



ILLINOIS COMPUTER SCIENCE

IMPACT

REPORT

AT THE
FOREFRONT
— OF
COMPUTING
INNOVATION

THE GRAINGER COLLEGE OF ENGINEERING

FY 23



AT THE FOREFRONT OF COMPUTING INNOVATION

This past year, Illinois Computer Science faculty and students demonstrated once again why we are one of the world's pre-eminent research and education programs. While you can peruse these pages to see just how impactful our work is, I'll point out a few highlights.

With support from both federal agencies and private partners, CS faculty are leading major new research activities that are developing technologies to enhance semiconductor chip making, improve communication with non-verbal individuals, prevent cyber threats, assist young children with speech and language processing challenges, and accelerate young people's performance in science, technology, engineering and math (STEM) fields.

We launched additional CS + X degrees in education, bioengineering, and physics, bringing the total number of these innovative blended degree programs on our campus to 16. A cohort of 20 students enrolled in our new professional master's degree program (MCS) in Chicago, providing a unique opportunity for the students to connect with and contribute to the Chicago tech community. This new degree program is located at the University of Illinois System's Discovery Partners Institute.

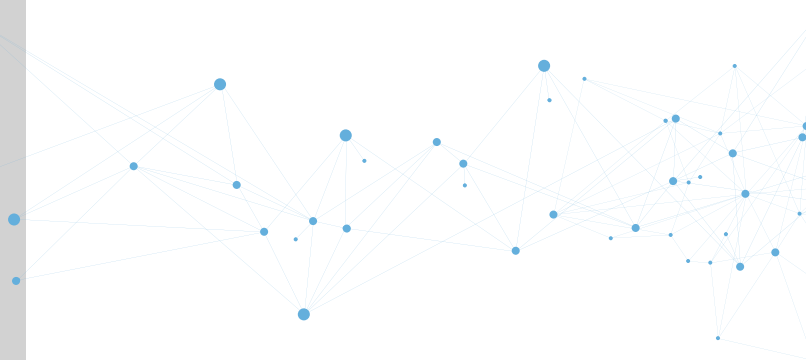
Our faculty continue to innovate the way CS education is delivered to ensure students can reach their learning potential. And our Broadening Participation in Computing program supports a representative, inclusive and caring community of engaged students, faculty and staff.

While this is hardly all of the achievements from last year, the stories included here are representative of the excellence we continue to deliver here at Illinois CS.

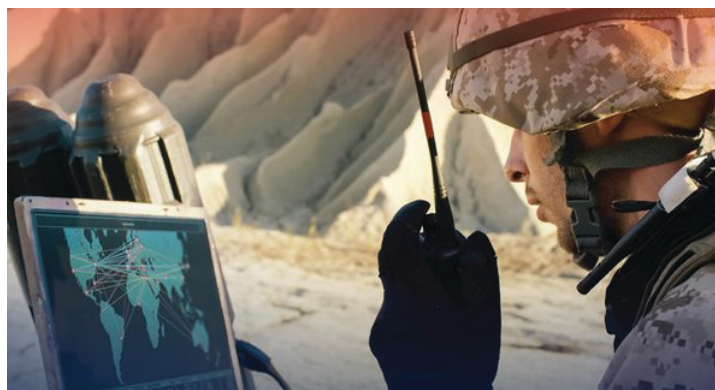
Nancy Amato
Nancy M. Amato (PhD CS '95)
Abel Bliss Professor
Department Head

ILLINOIS COMPUTER SCIENCE

GROUNDBREAKING *research*



ADVANCING AI ON THE BATTLEFIELD



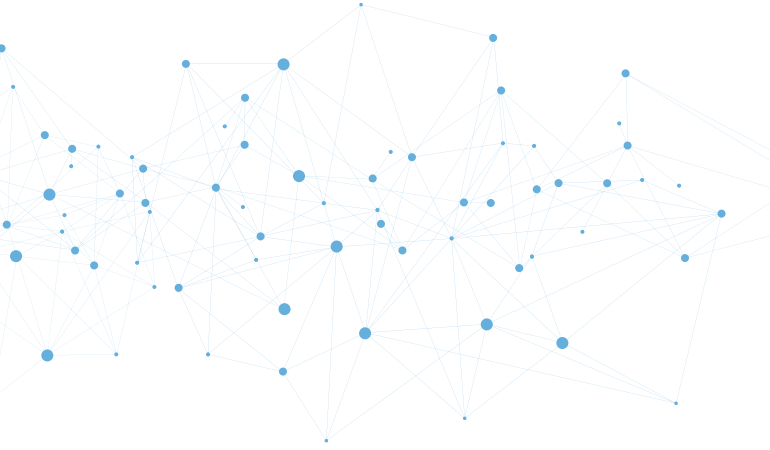
The Alliance for Internet of Battlefield Things Research on Evolving Intelligent Goal-driven Networks (IoBT REIGN), which is led by CS professor **Tarek Abdelzaher** and funded by the U.S. Army Research



