# COMPUTER SCIENCE & ENGINEERING

# **UC** San Diego

#### Message from the Chair

And just like that, the '21/'22 academic year is a wrap. It's been a year of transition; a year of ups and downs; and a year of maze-like challenges. Yet, our CSE community is unstoppable. I'm thankful to each and every one of you for keeping the CSE spirit alive.

This month, we held the CSE End-of-the-Year Celebration to recognize and honor our students for their achievements in research, education, leadership, and contributions to diversity. Then we held commencement ceremonies, where CSE



Sorin Lerner

students celebrated a once-in-a-lifetime moment - the triumphant achievement of their degree after years of hard work. To all graduates: Congratulations! Your perseverance has paid off, and we are excited to see what you do next.

As another year comes to a close, let us collectively take a step back and reflect on our journey here. The CSE department is 34 years old, and in the coming year, we will celebrate our 35th birthday. Our graduate program went from 30th in 1994 to 11th in 2022 in the U.S. News & World Report Graduate Rankings, and we are now ranked 4th on csrankings.org. We have over 70 faculty; over \$37M in research expenditures; over 2,000 undergraduate majors; over 1,000 graduate students; and a third of all UC San Diego undergraduates take a course in our department.

Yet, this is only the beginning. Ours is a field of endless possibilities. Let us join forces to shape the future. Imagine CSE, a world-class research hub for new horizons. Imagine CSE, a place for innovative education. Imagine CSE, a home to large interdisciplinary research centers. Imagine CSE, a hub for entrepreneurship and innovation. Imagine CSE, an inclusive community. Imagine CSE, your inclusive community. Come join us as we reimagine the future of CSE.

### Sorin Lerner, CSE Department Chair

Stay connected with CSE by following our <u>Twitter</u>, <u>Facebook</u>, <u>LinkedIn</u> and Instagram feeds. If you have news, story ideas or comments for our CSE Communications Team, please send them to <u>cse-communications@eng.ucsd.edu</u>.



### **CSE NEWS**

Vineet Bafna Plays Major Role in \$25M Cancer Grand Challenges Project

Vineet Bafna is part of a team of world-class researchers that has been awarded a fiveyear, \$25 million Cancer Grand Challenges grant to learn how the destructive genetic lesion extrachromosomal DNA (ecDNA) influences numerous cancers and to identify possible therapies. For this project, Bafna will help spearhead computational genomics analyses.

#### Leo Porter Named Distinguished Teacher

Leo Porter has received the prestigious Distinguished Teaching Award from the UC San Diego Academic Senate. Selected for his innovative methodology and commitment to excellence in teaching, Porter is one of six to receive this university-wide award.

### **Researchers Find Internet Infrastructure Susceptible to Attack**

A team of researchers, including CSE alum Alexander Gamero-Garrido, has found that about a quarter of the world's Internet users are susceptible to attack on their Internet infrastructure. Of the 75 countries surveyed, many of the at-risk nations are located in the global south. For his work, Gamero-Garrido was awarded the prestigious Ford Foundation Postdoctoral Fellowship, offered through the National Academy of Sciences.

### Laurel Riek Studies Human-Robot Teaming

With a new \$7.5 million MURI grant, Laurel Riek is leading a team of researchers to investigate how humans and robots can work together in critical environments. Riek's MURI project will explore how teams reason, coordinate, and trust, particularly regarding how teams change over time.

Grant for Deep Learning Gives Self-Driving Cars and Drones a Leg Up Rose Yu, Henrik Christensen, and Nikolay Atanasov have received an \$800,000 grant from the Department of Defense's Defense University Research Instrumentation Program (DURIP) to fund a deep learning cluster to store and process real-time sensor data from robotic vehicles and drones. The grant expands UC San Diego's deep learning infrastructure to advance autonomous cars, drones, and other applications.

### Christine Alvarado: Inaugural NCWIT Joanne McGrath Cohoon Service Award Winner

Teaching Professor Christine Alvarado, who will become the university's Associate Dean of the Division of Undergraduate Education next month, was honored recently by the National Center for Women & Information Technology (NCWIT), winning its first Joanne McGrath Cohoon Service Award.

### **Shachar Lovett Receives Simons Investigator Award**

Shachar Lovett has received a Simons Foundation Investigator award, which supports outstanding theoretical scientists in math, physics, astrophysics, and computer science. Lovett will receive \$100,000 per year over the next five years to pursue research into the interplay between structure and randomness in algorithm design.

### An Zheng Awarded Dissertation Medal

An Zheng is among seven university students selected to receive the 2022 UC San Diego Chancellor's Dissertation Medal for his work, Deep learning predicts the impact of noncoding genetic variants in human traits and diseases.

### Student Created Video Games Reveal Talent, Teamwork, and Technical Know-how

With z-values, vectors, lines of code and 3D effects, students in Geoff Voelker's popular "videogame" course, CSE 125, presented their 3D multiplayer video games in live team demonstrations on June 3.



Vineet Bafna





### Laurel Riek

### NOTEWORTHY

Christine Alvarado

Stefan Savage and Geoff Voelker were awarded the Test of Time award for their 2011 paper Click Trajectories: End-to-End Analysis of the Spam Value Chain at the IEEE Symposium on Security and Privacy.

