ILLINOIS COMPUTER SCIENCE

IMPACT

FY21 REPORT

SHAPING THE FUTURE OF **COMPUTING**

SHAPING THE FUTURE OF COMPUTING

Last year was incredible in many ways. Twenty-four new faculty joined the department; Illinois took leadership of two of the seven new National AI Institutes announced by the NSF in 2020; The Grainger College of Engineering helped launch one of only three Quantum Leap Challenge Institutes in the country; the first students completed the Illinois Computing Accelerator for Non-specialists (iCAN)—a bridge program into CS for college graduates; we opened up capacity in our minor for all students on campus; and we launched the CS CARES committee to support the Illinois CS community—the first in an academic department.

Even more impressive: Illinois CS students, faculty, staff, and alumni were able to accomplish these things—and many more—during a difficult pandemic year. I want to thank everyone for their hard work, empathy, patience, and dedication to excellence as we continued to set new research and education milestones while striving to make computing's remarkable opportunities available to everyone.

Nancy Amato

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

ILLINOIS COMPUTER SCIENCE

GROUNDBREAKING RESEARCH

THIS REPORT HIGHLIGHTS THE INNOVATIONS OF OUR STUDENTS, FACULTY, AND ALUMNI, AND IT RECOGNIZES THEIR CONTRIBUTIONS TO THE FIELD OF COMPUTER SCIENCE. SEE HOW THE ILLINOIS COMPUTER SCIENCE COMMUNITY IS LEADING THE WAY.


ILLINOIS LEADS TWO NEW NATIONAL AI INSTITUTES

Clockwise from top left: Vikram Adve, Huimin Zhao, Saurabh Sinha, Jian Peng

The **NSF** and the **U.S. Department of Agriculture's (USDA's) National Institute of Food and Agriculture (NIFA)** awarded the U of I two of the seven new national AI institutes announced in 2020, with each to receive about $20 million over five years. **Vikram Adve**, the Donald B. Gillies Professor in Computer Science, leads the AI Institute for Future Agricultural Resilience, Management, and Sustainability (AIFARMS), which includes 12 other CS faculty and affiliates. **Huimin Zhao**, the Steven L. Miller Chair in Chemical Engineering leads the AI Institute for Molecular Discovery, Synthetic Strategy, and Manufacturing (Molecule Maker Lab Institute). CS professors **Jian Peng** and **Saurabh Sinha** are leading two of that institute's four research thrusts, with three additional CS faculty and affiliates also participating.

STRONG FOUNDATION FOR AI IN CONSTRUCTION
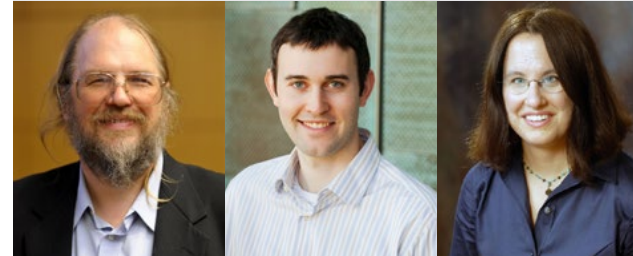
Left to right: David A. Forsyth, Derek Hoiem, Julia Hockenmaier

A team led by Illinois CEE professor **Mani Golparvar-Fard** received support from the NSF and the Discovery Partners Institute to plan a National Institute for AI in Construction. U of I researchers, including CS faculty **David A. Forsyth**, **Derek Hoiem**, and **Julia Hockenmaier**, have joined with colleagues from Carnegie Mellon University and more than 40 industry partners for a series of planning workshops. They are identifying the key areas for the highest impact of AI in the design, construction, and operation of the built environment. The first workshop focused on understanding the construction industry's needs, with two more workshops planned.

RECONSTRUCT RAISES $17M IN SERIES B FUNDING ROUND

Reconstruct Inc., co-founded by professor **Derek Hoiem**, raised $17.3 million in a Series B round led by **Nemetschek Group**, which is a global leader in construction software, along with several other architecture, engineering, and construction companies. A graduate of the U of I Research Park's **EnterpriseWorks** incubator, Reconstruct is now a leader in AI-powered remote construction management solutions, bringing construction project stakeholders more efficient workflows.

## DIGITAL AGRICULTURE EFFORTS BOOSTED BY FUNDING, NEW TESTBED, AND RECOGNITION

Left to right: Katherine Driggs-Campbell, Girish Chowdhary

A group of Illinois CS and ECE researchers led by professor **Katherine Driggs-Campbell** received a $1 million grant from USDA NIFA to develop software tools to make programming fleets of agricultural robots (agbots) easier, while providing tools for runtime monitoring. Their research will be tested in the **Illinois Autonomous Farm (IAF)**, which is directed by Illinois ABE and CS professor **Girish Chowdhary**. IAF supports researchers from across campus, including those affiliated with **AIFARMS**, the **Center for Digital Agriculture**, and the **College of ACES**. IAF's testbed includes TerraSentia agbots designed by Chowdhary's startup, **EarthSense**. The company was recognized with the 2020 Innovation Award from the Association of University Research Parks, and it was featured in *The New York Times.*