Laboratory, received a 5-year contract extension worth up to \$25.5 million in additional funding. Since it was funded in 2017, the IoBT REIGN researchers from Illinois, UCLA, USC, the University of Massachusetts Amherst, and SRI International have improved the efficiency of various intelligent computations by orders of magnitude; built analytical foundations for understanding the limits of resiliency; and improved AI algorithms that optimize on the

battlefield. In the next five years, the researchers will build on those advances and pursue new areas, particularly scaling, coordination, and massively increased heterogeneity of devices. The researchers will also explore multimodal sensing, where diverse sensors overcome adversaries' deception tactics, while advancing adaptation to rapidly changing, dynamic environments.

This report highlights the innovations of our students, faculty, and alumni, and it recognizes their contributions to computing. See how the Illinois Computer Science community is leading the way.



AI TECHNOLOGY TO ENHANCE HUMAN DECISION MAKING AND CHILDREN'S SPEECH AND LANGUAGE PROCESSING

CS professor **Heng Ji** is contributing to two multi-institutional AI-related projects—the \$20 million NSF-funded AI Institute for Exceptional Education and the \$12 million DARPA-funded Aligned Moral Language Models with Interpretable and Graph-based Knowledge (ALIGN). The AI Institute is developing systems that can help identify young children at risk for speech and language processing challenges. Ji will help construct a semantic knowledge graph from a document that a child is



reading and select knowledge points to generate questions and answers automatically, which will help the child's reading comprehension. She will also develop an AI Screener for early identification of potential speech and/or language disorders and the AI Orchestrator, which will act as a virtual teaching assistant by providing students with ability-based interventions.

With the ALIGN project, she is helping to create trustworthy decision-making algorithms that allow humans to determine the best course of action in times of crisis. For example, the team's AI-inspired algorithms will create a knowledge graph for first responders trying to determine which individuals to rescue first in a natural disaster or mass casualty event.

NEW DISTRIBUTED COMPUTING TECHNOLOGY TO BRING MORE ENERGY-EFFICIENT DATA CENTERS



CS professor **Josep Torrellas** is the lead investigator for the new ACE Center for Evolvable Computing, which is developing high-performance, energy-efficient, and secure distributed computing technology required for a hierarchy of compute centers that span from the edge to geo-distributed mega-datacenters—and ultimately strengthen the semiconductor industry. Funded by a \$31.5 million grant from the Joint University Microelectronics Program 2.0 (JUMP 2.0), the center is one of seven multi-university research centers nationwide that is supported by the Semiconductor Research Corporation and DARPA. Each compute center will contain a myriad of heterogeneous hardware accelerators, and tasks of unprecedentedly small granularity will ship computation across the globe to where data are. Other ACE researchers include CS faculty **Tarek Abdelzاهر** and **Charith Mendis**, as well as faculty from 11 other top-tier universities.

The Illinois Computer Science Impact Report is produced annually to showcase the innovations of our faculty, students and our alumni and inspires our partners and peers in the field of computer science. Read more at: cs.illinois.edu/news.

Contact us: communications@cs.illinois.edu

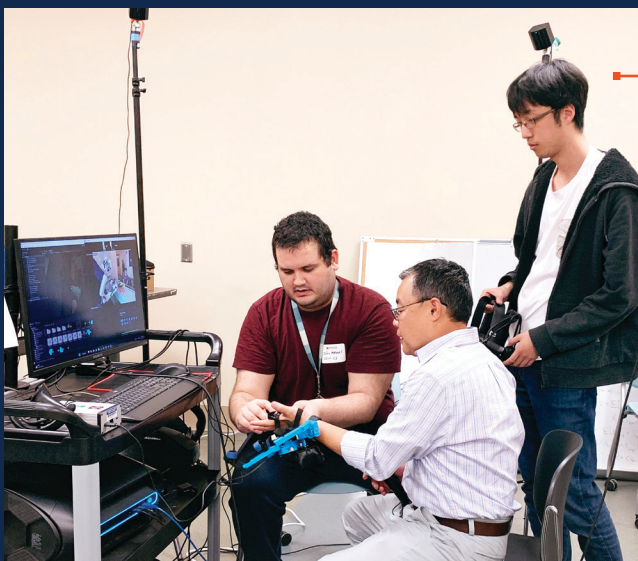


CAMPUS INVESTS IN NEW CENTER FOR IMMERSIVE COMPUTING

The U of I's leadership in the nascent field of immersive computing gained momentum when the campus provided \$4 million in seed funding through its Investment for Growth Program. CS faculty **Sarita Adve**, **Klara Nahrstedt**, and **Eric Shaffer**, along with CS affiliate professor **Romit Roy Choudhury**, are leading IMMERSE, the Center for Immersive Computing, which brings together existing research, education and infrastructure activities. The researchers will seamlessly integrate the physical world with virtual reality (VR), augmented reality (AR), mixed reality (MR), extended reality (XR), the metaverse, spatial computing, and digital twins. IMMERSE has the potential to transform medicine, science, education, industrial design, manufacturing, maintenance, arts, retail, advertising, and social interactions.