Byung Hoon Ahn, Sean Kinzer, and Hadi Esmaeilzadeh's paper, Glimpse: Mathematical Embedding of Hardware Specification for Neural Compilation, has been selected as one of six nominees for the DAC Best Paper Award. The winner will be announced at the 59th Design Automation Conference.

Stefan Savage moderated a discussion on balancing trust and risk in computing at the 75th anniversary celebration of the Association for Computing Machinery in San Francisco.

At a Machine Learning Seminar Series, Gaurav Mahajan presented Computational-Statistical Gaps in Reinforcement Learning (with Linear Function Approximation).

Rajesh Gupta, Halicioğlu Data Science Institute director and CSE professor, spoke about the university's HVAC system on KPBS. Gupta and his colleagues began looking at how to change air circulation patterns in buildings in order to reduce the spread of airborne viruses like COVID 19.

# CSE ALUMNI

### Sameer Samat Named CSE Distinguished Alumnus

Sameer Samat was honored with a Distinguished Alumni <u>Award</u> at the 4th annual CSE Research Open House. Samat was recognized for his career accomplishments, which include two successful start-up companies and his current position with Google as Vice President of Product



Management, overseeing Android operating system and Google Play Store.

Sameer Samat (BS, 2000)

# COMMENCEMENT 2022 & AWARDS





### The Class of 2022

Over commencement weekend, amidst great pomp and circumstance and in-person celebrations, CSE department honored the graduating class of 2022. This included 572 undergraduates, 180 master's degree and 43 PhD students.

### **Ring Ceremony**

The Jacobs School of Engineering Ring Ceremony, held June 11, honored Eman Sherif with the CSE 2022 Award of Excellence for graduating undergraduates. Participants received a ring to be worn as a symbol of their commitment to standards of ethics, integrity, and quality. This year's keynote address was delivered by Kylie Taitano (BS, 2014), a candidate for California's 50th congressional district.

### **CSE Faculty & Student Awards**

CSE Assistant Teaching Professor Niema Moshiri was award the Sixth College Outstanding Teaching Award during the 2022 commencement ceremony. Moshiri received the 2021 UC San Dlego Faculty of the Year Award.

The CSE Award for Excellence was awarded to seven undergrads: Alexandra Michael and Colin Young in research; Sravya Balasa and Savannah Collyer in teaching; Erin Griggs and Vasundhara Sengupta in service and leadership; and Niharika Bhaskar in contributions to diversity. Kenneth Chen earned the Alice Y. Wu Memorial Award.

The CSE Master's Award for Excellence was presented to Colin Drewes in research; Rachel Lim in teaching; Hema Thota in service and leadership; and Nicole Martindale in contributions to diversity. Harsh Gondaliya, Mohana Seelan and Alexandra Michael received honorable mention.

CSE's Doctoral Award for Excellence was presented to Bodhisattwa Prasad Majumder and Ya-Chien Chang in research; Zachary Blanco in teaching; Fatemehsadat Mireshghallah and Nishant Bhaskar in service and leadership; and Alisha Ukani and Jennifer Chien in contributions to diversity. Sai Bi earned the Doctoral Dissertation Award.

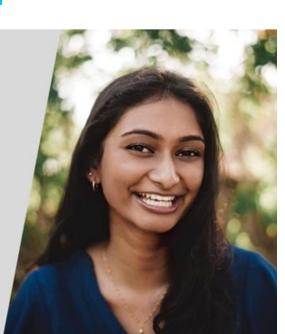
Alumni Advisory Board(AAB) Award for Excellence: Master's students - Rohan Bhushan, Mohana Seelan, and Pratik Rajendra Ratadiya. Undergraduates - Niharika Bhaskar, Nada Gehad Galal, Jose Victor Santana Sosa, Viren Abhyankar, Stone Tao, Kira Tran, Vasundhara Sengupta, and Kyeling Ong.

# WE ARE CSE



I developed the CSE DEI undergraduate leadership program to teach students how to become leaders who foster an inclusive environment in computing. Additionally my research in the CSG Lab explores problems at the intersection of society + NLP. Technology needs to be inclusive, so I focus on making the work I do people-centered.





# CENTER FOR NETWORKED SYSTEMS

### Bluetooth Signals Can be Used to Identify and Track Smartphones

A team of CNS/CSE engineers has demonstrated, for the first time, that the Bluetooth signals emitted constantly by our mobile phones have a unique fingerprint that can be used to track individuals' movements. Mobile devices, including phones, smartwatches, and fitness trackers, constantly transmit signals, known as Bluetooth beacons, at the rate of roughly 500 beacons per minute. These beacons enable features like Apple's "Find My" lost device tracking service and COVID-19 tracing apps and connect smartphones to other devices, such as wireless earphones. "This is important because in today's world Bluetooth poses a more significant threat, as it is a frequent and constant wireless signal emitted from all our personal mobile devices," said Nishant Bhaskar, a CNS/CSE Ph.D. graduate and one of the paper's lead authors.

Watch a video summary of findings from UC San Deigo CSE and ECE researchers who tested their method to track Bluetooth fingerprints on campus.



Let us know what's newsworthy. We want to hear from you about the projects and people (including students) we should include in newsletters, articles and the CSE website. Let us know what's up at <u>cse-communications@eng.ucsd.edu</u>.

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