GROUNDBREAKING RESEARCH

QUANTUM COMPUTING

ILLINOIS A KEY PLAYER IN NEW QUANTUM INITIATIVES
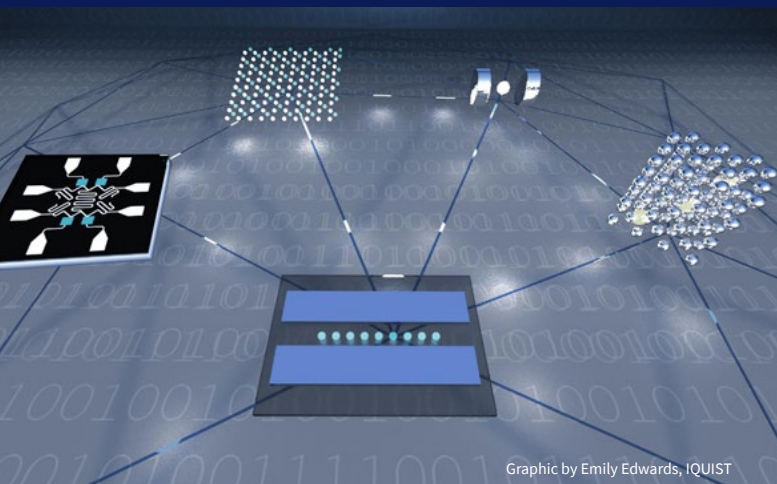
Graphic by Emily Edwards, IQUIST

Thanks to a five-year $25 million award from the NSF, The Grainger College of Engineering's **Illinois Quantum Information Science and Technology Center (IQUIST)** has launched the **Quantum Leap Challenge Institute for Hybrid Quantum Architectures and Networks (HQAN)**. One of only three such institutes in the country, HQAN spans three Midwest research powerhouses, all members of the **Chicago Quantum Exchange**: the University of Illinois, the University of Chicago, and the University of Wisconsin. IQUIST is also co-leading a program with the University of Chicago to support quantum education workforce development across the country. Called **Q2Work**, the program is supported by a three-year, $750,000 NSF grant. Meanwhile, **Duality**, the nation's first quantum accelerator program, plans to help up to 10 quantum startups per year. The U of I is a founding partner of the effort, which is led by the **University of Chicago's Polsky Center for Entrepreneurship and Innovation** and the Chicago Quantum Exchange.

ILLINOIS CS BUILDS QUANTUM FACULTY

After completing a postdoctoral fellowship at the prestigious Simons Institute at University of California, Berkeley, **Makrand Sinha** will join the faculty in August 2023. Sinha's primary research interests are focused on the foundations of quantum and classical computation and optimization. Illinois CS continues to actively recruit faculty who are focused on quantum research, thanks to a $750,000 **Quantum Computing & Information Science (QCIS) Faculty Fellows** grant from the NSF.

### NEW CENTER LEVERAGES HIGH-PERFORMANCE COMPUTING TO ADVANCE HYPERSONIC PROPULSION

As a part of its Advanced Simulation and Computing Program, the U.S. Department of Energy's National Nuclear Security Administration is funding a new **Center for Exascale-enabled Scramjet Design (CEESD)** at the U of I for $17 million over five years. "High-performance computing is enabling for our design goals, and the center will, at the same time, provide a unique educational experience," said CEESD co-director and Illinois CS professor **William D. Gropp**. "The CS students will be trained to work effectively with computational scientists, who are facing challenging prediction goals. Likewise, computational scientists will learn CS approaches and opportunities within the team structure."

ILLINOIS FACULTY ARE LEADING THE FIELD

In the past year, **Nancy M. Amato** and **William D. Gropp** were elected to lead key professional societies in CS. Here's a partial list of leadership roles held by Illinois CS faculty:

Sarita Adve
Past Chair, ACM SIGARCH

Nancy M. Amato
Chair, CRA; Chair, AAAS Section on Information, Computing, and Communications

Arindam Banerjee
President, AISTATS Foundation

William D. Gropp
President, IEEE CS (2022); Past Chair, SIAG/SC

Julia Hockenmaier
President, ACL SIGNLL; Past Chair, NAACL

Klara Nahrstedt
Past Chair, ACM SIGMM

Kris Hauser
Past Chair, IEEE/RAS Technical Committee on Algorithms for Planning and Control of Robot Motion

Lui Sha
Past Chair, IEEE CS Technical Committee on Real-Time Systems

Paris Smaragdis
Past Chair, IEEE Audio and Acoustics Signal Processing Technical Committee; Past Chair, IEEE Machine Learning for Signal Processing Technical Committee

