



CSE NEWSLETTER: A LOOK INSIDE THE DEPARTMENT

Message from the Chair

I'm excited to welcome students, faculty and staff back to school. Needless to say, this is going to be another unusual quarter, as we keep adapting to the stresses that COVID-19 places on our lives. This has been a tough road, but we have learned a lot, and I cannot be prouder of our department's dedication to students, education and research.



In addition to our efforts to develop remote courses on the fly, many CSE faculty and students have collaborated on research and other efforts to contain this disease. We will continue on this road, as we strive to ease the suffering associated with COVID.

As we enter this unprecedented school year, my one question to you is: How can we improve the Computer Science and Engineering Department and better address the needs of our students? Our bottom line, always, is to make sure everyone gets the education and support they need. Please let us know what more we can do to ease the way.

Stay connected with CSE by following our [Twitter](#), [Facebook](#) and [LinkedIn](#) and [Instagram](#) feeds. If you have news to share, story ideas or comments for our CSE Communications Team, please send them to cse-communications@eng.ucsd.edu.

COVID-19 UPDATES, RESOURCES & Research

Through these unprecedented times, UC San Diego is making every effort to support students, faculty and staff. Here are a few helpful links to answer your questions.

- [Fall Plan](#)
- [Testing Q&A](#)
- [Testing and Screening](#)
- [COVID Notify](#)



CSE NEWS

CSE Welcomes New Faculty

In the next two years, four [new faculty](#) members will be joining the CSE community: Associate Professor **Carlos Jensen**, Assistant Professor **Tzu-Mao Li**, Assistant Professor **Kristen Vaccaro**, and Assistant Professor **Rose Yu**. Welcome to UC San Diego and CSE.

DeepMind Gift Boosts Machine Learning and Diversity

Thanks to a [generous gift](#) from DeepMind, a London-based artificial intelligence research company, CSE graduate students studying machine learning will receive additional support. CSE alum **Oriol Vinyals** (MA '09), a principal scientist for the company, was instrumental in the gift. This contribution to the [Campaign for UC San Diego](#) will also help the department enhance diversity.

COVID-19 Forecast Now Part of CDC Model

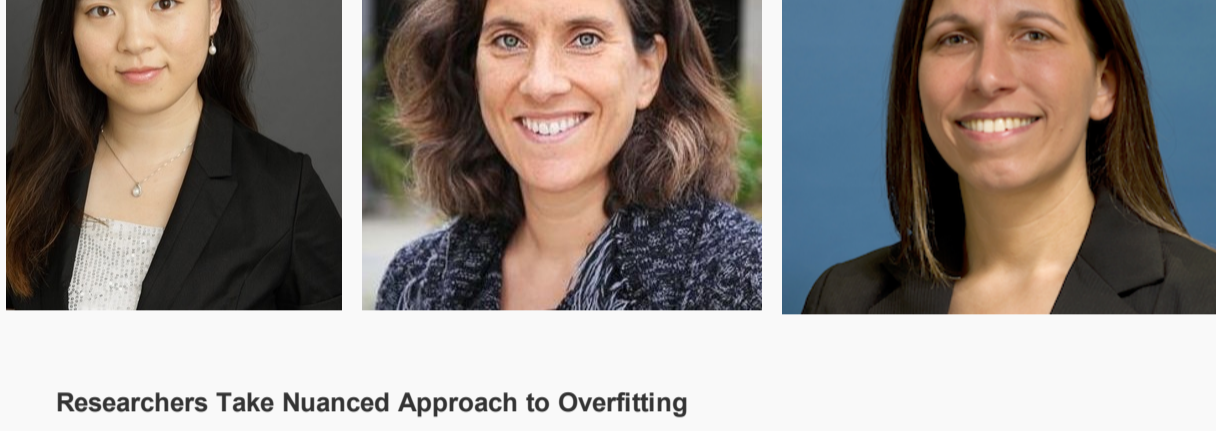
A [computational model](#), developed by Assistant Professors **Rose Yu** and **Yian Ma** and others at UC San Diego and Northeastern University, that forecasts the number of COVID-19 deaths in the United States is now part of the Centers for Disease Control's national mortality forecast. The model is designed to help policymakers respond to the pandemic.