L to R: Sarita Adve, Klara Nahrstedt, Eric Shaffer, Romit Roy Choudhury



PROTECTING MISSION-CRITICAL SYSTEMS FROM CYBER THREATS

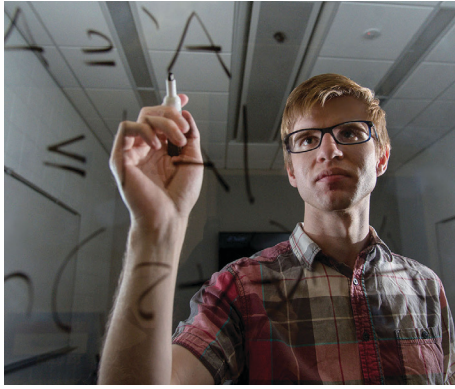


Left to right: Bo Li, Gang Wang

CS professors **Bo Li** and **Gang Wang** are part of an NSF-funded \$20 million AI Institute for Agent-based Cyber Threat Intelligence and Operation (ACTION) led by researchers at the University of California, Santa Barbara. This research center, which includes 11 universities, aims to revolutionize the way mission-critical systems are protected against sophisticated cyber threats. The center will focus on developing intelligent agents that use complex knowledge representation, logic reasoning, and learning to identify and respond to breaches in a timely and scalable fashion. Li will deploy a previously developed learning-reasoning framework to cyber-security tasks and provide security and robustness guarantees. Wang will enhance the cyber-defense life cycle with the proposed AI-stack, which involves incorporating AI reasoning and knowledge-based inference into the key cyber defense tasks such as vulnerability assessment, threat detection, attribution, and response and recovery.

"Considering our history of innovation and our place in previous transformative eras of computing, it's not surprising that we are taking this step toward immersive computing. As we've developed IMMERSE, though, what was surprising to me was the scale at which this has been happening here already and for how long."

- Sarita Adve, Computer Science Professor

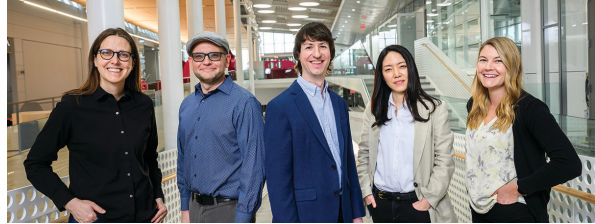


CS GRADUATE STUDENT'S PAPER LEAPFROGS YEARS OF MATHEMATICAL RESEARCH

CS graduate student **Zander Kelley** and a collaborator from UCLA produced groundbreaking results that stunned the mathematics world. For more than 80 years, mathematicians have been inching forward on the triplet problem, which involves forming a collection of numbers where no three of them are evenly spaced (3, 7, 8, 11 is not allowed, but 3, 7, 8, 14 is). The challenge comes when trying to make the collection as large as possible. Their paper, Strong Bonds for 3-Progressions, gives a mathematical formula for the maximum size of a collection without evenly spaced triplets. World-renowned mathematician Terence Tao described their results as having leapfrogged previous solutions for the triplet problem.



U OF I LEADING NATIONAL AI RESEARCH INSTITUTE THAT IS ADVANCING STEM LEARNING



U of I researchers are leading a \$20 million NSF-funded AI research endeavor focused on developing learning technologies that accelerate young people's achievement in science, technology, engineering and math (STEM). The multi-institutional Inclusive and Intelligent Technologies for Education Institute (INVITE) aims to broaden engagement with and learning of STEM among historically marginalized groups at the pre-kindergarten-12th-grade levels by investigating emerging AI techniques and building intelligent technologies. More than 96,000 youths across 24 school districts will be engaged in enhanced STEM learning using INVITE platforms designed to promote persistence, academic resilience and collaboration—qualities that are critical to academic achievement. CS faculty participants include **Chad Lewis** (director), **Cheng-Xiang Zhai**, and **Colleen Lewis**.