Josep Torrellas
Chair of IEEE CS Technical Committee on Computer Architecture
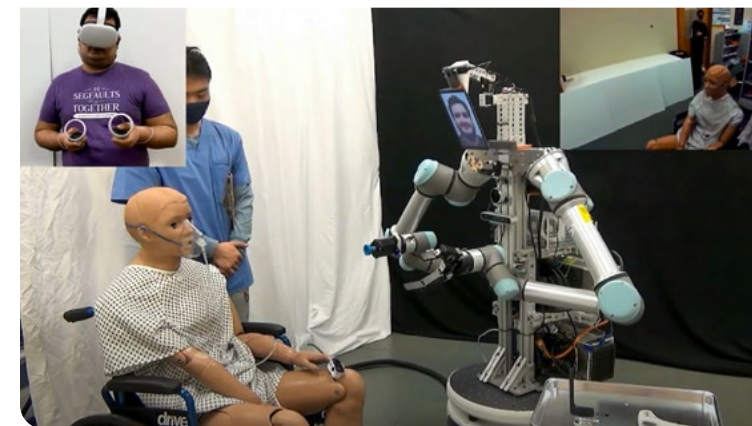
TRINA NAMED SEMIFINALIST FOR $10M ANA AVATAR XPRIZE CHALLENGE

Professor **Kris Hauser's** team of graduate students is working towards a more connected world through a **Tele-Robotic Intelligent Nursing Assistant (TRINA)**, which allows the operator to see, hear, navigate and interact with a remote environment. TRINA has been chosen as 1 of 38 semifinalists for the $10 million **ANA Avatar XPRIZE**, a global incentive competition, validating it as one of the world's preeminent efforts in the use of avatars. "With a bit of training, almost anyone can drive the robot around, manipulate objects, and communicate with others as if they were actually there," said Hauser.

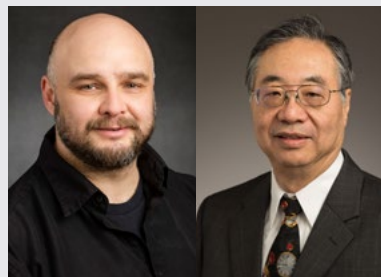## PENG A PART OF MULTI-INSTITUTIONAL TEAM TO INVESTIGATE PARKINSON'S DISEASE

Professor **Jian Peng** is part of a team of researchers from five institutions that received a $8.95 million grant from the **Aligning Science Across Parkinson's (ASAP)** initiative to use stem cells to study how risk factors accumulate and interact to drive Parkinson's disease. The **Michael J. Fox Foundation for Parkinson's Research** issued the grant for the project as ASAP's implementation partner. Peng's expertise in machine learning will help identify patient subgroups, reveal new disease mechanisms, and forecast therapeutics.

NEW MODEL PROVIDES UP-TO-DATE MEDICAL GUIDELINE FOR SEVERELY ILL COVID-19 PATIENTS

Collaborating with a research team that included fellow Illinois CS professor **Grigore Rosu**, **Lui Sha** developed a medical best practice guidance system for severely ill COVID-19 patients. This effort uses up-to-date medical guidelines expressed in precise software models, verified by the K Framework, to provide proper patient care for the disease and help eliminate preventable medical errors. "We want to help doctors care for their patients, which is especially difficult when a physician does not treat a complex disease in high frequency," Sha said. "This is like being a good driver, but then going to a new city only for someone to ask you to pick the best route."

Left to right: Grigore Rosu, Lui Sha

"For the nurses and physicians utilizing the model, the K framework isn't visible," Rosu said. "But what the K Framework does is eliminate their concern that the program might not do what the medical guidelines provide."
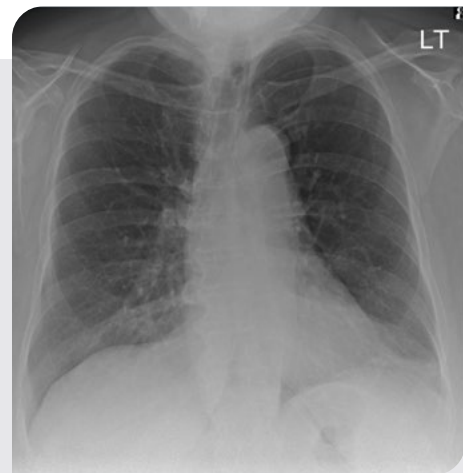
AI AND MACHINE LEARNING BOLSTER BIOMEDICAL IMAGING TO PREDICT COVID-19 SEVERITY

Professors **Sanmi Koyejo** and **David A. Forsyth** teamed with **Ayis Pyros**, MD – a radiologist for **DuPage Medical Group** – to create a tool that uses AI to evaluate an X-ray and account for six health variables. This tool uses biomedical imaging to account for diabetes and other chronic conditions to more accurately predict the severity of a patient's COVID-19 case. "The idea is to support the decision making of experts, and to help prevent any potential blind spots," Koyejo said. "The machine has its own blind spots, of course, but our hope is that this combination produces a better, more consistent approach."

