-and-spoke transportation system.”
- WPI’s Robotics Engineering program was awarded the inaugural ABET Innovation Award for developing and implementing the first ABET-accredited undergraduate Robotics Engineering program in the United States, thereby serving as a model for RBE programs at other institutions.
- As part of a White House Symposium, SRI reported results from their \$3.5M evaluation of Prof Neil Hefferman’s ASSISTments intervention showing it caused students to learn 75% more on a standardized test of math achievement, compared to what they would have learned in a typical school year.
- WPI was ranked as the third-best Computer Science program by College Factual in 2016.

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 28 tenured/tenure-track faculty (2/3 currently have external funding) with an additional 8 full-time teaching faculty.
- The department has over 700 (roughly 1/6 of WPI) undergraduate majors. Between Computer Science, IMGD, RBE and BCB over 1000 undergraduates pursue computing-related degrees. The department has roughly 130 Computer Science graduate students and there are 450 graduate students pursuing computing-related degrees.
- WPI Computer Science sponsored twelve students to attend last year’s Grace Hopper Conference.

Institutional News

- The National Academy of Engineering presented the 2016 Bernard M. Gordon Prize to WPI for the “WPI Plan.” This prestigious award recognizes innovation in engineering and technology education.
- In 2017 WPI had a significant increase to 43% (up from 34% in 2016) for females in the first-year class.

Research Highlights

New Initiatives

- Collaborative Research: Engaged Student Learning: Re-conceptualizing and Evaluating a Core Computer Science Course for Active Learning and STEM Student Success - \$81,308
- Autonomous Aerial Vehicles for Force Health Protections Response - \$59,2000
- Hazard SEES: Social and Physical Sensing Enabled Decision Support for Disaster Managements and Response - \$1,975,000 (NSF) \$787,500 (WSU)
- Managing Dementia through a Multisensory Smart Phone Application to Support Aging in Place - \$168,375
- Center for Continuous Cybersecurity Education and Training (C3ET) in West Ohio - \$541,294

Recognition

- [OCWiC 2017 Conference](#) - Undergraduate Poster Award for Research into Gender Based Violence - Goonmeet Bajaj (BS student)
- [Google Summer of Code 2017](#) - Estimating the Empirical Cluster Tree
- WWW2017 Outstanding Reviewer Award - Matthew Piekenbrock (MS student)

Undergraduate

- Research Experience for Undergraduates (REU) Summer 2017 - CyberSecurity research

Student Highlights

Events and Conferences

- Sent 14 students to the 2017 Ohio Women in Computing Conference
- Sent 7 students to the 2017 CRA-W Graduate Cohort Workshop
- Sent 3 teams to the 2017 Regional Association for Computing Machinery (ACM) Student Programming Contest
- Cybersecurity Student Club came in first at the Dayton Security Summit X Packetwars Cyber Challenge
- Cybersecurity Student Club attended Cyber Defense Competition

Degrees Awarded 2016 -2017

- 87 Bachelor of Science
- 22 Bachelor of Arts
- 131 Masters
- 9 Ph.D.

Organizational News

Centers

- ONEIL Center for Research Communicatrion - wright.edu/ONEIL

New Program Development

- Bachelor of Science in Information Technology and Cybersecurity

New Program

- Undergraduate Cyber Security Certificate Program

Awards

- Dr Derek Doran Awarded 2016 - 2017 University President's Award for Early Career Achievement

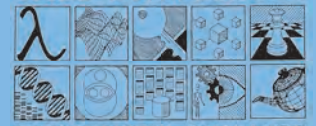


DEPARTMENT OF COMPUTER SCIENCE

YALE UNIVERSITY

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

YALE UNIVERSITY



COMPUTER SCIENCE

New Faculty Hires:



Marynel Vázquez

Assistant Professor of
Computer Science
(joining in 2018)
*Human-Robot and
Human-Computer Interaction*



Dragomir Radev

Bartlett Giamatti Professor of
Computer Science
January 2017
Natural Language Processing



John Lafferty

Professor of Statistics and Data
Science and of Computer Science
July 2017
Statistical Machine Learning

Research Highlights:

- Professor Brian Scassellati directs the NSF **Expedition-in-Computing** Project on **Socially Assistive Robotics** which is testing robots in homes that help provide therapy for children with autism spectrum disorder. With funding from ONR, Professor Scassellati's Social Robotics Lab is also building robots that work safely side-by-side with humans to perform collaborative assembly tasks like building furniture.
- Professor Zhong Shao is the Yale PI on the new five-year, 10 million dollar NSF **Expedition-in-Computing** Project on the **Science of Deep Specification** where he directs the research on certified operating systems.
- Yale team led by Professor Zhong Shao unveiled CertiKOS, the world's first certified operating system that runs on multicore processors and shields against cyber attacks, a milestone that the experts say could lead to a new generation of reliable and secure system software. The OSDI'16 paper on CertiKOS has been invited to appear as a Research Highlight article in CACM.
- Professor Mahesh Balakrishnan's paper on "Black-box concurrent data structures for NUMA architectures" is one of the two "Best Papers" at ACM ASPLOS 2017.
- Professor Y. Richard Yang is a Yale PI on the new ten-year, 80 million dollar research program initiated by the US Army Research Laboratory (ARL) and the UK Ministry of Defence (MoD). The inter-disciplinary project will investigate the basic principles and techniques to realize distributed analytics for an end vision of 'distributed coalition intelligence. Professor Yang is also the Yale PI of the new ExaScale Science project, in collaboration with CalTech, to develop fundamental principles and techniques to enable exa-scale data science projects such as LHC.
- The Graphics Group, co-led by Professors Dorsey and Rushmeier will be presenting three papers at the upcoming Eurographics Workshop on Graphics and Cultural Heritage, including work on a video generator, an automatic classification of stone weathering, and a sketching system for historic sites.
- Professor Smita Krishnaswamy's Lab developed a method for imputation of single-cell RNA-sequencing data called MAGIC, which is now under review in *Science*. Her lab also developed the PHATE visualization for biological data which emphasizes transitions and progressions rather than clusters. This method is already being widely used.

Other Highlights:

- Recent Yale PhD graduates and postdocs secured tenure track faculty positions: Henny Admoni (CMU Robotics Institute), Ronghui Gu (Columbia CS), Brad Hayes (UC Boudler CS), Jan Hoffmann (CMU CS), and Chien-Ming Huang (JHU CS).
- Professor Daniel Spielman elected to the National Academy of Sciences; Professor Steven Zucker elected as a Fellow of the Royal Society of Canada; Professor Holly Rushmeier elected as a Fellow of ACM; Professor Vladimir Rokhlin elected as a Fellow of AAAS.
- Professors Mahesh Balakrishnan and Minlan Yu receive VMware Early-Career Faculty Grants.
- Assistant Professor Ruzica Piskac receives NSF Career award.
- Assistant Professor Mariana Raykova receives a Google Faculty Research Award and is also awarded the Bard College, John and Samuel Bard Award in Medicine and Science.
- Professor Julie Dorsey received \$100K in seed-stage funding from the Yale Entrepreneurial Institute (YEI) Innovation Fund for her development of a computerized graphics and media design system; the system was featured live in Microsoft's recent Windows and Devices Keynotes.

Student Numbers and Growth:

- Computer Science is now one of the top-5 majors at Yale. In AY 2016-2017, 82 Bachelor's, 31 Master's, and 6 Ph.D.'s were awarded.
- Joint Yale-Harvard CS50 (CPSC100) in its 3rd year with 216 undergraduate students enrolled with an increasing number of graduate students taking the course. 2016 CS50 fair (CPSC100) showcased CS50 students' final projects to Yale students, faculty and staff. Included 75 project groups, 117 students.
- Code Haven, an undergraduate student organization that brings Yale students into New Haven schools, received Google's IngniteCS funding.
- Two Yale CS majors receive 2017 Yale Entrepreneurial Institute (YEI) Fellowships; Brahm Gardner (YC '17, Computer Science & Mathematics) and Andre Monteiro (YC '18, Computer Science)
- Four Yale teams compete in ACM Programming contest hosted by Manhattan College; three teams finished in the top ten and Yale 1 team won first place for the fastest solved problem.
- Two CS majors, Jay Hou (YC'17) and Tyler Dohrn (YC'18), selected for the Experiencing HCP for Undergraduates Program at SC16.
- Valerie Chen (YC'20) received the 2017 NCWIT Collegiate Award, sponsored by Hewlett Packard Enterprise and Qualcomm.

Organizational News:

- Yale CS is slated for significant growth in the next few years. FAS Deans have committed two Malone endowed chairs and five new faculty slots for academic year 2017-2018.