AMAZON-ILLINOIS ENDEAVOR REVOLUTIONIZING AI CONVERSATIONAL SYSTEMS

A new center on AI for Interactive Conversational Experiences (AICE) is developing intelligent conversational systems that demonstrate contextual understanding and emotional intelligence and will allow personalization, while having the ability to interpret non-verbal communication. AICE researchers will initially focus on building a knowledge grounded trustworthy system that provides a truthful natural language model. This will show where its knowledge comes from and attempt to eliminate reliance on any fake information or disinformation, a capability that is lacking in the existing natural language generation techniques. CS faculty involved in the project include **Heng Ji** (director), **Julia Hockenmaier**, and **Derek Hoiem**, as well as affiliate professors **Lav Varshney** and **R. Srikant**.

EIGHT FACULTY EARN NSF EARLY-CAREER AWARDS



Top Row L to R: Saurabh Gupta, Ling Ren, Nan Jiang, Gagandeep Singh

Bottom Row L to R: Dakshita Khurana, Reyhaneh Jabbarvand, Deepak Vasisht, Colleen Lewis

NSF CAREER awards support exceptional junior faculty members' research and education activities with six-figure funding over five years. The CS faculty CAREER recipients and their funded projects are: **Saurabh Gupta** (CS affiliate) is conducting research that will improve robots' abilities to navigate and interact with objects in unstructured environments. **Ling Ren** is establishing an algorithmic foundation for blockchains that is rooted in decades of research on Byzantine fault-tolerant consensus. **Nan Jiang** is developing novel methods to advance reinforcement learning (RL) by providing a deep theoretical foundation for offline RL in real-life applications such as robotics, adaptive medical treatment, and online recommendation systems. **Gagandeep Singh** is introducing new methods and systems to accelerate the adoption of formal verification within the deep neural network development and deployment pipelines for applications in agriculture, computing, finance, and healthcare. **Dakshita Khurana**, whose project should have broad applications in the design of simpler, secure, and trustless cryptosystems, is addressing unresolved issues related to cryptographic proofs. **Reyhaneh Jabbarvand** is leveraging recent advancements in AI and machine learning to enhance the detection and root causes of software bugs through neural testing. **Deepak Vasisht**, who envisions someday capturing real-time analytics from satellite imagery, is developing new architectures and systems to solve the delay between an image captured by a satellite and its access by the end users—a process that currently takes several hours to a full day. **Colleen Lewis** is working to improve the teaching and learning of CS by addressing whether and how high school and college students learn from physical versus written representations of programming concepts.



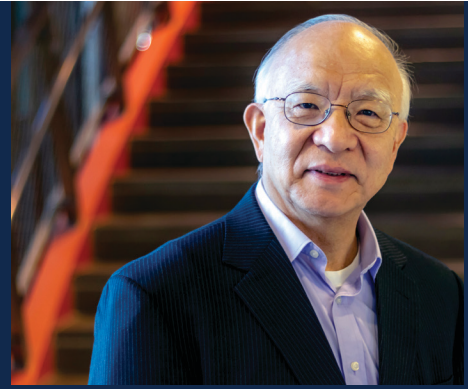
Derek Hoem's 2012 paper, "Indoor segmentation and support inference from RGBD images," which has been cited more than 4,600 times, won the 2022 Koenderink Prize—a test of time award for impactful papers. Hoem was also elected an IEEE Fellow for his contributions to computer vision.



Tandy Warnow, who formally mentors five CS faculty, received the 2023 University of Illinois Campus Award for Excellence in Faculty Mentoring and **Bill Gropp**, director of NCSA, received the Illinois Campus Award for Outstanding Faculty Leadership.



Grigore Rosu was elected a 2022 Fellow of the American Association for the Advancement of Science. He is a pioneer in the field of runtime verification, an analysis framework that can verify a computing system as it executes to increase software quality.



JIAWEI HAN WAS NAMED A FELLOW OF THE ROYAL SOCIETY OF CANADA

Jiawei Han was named a Fellow of the Royal Society of Canada—the highest honor an individual can achieve in the arts, social sciences, and sciences. Also, Han and his co-authors of the 2011 paper "PathSim: Meta path-based top-K similarity search in heterogeneous information networks," received a Test of Time award from the 48th annual International Conference on Very Large Databases.

IIT BOMBAY DISTINGUISHED ALUMNI AWARD RECIPIENTS



Sarita and **Vikram Adve** received the IIT Bombay Distinguished Alumni awards from their undergraduate alma mater—a school where the couple met. They both went on to earn doctorates from the University of Wisconsin and eventually joined the Illinois CS faculty.

125+

WORLD-CLASS FACULTY

12

NEW FACULTY

DEPTH & BREADTH FACULTY BY RESEARCH AREA

(Counts recognize faculty doing research across multiple areas.)