MACHINE LEARNING MODEL PREDICTS COVID-19 SPREAD AND MITIGATION STRATEGIES

Illinois CS PhD student **Sayantani Basu's** growing curiosity in healthcare led her to realize that applying computer science to medicine could benefit people all over the world. This vision then came to fruition during the COVID-19 pandemic, as she poured her efforts into a thesis guided by adviser **Roy H. Campbell**. Their efforts produced a Long Short-Term Memory (LSTM) based model trained on cumulative COVID-19 cases and deaths. "We have our open-source code set up, meaning that people are free to use it. Our primary goal is for people to integrate it with their systems to help understand the pandemic and their options to confront it," Basu said.

Left to right: Sayantani Basu, Roy H. Campbell

KRAVITZ BUILDS A COMMUNITY WITHOUT A CLASSROOM

In 20 years as a professor at Illinois CS, **Robin Kravets** never had to adjust her teaching methods like she did in the spring of 2020. Kravets explored ways to connect with undergraduate and graduate students as they continued their experience despite the COVID-19 pandemic forcing classes at the University of Illinois Urbana-Champaign to go remote. Her efforts did not go unnoticed, as impressed students even started a Reddit thread. "I mean, that's the first time I've ever been on Reddit – especially for a positive reason! It was fun, but the whole point was about trying to engage the students," said Kravets.

STUDENT EVENTS AND ORGANIZATIONS CREATE MEANINGFUL DIGITAL EXPERIENCES

After the COVID-19 pandemic hit, PhD student **Colleen Heinemann** did something she never envisioned she would do as a co-leader of the local chapter of the student-run organization, **Girls Who Code**. She tore down the students' work before they could show it to others. Despite the harsh reality of all student organizations and events turning to a digital structure, Heinemann and others did what they could to salvage the situation. Girls Who Code came back online to bring the group of students, from third through 12th grade, together again. **HackIllinois** welcomed participants from 30 different states and 10 different countries to its week-long digital event. And professor **Elsa Gunter** helped with Grainger Engineering's **"What It Takes" Virtual Summer Camp** that reached nearly 500 high school students.
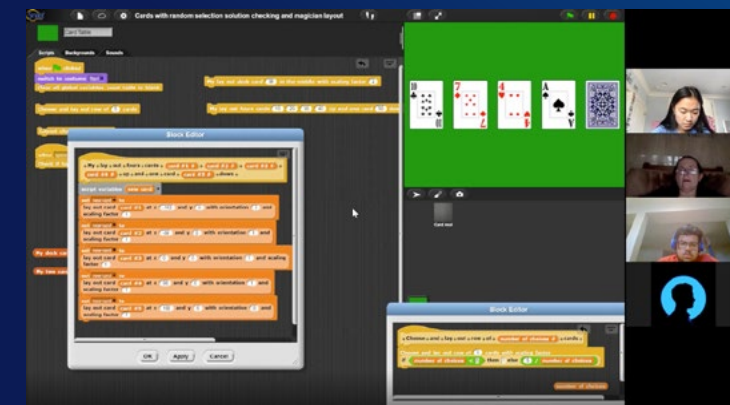
Elsa Gunter led this virtual CS session with two student lab assistants during the second week of Grainger Engineering's "What it Takes" Virtual Summer Camp.

LAUNCHING A CAREER IN THE MIDDLE OF A PANDEMIC

Left to right: Deepak Kumar, Yu-Chen Grace Yen, Kari George

Both in industry and academia, recent Illinois CS graduates had to adapt to a new career amidst unprecedented circumstances. The COVID-19 pandemic disrupted the traditional route most graduates take as they embark upon the next step of their lives. The **2020 Computing Innovation Fellowships** were designed to help recent PhD graduates, including **Deepak Kumar**, **Yu-Chen Grace Yen**, and **Kari George**, launch their careers in uncertain economic times. Meanwhile, Bloomberg detailed the paths four graduates of the **"Class of COVID"** took as they began careers in industry. "It's 100% weird to start a full-time job at my parent's house," **Surabhi Sonali** said.

110+
WORLD-CLASS FACULTY

24 *NEW* FACULTY

DEPTH & BREADTH
FACULTY BY RESEARCH AREA

(Counts recognize faculty doing research across multiple areas.)

Architecture, Compilers, and Parallel Computing	16
Artificial Intelligence	29
Bioinformatics and Computational Biology	10
Computers and Education	17
Data and Information Systems	12
Interactive Computing	11
Programming Languages, Formal Methods, and Software Engineering	18
Scientific Computing	10
Security and Privacy	16
Systems and Networking	16
Theory and Algorithms	19

17,374 Degrees CONFERRED TO 15,962 ALUMNI

BS 10,458	MS 5,389	PhD 1,527

18 ACM Fellows

20 IEEE Fellows

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

44 NSF CAREER Awards

20 Endowed Chairs and Professorships

9 Sloan Research Fellows

MORE NSF FUNDING
Illinois was awarded more NSF Funding than any other University in **7 of the last 10 years**