NSF Grant to Study Equity in Computer Science

Jacobs School of Engineering Associate Dean for Students **Christine Alvarado** and colleagues at three other California institutions have received a three-year, \$1.3 million [National Science Foundation grant](#) to study equity in computer science. CSE's share will be \$348,000. Led by Anna Bargagliotti at Loyola Marymount University, the researchers will study application, admission and retention data to better understand how demographics and pre-college preparation influence computer science success.

Robots Help Children Touch Outside World

Associate Professor **Laurel Riek** and colleagues are working to improve [telepresence robots](#), and the algorithms that drive them, helping children with disabilities stay connected. The effort is being funded by a \$1 million grant from the National Robotics Initiative at the National Science Foundation.



Researchers Take Nuanced Approach to Overfitting

In a [paper](#) published at the Artificial Intelligence and the Society conference, Associate Professor **Kamaliika Chaudhuri**, Professor **Sanjoy Dasgupta** and graduate student **Casey Meehan** address a form of overfitting called data copying. Overfitting happens when results adhere too closely to training data. The researchers propose a test comparing three different data sets to detect data copying, giving researchers additional tools to identify this type of overfitting and produce better data.

CSE Researchers Receive NSF Grant to Accelerate COVID-19 Analyses

Assistant Teaching Professor **Niema Moshiri** and Professor **Tajana Rosing** recently received a \$200,000 National Science Foundation [RAPID grant](#) to improve COVID-19 analyses. Their joint project will explore new software and hardware to accelerate genomic analyses and keep pace with sequencing data.

Extrachromosomal DNA Worsens Cancer Outcomes

In a paper published in [Nature Genetics](#), Professor **Vineet Bafna** and colleagues have shown that genes found outside of chromosomes can generate cancers and drive poor patient outcomes. This is the first time researchers have found extrachromosomal DNA genes in many different cancer types.

New Understanding of Ultralong Antibodies Could Advance Vaccine Research

In a study published in the journal [Genome Research](#), Professor **Pavel Pevzner** and postdoctoral researcher **Yana Safonova** have shown how four-part VDDJ antibodies form, solving a thirty-year-old mystery. The findings could help researchers advance vaccine development.



NOTEWORTHY

Assistant Professor **Ndapa Nakashole** was recently profiled on the website [The Africa I Know](#), which seeks to dispel myths about the continent. The article discusses her life in Namibia and ongoing efforts to teach computers how to understand human language.

Assistant Professor **Jingbo Shang** was a runner-up for the ACM SIGKDD Dissertation Award for: [Constructing and Mining Heterogeneous Information Networks From Massive Text](#). The award recognizes outstanding work done by graduate students in data science, machine learning and data mining.

Assistant Professor **Nadia Polikarpova** has been honored with a 2020 Intel Rising Star Faculty Award for her work on program synthesis. The award honors faculty who have shown great promise developing computing technologies. Polikarpova will receive \$50,000 to support networking with senior Intel technical leaders, speaking at Intel-sponsored events and research and curriculum development.

CSE student **Jessica Lam** has been honored with an [ESET Women in Cybersecurity Scholarship](#), which supports women seeking careers in information security. Lam leads the membership committee for UCSD's cybersecurity division of the Association for Computing Machinery chapter and is a member of CyberDEI and Women in Cybersecurity.

