

UC San Diego

JACOBS SCHOOL OF ENGINEERING

WOW.

## 2019 NEW FACULTY

We hire faculty with clear-eyed determination, technical smarts, creativity, and the openness to collaborate across disciplines and industries.

We make **bold** possible.

# It's about the people.

Faculty come to the Jacobs School of Engineering to get things done. Educators. Researchers. Clinicians. Mentors. Inventors. Entrepreneurs.

We make **bold** possible.

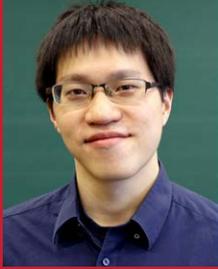
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*"When I think of all the lives that will be inspired and improved by the work of our new faculty, I'm humbled. I'm also thrilled. WOW."*

— Albert P. Pisano

Dean, Jacobs School of Engineering  
University of California San Diego

# 2019 New Faculty



**ALBERT  
CHERN**

Assistant Professor

Chern studies the interplay among differential geometry, algebraic topology, differential equations, and computational mathematics. His work has resulted in successful and novel applications in fluid dynamics, geometry processing, as well as classical numerical PDE challenges such as absorbing boundary conditions in wave computations.

[chern@math.tu-berlin.de](mailto:chern@math.tu-berlin.de)

**Previously**

Postdoctoral Researcher, Technische Universität Berlin

**Ph.D.**

Caltech

COMPUTER SCIENCE & ENGINEERING



**MICHAEL R.  
DAVIDSON**

Assistant Professor

Davidson studies the engineering implications and institutional conflicts inherent in deploying low-carbon energy at scale. His work combines power systems optimization, renewable resources assessment, and methods from the social sciences to create feasible pathways for infrastructure transitions. Joint hire with UC San Diego School of Global Policy and Strategy.

[mrdavidson@ucsd.edu](mailto:mrdavidson@ucsd.edu)

**Previously**

Postdoctoral Research Fellow, Harvard Kennedy School

**Ph.D.**

MIT

MECHANICAL & AEROSPACE ENGINEERING



**NADIA  
HENINGER**

Associate Professor

Heninger's research focuses on security, applied cryptography, and algorithms, with particular interest in cryptography in practice, cryptanalysis, privacy, computational number theory, and coding theory. She is best known for her work identifying widespread vulnerabilities in cryptographic keys on the Internet.

[nadiah@cs.ucsd.edu](mailto:nadiah@cs.ucsd.edu)

**Previously**

Assistant Professor, University of Pennsylvania

**Ph.D.**

Princeton University

COMPUTER SCIENCE & ENGINEERING



**DAVID  
KAMENSKY**

Assistant Professor

Kamensky's work addresses a central challenge of computational mechanics, namely, the difficulty of translating realistic, geometrically-complex problems into computational models. His research aims to streamline – or even automate – computational mechanics, by developing more geometrically-flexible analysis methods.

[dmkamensky@ucsd.edu](mailto:dmkamensky@ucsd.edu)

**Previously**

Postdoctoral Researcher, Brown University

**Ph.D.**

University of Texas at Austin

MECHANICAL & AEROSPACE ENGINEERING



**BORIS  
KRAMER**

Assistant Professor

To enable—or accelerate—computationally expensive engineering tasks, Kramer develops and analyzes new methods and algorithms based on models that reduce computational complexity. His research contributions are in multifidelity and data-driven modeling, optimization and control, uncertainty quantification, reliability-based design and design under uncertainty, with a strong focus on fluid flows.

[bmkrmer@ucsd.edu](mailto:bmkrmer@ucsd.edu)

**Previously**

Postdoctoral Researcher, MIT

**Ph.D.**

Virginia Tech

MECHANICAL & AEROSPACE ENGINEERING



**HANH-PHUC  
LE**

Assistant Professor

Le develops advanced electronic systems for mobile applications, data centers, ultra-high performance IT systems, automotive devices, robots, wearables, and IoT devices. His approach focuses on co-optimizing performance, efficiency, and miniaturization of integrated power electronics, including on-chip components and power management units.

[hanhphuc@ucsd.edu](mailto:hanhphuc@ucsd.edu)

**Previously**

Assistant Professor, University of Colorado Boulder

**Ph.D.**

UC Berkeley

ELECTRICAL & COMPUTER ENGINEERING



## MACHEL MORRISON

Assistant Professor

Morrison's research focuses on applying fundamental knowledge from material science and solid mechanics towards enhancing the resilience of civil infrastructure. At the core of his interests is the exploitation of the microstructure-sensitive mechanical properties of steels and other polycrystalline alloys used for mechanical or thermo-mechanical applications.