ENDOWMENT
$21 MILLION*
$851,660 INCOME
Funds student awards, scholarships, and fellowships; faculty chairs and professorships; lectureships; research; and general operations.
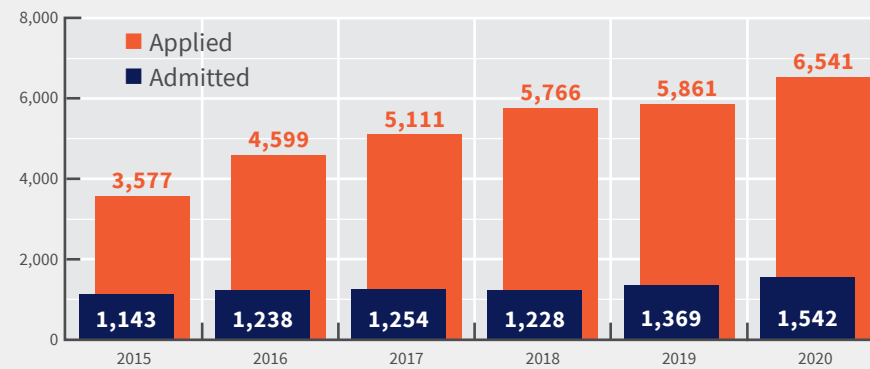
*Market value.

NEW GIFTS & COMMITMENTS
$3.67 MILLION
$3.1 MILLION in New Current Use Gifts and Commitments

$558,683 in New Endowment Gifts and Commitments

UNPRECEDENTED UNDERGRADUATE DEMAND, TALENT, & DIVERSITY

Year	Applied	Admitted
2015	3,577	1,143
2016	4,599	1,238
2017	5,111	1,254
2018	5,766	1,228
2019	5,861	1,369
2020	6,541	1,542

ENROLLED FRESHMEN, FALL 2020
— **25** States, **14** Countries Represented
— **34.3** Incoming ACT (Composite Average)
— **72.7%** Male / **27.1%** Female

Average Starting Salaries for Illinois CS Graduates who Graduated during 2019-2020
BS: $112,975 **MS: $123,975** **PhD: $137,700**

FALL 2020 FEMALE ENROLLMENT

26.3% Undergraduate Female Enrollment

19.7% Graduate Female Enrollment

FALL 2020 ENROLLMENTS

UNDERGRADUATE

Computer Science	1,057
Mathematics & Computer Science	261
Statistics & Computer Science	316
CS + Advertising	30
CS + Anthropology	19
CS + Astronomy	39
CS + Chemistry	31
CS + Crop Sciences	12
CS + Economics	72
CS + Geography and GIS	10
CS + Linguistics	88
CS + Music	19
CS + Philosophy	28
Total Undergraduate Enrollment	1,982

GRADUATE

Master of Computer Science (MCS)	170
Online MCS / MCS in Data Science	1189
Master's	91
Master's in Bioinformatics	9
PhD	422
Non-degree	16
Total Graduate Enrollment	1,897

STATE OF ILLINOIS SUPPORT – FY20
$21.3 MILLION

RESEARCH EXPENDITURES – FY20
$32.3 MILLION

Director of Onramp Programs Tiffani Willams leads the iCAN program.

ICAN DELIVERS ON ITS PROMISE TO EXPAND EXPOSURE TO COMPUTING

With 13 new students accepted to the Fall 2021 cohort, the **Illinois Computing Accelerator for Non-Specialists (iCAN)** is building off the promise it made a year ago. iCAN's mission is to broaden participation in computing through an accelerated program for non-computing college graduates.

iCAN

The new cohort includes seven female students and six male students who come from a variety of diverse backgrounds. Meanwhile, two graduates from the first cohort have accepted offers to join the Master of Computer Science program.

QUALIFIED CS MAJORS, MINORS ARE NOW GUARANTEED ADMISSION TO ONLINE MCS

Illinois CS is providing a pathway for any undergraduate on campus to receive a CS minor en route to an advanced degree. Undergraduates who complete a CS major or a CS minor and who graduate with a qualifying GPA are now guaranteed admission to the Online MCS or MCS in Data Science. This, coupled with a commitment to provide capacity in core CS courses to accommodate all students who are interested in pursuing a CS minor, enables all prospective U of I students to be confident that they will be able to enroll in CS courses at Illinois and, at the same time, start on a path towards advanced training in computing.

CS CERTIFICATION PROGRAM HELPS ILLINOIS HIGH SCHOOL TEACHERS LEVEL UP

Two years ago, professor **Craig Zilles** began designing a program in collaboration with colleagues from the College of Education that will offer a Teaching Endorsement in Computer Science to high school teachers. That certification program launched in 2021, shortly after Illinois Governor J.B. Pritzker signed an education bill requiring high schools to offer at least one CS course. "What makes a program like this relevant is the great interest in teaching computer science skills at the high school level. Currently the workforce can't match that interest, though," Zilles said. "We have an opportunity ahead to provide a solution."