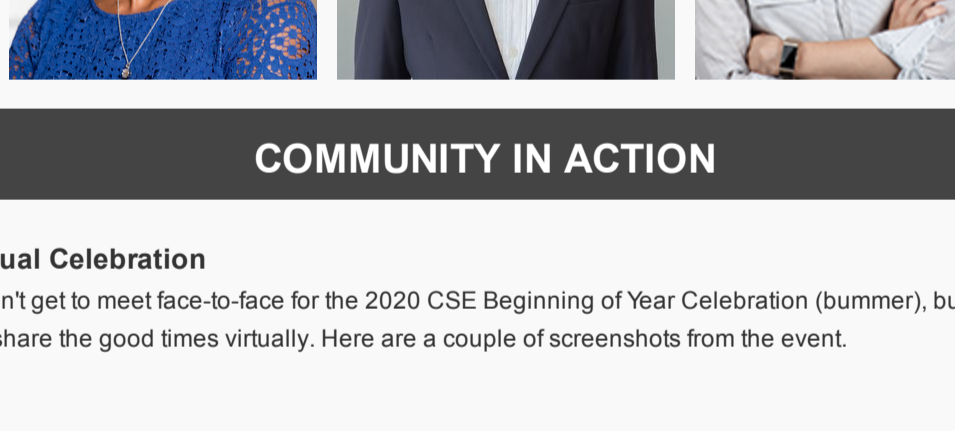
Graduate student **Fatemehsadat Mireshghallah** has received a [2020 NCWIT Collegiate Award](#), which honors women, genderqueer or non-binary students. The award recognizes technical contributions to projects that demonstrate innovation and potential impact. Mireshghallah was honored for her [Shredder](#) project.

In an interview with [Bloomberg](#), Professor **Henrik Christensen** discusses the impact robots could potentially have on remote learning. Robotic companions could help with lessons to better engage students.

A paper by Professor **Ravi Ramamoorthi** and collaborators at Berkeley and Google Research, [Representing Scenes as Neural Radiance Fields for View Synthesis](#), received a Best Paper Honorable Mention at ECCV 2020.

A paper published in [Nature Methods](#) co-authored by Associate Professor **Nuno Bandeira** offers new insights into storing the large amounts of data, metadata and other resources produced by mass spectrometry-based proteomics.

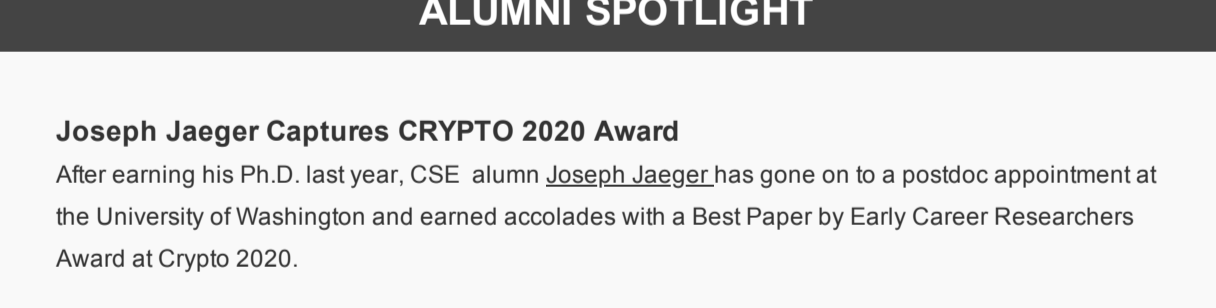
In another [Nature Methods](#) paper, Professor **Pavel Pevzner** and colleagues in Russia and the U.S. have developed the metaflye assembler, which assembled DNA from microbial communities. This work could impact drug development and other applications.



COMMUNITY IN ACTION

A Virtual Celebration

We didn't get to meet face-to-face for the 2020 CSE Beginning of Year Celebration (bummer), but we did get to share the good times virtually. Here are a couple of screenshots from the event.



ALUMNI SPOTLIGHT

Joseph Jaeger Captures CRYPTO 2020 Award

After earning his Ph.D. last year, CSE alum [Joseph Jaeger](#) has gone on to a postdoc appointment at the University of Washington and earned accolades with a Best Paper by Early Career Researchers Award at Crypto 2020.