Architecture, Compilers, and Parallel Computing	16
Artificial Intelligence	31
Bioinformatics and Computational Biology	12
Computers and Education	23
Data and Information Systems	15
Interactive Computing	12
Programming Languages, Formal Methods, and Software Engineering	19
Scientific Computing	11
Security and Privacy	16
Systems and Networking	19
Theory and Algorithms	18
New CS Instructional Area	24

21,719 Degrees CONFERRED TO 20,026 ALUMNI

BS 12,079	MS 7,924	PhD 1,716
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#5

Computer Science Undergraduate and Graduate Ranking, *U.S. News & World Report*

GRADUATE SPECIALTY PROGRAMS – *U.S. News & World Report*

#5

Theory

#3

Programing Languages

#5

Artificial Intelligence

#4

Systems

MORE NSF FUNDING

Illinois remains one of the top NSF Funding recipients in the nation

ENDOWMENT

\$23.22 MILLION*

\$858,276 INCOME

Funding student awards, scholarships, and fellowships; faculty chairs, and professorships; lectureships, research, and general operations.

*Market value.

NEW GIFTS & COMMITMENTS

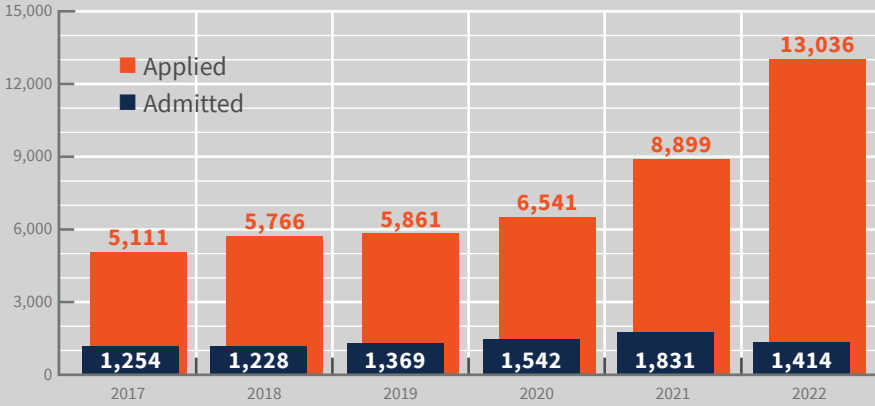
\$13.2 MILLION

\$13.1 MILLION

in New Current Use Gifts and Commitments
\$59,448

in New Endowment Gifts and Commitments

CS ENGINEERING & BLENDED DEGREES – UNPRECEDENTED UNDERGRADUATE DEMAND, TALENT, & DIVERSITY



ENROLLED FRESHMEN, FALL 2022

- 28 States (and Puerto Rico), 20 Countries Represented
- 34.2 Incoming ACT (Composite Average)
- 34.65% Male / 65.35% Female
- CS Engineering only: 40.64% Male / 59.36% Female
- CS + X Admission Rate: 25.7%
- CS Engineering Admission Rate: 6.7%

ILLINOIS ADMISSIONS RATES

CAMPUS: 43.7% (TOTAL), 34.7% (FIRST-CHOICE MAJOR) / ENGINEERING: 22.3%

Average Starting Salaries for Illinois CS Graduates who Graduated during 2021-2022

BS: \$131,720

MS: \$139,170

PhD: \$144,909

FALL 2022 FEMALE ENROLLMENT ON CAMPUS

29.3% Undergraduate

23.6% Graduate



FALL 2022 ENROLLMENTS

UNDERGRADUATE CS ENGINEERING & BLENDED DEGREES

Computer Science	1,296
Mathematics & Computer Science*	272
Statistics & Computer Science*	308
CS + Advertising*	39
CS + Animal Sciences*	4
CS + Anthropology*	17
CS + Astronomy*	50
CS + Chemistry*	24
CS + Crop Sciences*	15
CS + Economics*	156
CS + Geography and GIS*	15
CS + Linguistics*	103
CS + Music*	32
CS + Philosophy*	81
Total Undergraduate Enrollment	2,435

*Math + CS, Stats + CS, and CS + X students are admitted by partner Colleges/Programs

GRADUATE DEGREES

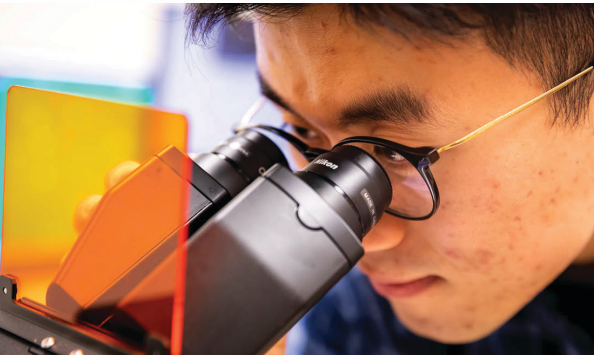
PhD	492
MS and BS-MS	156
MS Bioinformatics	8
On-campus MCS and BS-MCS	617
Online MCS / MCS is Data Science	1,368
iCAN	33
Non-Degree	8
Total Graduate Enrollment	2,678