Left to right: Nancy M. Amato, Colleen M. Lewis

NEW CIC GRANT HELPS DEVELOP PROGRAMS TO SUPPORT UNDERGRADUATE WOMEN

In May, Illinois CS was awarded a two-year grant worth $929,500 from the **Center for Inclusive Computing (CIC)** at Northeastern University to further enhance Broadening Participation in Computing efforts. Through the CIC Grant, Illinois CS will support staffing, training, and programs that ensure women are fully represented and thriving in undergraduate computing. "The CIC grant provides helpful bootstrapping for us as we put some more pieces in place," said professor **Colleen M. Lewis**. "This financial support equates to a match that, when struck, will allow for even more creativity based upon the beliefs we already hold up high."

"The goal of the project (CIC) is to increase by 10 percent the number of undergraduate women graduating with computing degrees. But, more generally, if we can make this department more inclusive and welcoming to women, then we will make it better for everyone." – Department Head Nancy M. Amato

KOYEJO HONORED WITH 2021 SKIP ELLIS EARLY CAREER AWARD

Sanmi Koyejo

Clarence "Skip" Ellis

Professor **Sanmi Koyejo** has been selected as the 2021 Skip Ellis Early Career Award recipient by the Computer Research Association's Committee on **Widening Participation in Computing Research (CRA-WP)**. This award honors the late Illinois CS alumnus **Clarence "Skip" Ellis (CS PhD '69)**, who was the first African-American to earn a PhD in computer science and the first African-American to be elected a Fellow of the ACM. Koyejo has been the recipient of several awards, including a Sloan Research Fellowship, a Kavli Fellowship, an IJCAI early career spotlight, and a trainee award from the Organization for Human Brain Mapping. He serves on the board of Black in AI.

CS CARES COMMITTEE ENSURES AN EXPERIENCE REPRESENTING THE BEST OF ILLINOIS CS

The new **Illinois CS CARES** committee started in April as the first CARES committee in an academic department at any university, dedicated to upholding the CS Values and Code of Conduct throughout the entirety of the department on a consistent basis. Eleven selected committee members serve as the best of what Illinois CS is and will continue to be. To stand up for what is right, to hear others' complaints and to react accordingly takes people dedicated to accountability. "The CS CARES committee sends a clear signal to all involved that the department cares about, and takes seriously, our values," said professor **Sarita Adve**, CS CARES Committee Chair.
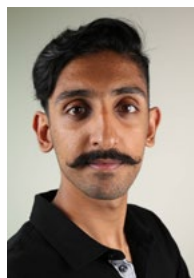
GRAINGER ENGINEERING AND IBM LAUNCH NEW DISCOVERY ACCELERATOR INSTITUTE
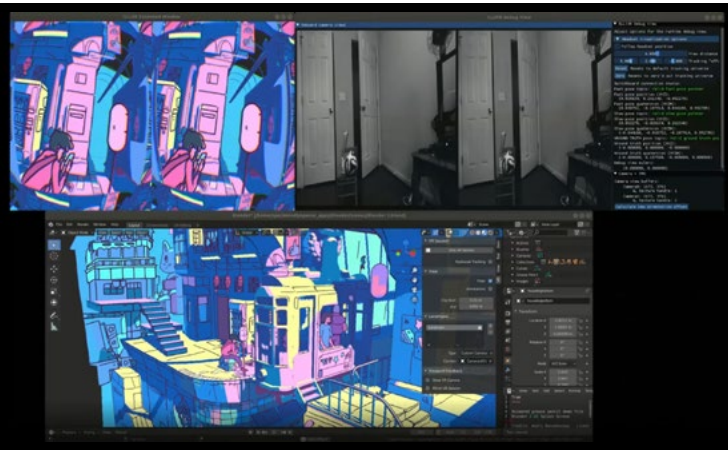
FIRST-OF-ITS KIND EXTENDED REALITY TESTBED TO SPEED VIRTUAL AND AUGMENTED REALITY INNOVATION

Sarita Adve

Illinois researchers have launched an open-source testbed and, alongside key industry partners, a new consortium for the broad extended reality (XR) community to come together to accelerate progress in XR systems research, development, and benchmarking. Designed by a team led by professor **Sarita Adve** and CS PhD student **Muhammad Huzaifa**, the **Illinois Extended Reality (ILLIXR) Testbed** is a fully open-source, end-to-end XR system. Computer architects, system designers, compiler writers, and algorithm and application developers can now use ILLIXR to research, develop, and benchmark their ideas in the context of a complete XR system, and see the impact on end-user experience. *Join the ILLIXR Consortium: illixr.org.*