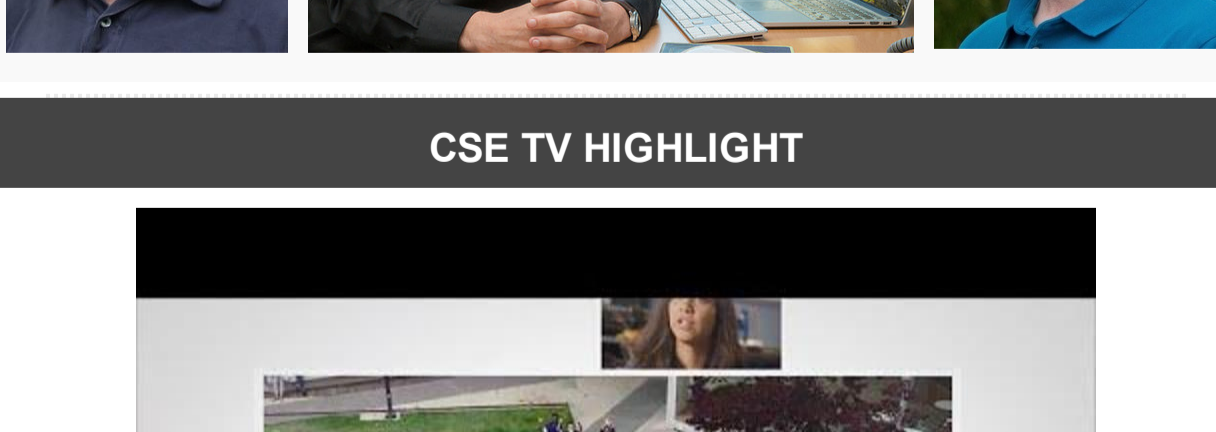


For more news about Computer Science and Engineering department graduates, check out our latest [CSE Alumni Magazine](#).

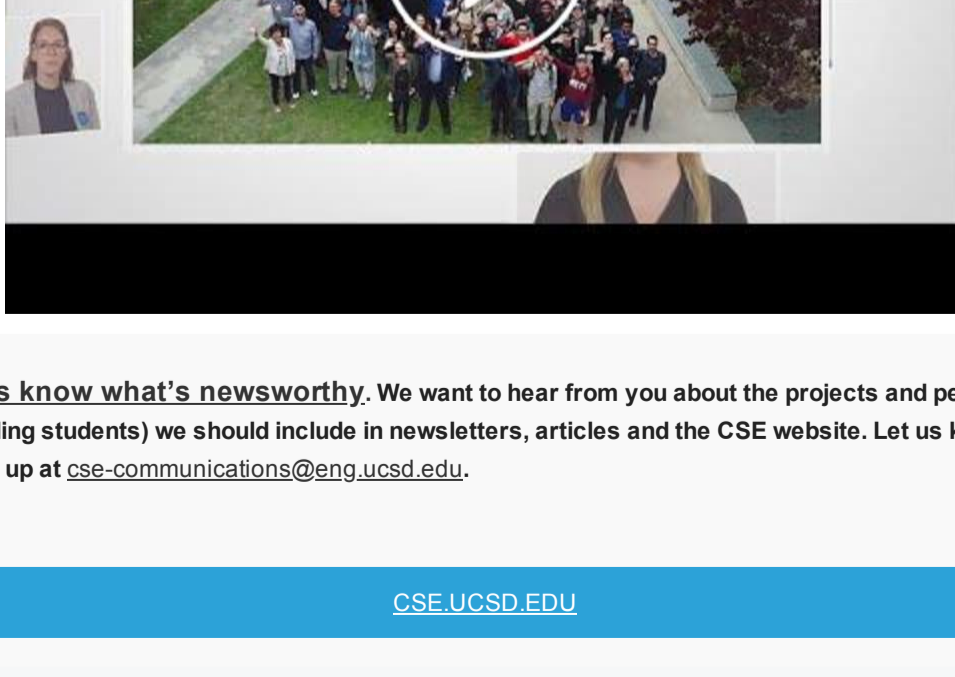
CENTER FOR NETWORKED SYSTEMS

Photonic Technology Research Earns Department of Energy Award

CSE faculty Professors **George Pape** and **Alex Snoeren** and Associate Professor **George Porter**, along with Professors **Joe Ford**, are part of a team that has received a Phase II Department Energy [ARPA-E Award](#). The group is developing a new datacenter network based on photonic technology that can double a data center's energy efficiency.



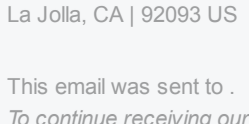
CSE TV HIGHLIGHT



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 cse-communications@eng.ucsd.edu.

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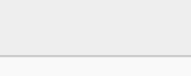
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