STATE OF ILLINOIS SUPPORT – FY22

\$25.8 MILLION

RESEARCH EXPENDITURES – FY22

\$34.4 MILLION



**THREE NEW CS + X DEGREES
ADDED TO UNDERGRADUATE
DEGREE LINEUP**

The CS + X degrees, many the first of their kind nationwide, offer a solid grounding in computer science with training in the arts or sciences that allow students to bring computational skills to fields where they are increasingly in demand. The **CS + Education** degree offers undergraduate students with two concentrations—secondary education and learning sciences. Students began enrolling in this major in the fall 2023 semester. The **CS + Bioengineering** and **CS + Physics** undergraduate degrees are the first collaboration within the Grainger College of Engineering. The first class of these two majors will begin in fall 2024.



**U OF I LAUNCHES X + DS
UNDERGRADUATE DEGREE
IN DATA SCIENCE**

CS professors are among the campus faculty contributing to the four new undergraduate degree programs through the **X + Data Science** major, which blends instruction in data science with accountancy, finance, astronomy, and information sciences. The first cohort of students began in fall 2023.

**CS FACULTY PART OF NEW
PARTNERSHIP WITH
BRAZILIAN INSTITUTE**



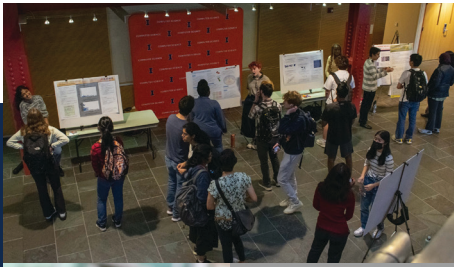
U of I, through the Grainger College of Engineering and CS Department, launched a new partnership with the Insper Institute of Education and Research in Brazil, which includes joint research projects, curriculum development in computing and data science, sabbatical experiences for Insper faculty, postdoc experiences for future Insper faculty, fellowships for PhD students and professional master’s students, and summer research internships for Insper undergraduate students. Twenty Insper and Illinois faculty are addressing research topics ranging from an investigation into improving student learning in project-based CS courses to data-driven rendering -- where one makes realistic images and sequences of images by compositing real data assets in various ways. Illinois faculty will also help design Insper’s computing curriculum.



Dignitaries at The Grainger College of Engineering Chicago Launch Event (left to right) Rashid Bashir, Dean of Grainger Engineering; Timothy Killeen, President of the University of Illinois System; Robert Jones, Chancellor of the University of Illinois Urbana-Champaign; Illinois Computer Science Department Head Nancy M. Amato, and Samir Mayekar, Deputy Mayor for Neighborhood & Economic Development, city of Chicago

**CS LAUNCHES PROFESSIONAL
MASTER OF CS DEGREE IN CHICAGO**

A cohort of 20 students enrolled in the new U of I professional master of CS degree program in Chicago, providing a unique opportunity for the students to make connections with and contribute to the Chicago tech community. The new degree program is being offered at the Discovery Partners Institute, a University of Illinois System endeavor that conducts tech workforce development, applied R&D, and business development.



Left to right: Elahe Soltanaghaj, Eisha Peyyeti

CS STARS MAKING AN IMPACT

The CS Student Ambassadors/Research Scholars (CS STARS) hosted the annual Trick or Research event, where faculty presented their work to curious undergraduates looking to pursue research. The STARS include nearly 40 undergraduate students who work with faculty and fellows from the Broadening Participation in Computing effort.



LEARNING TO ACE THE TECH INTERVIEW



Emmanuel Gallegos

CS students helped facilitate a Bloomberg-sponsored workshop that drew 20 students from the Black, Indigenous, and Latinx in Tech student organization – B[U]ILT. The Bloomberg representatives trained the students how to ace technical interviews.



CS faculty **Eric Shaffer** and **Mariana Silva** shared their computer and software knowledge with 11 students from the Campus Middle School for Girls through a new outreach effort designed to broaden participation in computing. During the fall 2022 semester, the girls designed their own video game with development help from students in Shaffer’s CS 415 Game Time course.