Muhammad Huzaif

A new collaboration between IBM and The Grainger College of Engineering is designed to increase access to technology education and skill development, and to combine the strengths of academia and the industrial sector to spur breakthroughs in emerging areas of technology. The IBM-Illinois Discovery Accelerator Institute will be funded by a ten-year planned research investment from IBM and UIUC, complemented by a major new building project which will house research activities in quantum information, high-performance computing, hybrid cloud and networked environments with support from the State of Illinois, bringing total investments to more than $200 million.
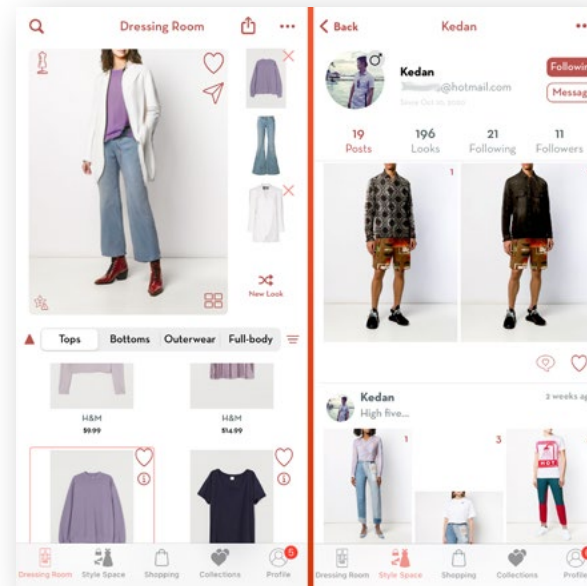
KEDAN LI'S REVERY.AI TRANSFORMING THE FASHION E-COMMERCE EXPERIENCE

Kedan Li

Illinois CS PhD student **Kedan Li** is the CEO of **Revery.ai**, a startup devoted to transforming the online fashion industry by bringing the dressing room experience online at scale. The idea originated in collaboration with professor **David A. Forsyth**, a renowned computer vision expert. Li's team created the first solution to leverage existing catalog images to process over a million garments weekly. Recently, the company received seed funding from **Y Combinator**, and its virtual dressing room product is live on several fashion e-commerce platforms, including Asian e-retailer **Zalora Group**.

BLACK ENTREPRENEUR GETS VALUABLE HELP FROM APPLE

David Alston, who co-created the sneaker discovery platform **Kickstroid**, was chosen for the inaugural cohort of **Apple's Entrepreneur Camp for Black Founders and Developers**. The program allows developers to take their existing app experience to the next level through one-on-one code-level guidance from Apple experts and engineers, and mentorship, inspiration, and insights from top Apple leaders. The Kickstroid app helps sneaker enthusiasts discover the hottest sneaker drops, follow the latest sneaker news, and connect with sneakerheads worldwide. Alston, who recently graduated with an information systems major and a computer science minor, also served as head of outreach with the **Blacks and African Americans in Computing (BAAC)** student organization.


THE CAMPAIGN FOR ILLINOIS

The *With Illinois* campaign has focused our fundraising efforts on our most pressing needs. As the demand for an Illinois CS education grows, our alumni have answered the call to help us increase the number of scholarships and award amounts we can offer. We also received funding to directly support faculty research, another key priority.

*After the sale of his successful startup, entrepreneur **Isaac Hall (BS CS '04)** gifted some of the proceeds to establish a scholarship fund to support students with financial need and who contribute to the diversity of the student body.*

runtime verification

CS FACULTY STARTUP ATTRACTS MORE THAN $7 MILLION IN NEW FUNDING

Runtime Verification, a startup company founded by professor **Grigore Rosu**, will receive up to $2 million in **NASA's Small Business Innovation Research** funding to apply its K Framework toolset to enhance the reliability of mission-critical NASA software that experiences inconsistencies due to limitations of the C programming language. C was created with performance rather than portability in mind, so programs written and tested on desktops or workstations can experience odd behaviors when deployed on other machines or devices, such as a spacecraft, aircraft, rover or even a car. The company also raised $5.3 million in a funding round led by **IOSG Ventures**, which will accelerate the development of tools designed to enhance the safety, reliability, and correctness of computing systems for blockchain and embedded systems.

CELEBRATING EXCELLENCE

Over 170 of the department's amazing students, alumni, faculty, and staff were recognized during the 2020-2021 academic year with awards, scholarships, or fellowships. Many of these recognitions provide financial support thanks to generous donations from friends and alumni. Thank you for your support!
See the list at cs.illinois.edu/celebration.

Left to right: Reed Oei. Rittika Adhikari, Nathan Ju, Xiangchen Song

## FOUR CS UNDERGRADUATES EARN CRA RESEARCH RECOGNITION

Reed Oei (left) was among five students nationwide selected for a **2021 Computing Research Association (CRA) Outstanding Undergraduate Researcher** Runner-Up Award. Fellow Illinois CS students **Rittika Adhikari**, **Nathan Ju**, and **Xiangchen Song** received Honorable Mention status for the CRA Award, which recognizes undergraduate students in North American universities who show outstanding research potential in an area of computing research.

KNIGHT OF ST. PATRICK MOTIVATED TO MAKE ENGINEERING AND CS MORE INCLUSIVE

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In 2021, CS junior **Tommy Carver** was among 12 Grainger Engineering students inducted as Knights of St. Patrick, recognized
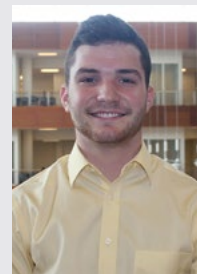
for their leadership, excellence in character, and exceptional contributions to the college and its students. Carver has worked to increase opportunities for those with little programming experience, while also encouraging male allies for gender minorities in STEM. Carver co-founded **Project Code**, an organization open to all Illinois students offering a dedicated group of mentors to help CS majors and non-majors learn to code. Working with the Society of Women in Engineers, Carver was a founding executive member of **HeforSWE**, which aims to encourage more male allies to help women achieve equality in engineering education and careers.