GIRLS WHO CODE STRIVE TOGETHER AWARD

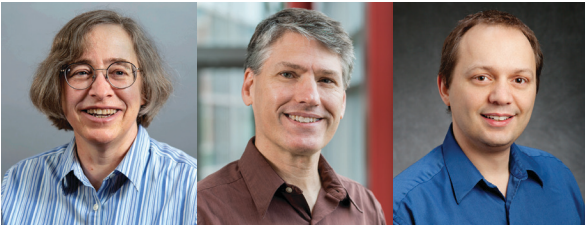
The local chapter of Girls Who Code won the Strive Together award from the U of I Women’s Resource Center for making significant contributions towards gender equity. The chapter includes more than 20 facilitators and student leaders who help about 40 young women students find their own inspiration in computing.

EXCELLENCE IN TEACHING COMPUTER SCIENCE



INSTRUCTIONAL AREA SUPPORTS ENHANCED FACULTY LEARNING

The CS Department established the new Instructional Area, which enhances faculty members' ability to teach subjects most effectively. Twenty-three faculty create and share innovative and inclusive educational practices, visualizations, technologies, and transformative learning experiences. To share ideas and best practices, Instructional Area faculty host the annual summer teaching workshop with colleagues nationwide.



Left to right: Margaret Fleck, Eric Shaffer, Lawrence Angrave

ILLINOIS CS EDUCATORS SHINE AT ANNUAL SUMMER TEACHING WORKSHOP



Left to right: Abdussalam Alawini, Yael Gertner, Brad Solomon

Illinois CS hosted its second and third annual summer teaching workshops in 2022 and 2023, bringing together college instructors who teach computer science to discuss best practices, challenge the status quo, propose new directions, and present surprising or preliminary results. Since it was started in 2020, the virtual workshop has benefited more than 400 instructors from across the country.

CORPORATE RELATIONS / PHILANTHROPY



AFTER HOURS URBANA + CHICAGO EVENTS

Nineteen companies and about 2,000 CS students enjoyed the casual atmosphere and professional networking opportunities at the fall 2022 After Hours recruiting event at Siebel Center for Computer Science. In the spring 2023 semester, CS and ECE students gathered for a similar recruiting event, Corporate Connections in Chicago: After Hours, held at the U of I's Discovery Partners Institute. In addition to meeting with recruiters in a reception-like setting, the students got a glimpse of the tech scene in Chicago.



Left to right: Bruce Ge, Josep Torrellas

GIFTS IN ACTION: ALUMNUS GE HONORS HIS ADVISOR TORRELLAS' INFLUENCE WITH DONATION

Alumnus **Bruce Ge**, founder of data-driven job advertising platform Talroo, recently made a second \$100,000 gift to CS professor **Josep Torrellas'** i-acoma research group. Ge earned his master's degree under the supervision of Torrellas. The funding will primarily be used to fund research assistantships for new graduate students.



PROFESSOR'S STARTUP RECEIVES SERIES A FUNDING

Yongjoo Park has transitioned from CTO to chief scientist at start-up company Keebo after the firm that he helped found received \$10.5 million in Series A funding. Keebo is a fully automated warehouse optimizer whose data learning technology is a turn-key cloud solution that automates and accelerates analytics efforts and delivers significant time and cost savings.

“There is an energy here from the very top, as our department head, Nancy Amato, implores us to find the impact in our work. And at the University of Illinois Urbana-Champaign we have resources at our disposal across the university to do so.”

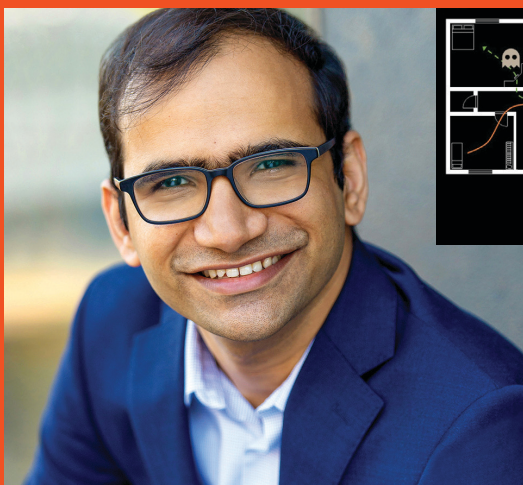
– Yongjoo Park, Computer Science Professor

XU'S FRUITFUL VMWARE COLLABORATION



Illinois CS professor Tianyin Xu (top) and the Sieve research team (left to right): Xudong Sun, Tyler Gu, Wenqing Luo, Aishwarya Ganesan and Ramnatthan Alagappan.”

Tianyin Xu received a \$250,000 research gift from VMWare to continue addressing the reliability of large-scale system operations. Xu and his group, in collaboration with VMWare, have produced Sieve, the first automatic and generalizable reliability-testing tool for cluster-management controllers. He also received a \$229,000 research grant from the Illinois-IBM Discovery Accelerator Institute related to this work.



VASISHT'S TECHNOLOGY THWARTS HIGH-TECH SNOOPING

Professor **Deepak Vasisht** and his research group, in collaboration with startup company Hedron Life Source, have developed technology that guards against the rogue use of health sensors. RF-Protect uses a simple smart reflector design to spoof fake trajectories against malicious eavesdroppers who use FMCW radars to monitor private activities through walls and obstacles. They describe their approach and technology in the paper, “RF-Protect: Wireless Ghosts to Protect Against Device-Free Human Tracking,” which they presented at ACM SIGCOMM.



2023 CELEBRATION OF EXCELLENCE HIGHLIGHTS POWERFUL ILLINOIS CS COMMUNITY

About 90 Illinois CS undergraduate students, 45 graduate students, 25 faculty members, seven staff members and five alumni earned awards and came together, in-person, to celebrate each other. In total, approximately 400 guests attended the event



CS + Philosophy sophomore **Max Fan** was one of three U of I students who received a 2023 Barry M. Goldwater Scholarship, which recognizes students' potential to contribute to the advancement of research in the natural sciences, mathematics or engineering.



Left to right: Gargi Balasubramaniam, Emmanuel Gallegos, Ryan Marten, Samraj Moorjani, Xueqing Wu

CS graduate students **Gargi Balasubramaniam**, **Emmanuel Gallegos**, **Ryan Marten**, **Samraj Moorjani**, and **Xueqing Wu** were selected to the 2023 class of Siebel Scholars. **Federico Cifuentes-Urtubey** and **Samuil Donchev** received the Outstanding Graduate Development Award from the Society of Hispanic Professional Engineers



Left to right: Federico Cifuentes-Urtubey, Samuil Donchev



Alumnus **Vivek Nair** (CS BS, MCS '21) received a 2022 Hertz fellowship, which is providing \$250,000 in funding over the next five years to continue his pursuit of cybersecurity research as a PhD candidate at University of California, Berkeley.



Steve Chen (CS attended), **Jawed Karim** (BS CS '04), and **Jerry Fiddler** (BS LAS '74, MS CS '77) were inducted into the Grainger College of Engineering Hall of Fame in 2022. Chen and Karim were recognized for their entrepreneurial spirit as co-founders of YouTube. Fiddler was honored for his contributions to real-time embedded software products including those used in the Mars Pathfinder and Stardust projects.



Steven Ashby (CS MS '85, PhD '88) and **Ping Fu** were among the seven recipients of the 2023 Grainger Engineering Alumni Award for Distinguished Service. Ashby is the director of the Department of Energy's Pacific Northwest National Laboratory and a widely recognized leader in computational science and strong advocate for investing in and inspiring our next generation of talent. A best-selling author, Fu (CS MS '90) is a venture and angel investor who co-founded Geomagic, a leading US software company that pioneers 3D technologies that fundamentally change the way products are designed and manufactured around the world.



Alumnus and NASA operations project engineer **Ken Jacobs** (BS CS '84) played a key role on the Space Launch System (SLS), the world's most powerful rocket and primary launch vehicle of the Artemis Moon landing program. The first SLS launch occurred on November 16, 2022, with the uncrewed Artemis 1 vehicle.



Charles William "Bill" Gear, a prominent computer scientist known for his work in numerical analysis, died in March 2023 at the age of 87. A member of the National Academy of Engineering, Gear was a longtime CS faculty member and former department head.



CS hosted the 10th annual HackIllinois, a weekend's worth of computing-focused competitions, games, and sessions that provide a unique opportunity for the hundreds of university students nationwide who attended.

Son Nguyen (BS, MS CS '14), the founder and CEO of Dat Bike, raised \$8 million in funding for his Vietnam-based start-up, which makes electric motorbikes.



WE SOLVE PROBLEMS *first*

WE'RE TACKLING TOUGH CHALLENGES – developing the technologies to enhance semiconductor chip making, improve communication with non-verbal individuals, prevent cyber threats, assist young children with speech and language processing challenges, and accelerate young people's performance in STEM fields. We've launched even more blended undergraduate degree programs and a new professional master's degree program in Chicago. And we're Broadening Participation in Computing by providing accessible programs for students, helping form a sense of community and purpose. Illinois Computer Science students, faculty, staff and alumni are at the forefront of computing innovation.

BLENDED DEGREE PARTNERS

**College of Agricultural, Consumer,
& Environmental Sciences**

College of Education

College of Fine and Applied Arts

Gies College of Business

iSchool

College of Liberal Arts & Sciences

College of Media



**The Grainger College
of Engineering**

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

**University of Illinois Urbana-Champaign
Department of Computer Science
Thomas M. Siebel Center for Computer Science
201 N. Goodwin Avenue, Urbana, IL 61801-2302**



cs.illinois.edu