DEPARTMENT RECOGNIZES SIX ALUMNI FOR NOTEWORTHY ACCOMPLISHMENTS

Eileen Burbidge (BS CS '93), a partner at venture fund Passion Capital, received the CS Distinguished Alumni Achievement Award. **Keenan Crane (BS CS '06)**, a faculty member at Carnegie Mellon University, and **Lin Tan (PhD CS '09)**, the Mary Elmore New Frontiers Associate Professor at Purdue University, both received Early Career Academic Achievement Alumni Awards. **Jing-Yang Jou (MS CS '83, PhD CS '85)** president and K.T. Li Chair Professor at National Central University in Taiwan, received the Distinguished Academic Achievement Alumni Award. **Albert Lucius (BS and MS CS '09)**, an entrepreneur with global experience at several Fortune 100 companies, received the Young Alumni Achievement Award. **Mei-Chin Tsai (PhD CS '94)**, who built a successful career at Microsoft over 25 years, received the Distinguished Alumni Service Award. She and her husband established the Chan-Tsai Scholarship at Illinois CS.

Clockwise from top left: Eileen Burbidge, Keenan Crane, Lin Tan, Mei-Chin Tsai, Jing-Yang Jou, Albert Lucius

CS Mental Health Committee Members (left to right): Omar Khan, Nikash Walia, Neha Prabhu, Ananya Cleetus, Sana Madhavan, and Jade Lundy

STUDENT ORGANIZATION SHINES A LIGHT ON MENTAL HEALTH

The **Illinois Computer Science Mental Health Committee (CSMHC)** is a student organization dedicated to bringing light and cultivating conversation about mental health in tech and beyond. Programs include De-Stressing Nights, Relaxation Days, Mindfulness Mondays, guest speakers and panels, a newsletter linking to key resources, and online spaces that provide community and ongoing support. CSMHC, launched in March 2020, continued offering regular programming despite the onset of the global pandemic. This link to essential mental health resources was critical and made a real difference in many lives.

'THE COLLEGE TOUR' SHOWCASES ILLINOIS

CS senior **Mackenzie Kirkham** was one of 11 Illini who appeared in the U of I's episode of "The College Tour," a series on Amazon Prime. Kirkham conducted research as a member of the Social Research and Technology Innovation Laboratory on campus, and was a member of the Gigabit Girls, an organization designed to improve the lives of global residents.

ALUMNUS YAO WINS 2021 KYOTO PRIZE

Andrew Chi-Chih Yao (PhD CS '75) won the 2021 Kyoto Prize, a highly prestigious international award honoring those who have contributed significantly to the fields of science and technology, arts, and philosophy. He was recognized for pioneering contributions to a new theory of computation and communication and a fundamental theory for its security. The dean of the Institute for Interdisciplinary Information Sciences at Tsinghua University, Yao has developed innovative theoretical models for computation and communication that have influenced multiple fields, including security, privacy, parallel computing, big data processing, and quantum computing. Yao is a 2000 recipient of the A.M. Turing Award, considered the Nobel Prize of computing, for his groundbreaking contributions to the theory of computation.

INDUSTRY EXEC YUE WINS GRAINGER ENGINEERING ALUMNI AWARD

Drina Yue (BS EE '80, MS CS '84) was among eight Grainger Engineering graduates to win a 2021 Alumni Award for Distinguished Service. Yue was honored for outstanding leadership and contributions in the fields of telecommunications and finance. A retired executive with more than 30 years of experience on both the technical and business sides of companies like Western Union, Motorola, AT&T, and BellSouth, Yue excelled professionally at a time when tech fields were overwhelmingly dominated by men. The inventor of eight telecommunications-related patents, Yue's work has involved network design, broadband systems and mobile technologies, as well as the money-transfer and payments businesses.

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EVERY DAY.

GROUNDBREAKING RESEARCH. INNOVATIVE EDUCATION.

WE'RE TACKLING TOUGH SCIENTIFIC CHALLENGES – FROM MAKING AI MORE INTUITIVE TO USE, TO DESIGNING SCRAMJETS, UNDERSTANDING PARKINSON'S DISEASE, AND BENCHMARKING EXTENDED REALITY. AND WE'RE ENSURING THAT EVERY U OF I UNDERGRADUATE CAN CHOOSE TO COMPLETE A CS MINOR, WHILE MAKING A CS EDUCATION MORE ACCESSIBLE TO STUDENTS FROM ACROSS THE GLOBE. ILLINOIS COMPUTER SCIENCE STUDENTS, FACULTY, STAFF, AND ALUMNI ARE SHAPING THE FUTURE OF COMPUTING.

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College of Agricultural, Consumer, & Environmental Sciences

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