[mmorrison@ucsd.edu](mailto:mmorrison@ucsd.edu)

**Previously**  
Research Assistant Professor, North Carolina State University

**Ph.D.**  
North Carolina State University

STRUCTURAL ENGINEERING



## NIEMA MOSHIRI

Assistant Teaching Professor

Moshiri's work focuses on the development of high-quality online educational materials (mostly in the form of Massive Adaptive Interactive Texts, or MAITs) for use by instructors in flipped classes as well as for integration into Massive Open Online Courses. Moshiri's future research also will be centered on open computational problems in HIV epidemiology.

[a1moshir@eng.ucsd.edu](mailto:a1moshir@eng.ucsd.edu)

**Previously**  
Ph.D. Candidate, UC San Diego

**Ph.D.**  
UC San Diego

COMPUTER SCIENCE & ENGINEERING



## PAT PANNUTO

Assistant Professor

Pannuto seeks to increase the reach of the digital world into the physical world. Their work identifies opportunities for systems-based solutions that enable the study of broad classes of phenomena that were previously unable to be measured, such as fine-grained interaction behavior of social groups, in-body physiology, and country-scale estimates of power grid performance.

[ppannuto@ucsd.edu](mailto:ppannuto@ucsd.edu)

**Previously**  
Ph.D. Candidate, UC Berkeley

**Ph.D.**  
UC Berkeley

COMPUTER SCIENCE & ENGINEERING



## ALYSSA POWELL

Assistant Teaching Professor

Powell teaches core courses in chemical engineering and is developing new laboratory and biochemical engineering courses for chemical engineering students. Her research has focused on enzyme engineering and biopharmaceutical protein production.

[a3powell@ucsd.edu](mailto:a3powell@ucsd.edu)

**Previously**  
Lecturer, UC San Diego

**Ph.D.**  
Stanford University

NANOENGINEERING



## HUIHUI QI

Assistant Teaching Professor

Qi focuses on engineering education, especially project-based learning, multi-disciplinary course design, the influence of assessment methods on students' learning outcomes, freshmen engineering education and retention improvement, promoting diversity in engineering, and sustainable engineering education.

[huqi@ucsd.edu](mailto:huqi@ucsd.edu)

**Previously**  
Assistant Professor, Grand Valley State University

**Ph.D.**  
Rutgers University

MECHANICAL & AEROSPACE ENGINEERING



## GERALD SOOSAI RAJ

Assistant Teaching Professor

Gerald's research aims to design and evaluate student-centered methods for teaching computer science to a diverse set of learners. He studies the impact of bilingual CS education on non-native English speakers; effectiveness of live-coding for teaching introductory programming; and bridging the gap between academia and industry.

[gerald@eng.ucsd.edu](mailto:gerald@eng.ucsd.edu)

**Previously**  
Ph.D. Candidate, University of Wisconsin-Madison

**Ph.D.**  
University of Wisconsin-Madison

COMPUTER SCIENCE & ENGINEERING



**JINGBO SHANG**

Assistant Professor

Shang's research focuses on developing data-driven text mining approaches with light human annotation efforts to transform massive text data into actionable knowledge. His research has been successfully applied to a wide spectrum of industries across different domains (e.g., biomedical & financial). Joint hire with the UC San Diego Halicioğlu Data Science Institute.

[jshang@ucsd.edu](mailto:jshang@ucsd.edu)

**Previously**

Ph.D. Candidate, University of Illinois, Urbana-Champaign

**Ph.D.**

University of Illinois, Urbana-Champaign

COMPUTER SCIENCE & ENGINEERING



**LINGYAN SHI**

Assistant Professor

Shi develops and applies optical imaging and spectroscopic techniques that can directly visualize complex biological events—such as those underlying brain function, cancer, and metabolic diseases—at subcellular scales in real time and in situ. Shi's methods could offer researchers and clinicians powerful tools to diagnose and treat disease.

[l2shi@eng.ucsd.edu](mailto:l2shi@eng.ucsd.edu)

**Previously**

Postdoctoral Research Associate, Columbia University

**Ph.D.**

City College of New York

BIOENGINEERING



**EDWARD WANG**

Assistant Professor

Wang develops contextually intelligent, continuous mobile health monitors to enable widespread, low-cost medical care outside the clinic. His work combines sensing, machine learning, and human-computer interaction. He collaborates closely with clinicians and health organizations to create solutions that can make real-world clinical impact.

[ejaywang@ucsd.edu](mailto:ejaywang@ucsd.edu)

**Previously**

Ph.D. Candidate, University of Washington

**Ph.D.**

University of Washington

ELECTRICAL & COMPUTER ENGINEERING



**XIAOLONG WANG**

Assistant Professor

Wang's research focuses on computer vision and machine learning. He develops unsupervised learning and continuous learning algorithms for training deep neural networks on video data. His work aims to build AI systems with minimum human annotations for the understanding of objects, human activities, scenes, and interactions among them.

[xiaolonw@andrew.cmu.edu](mailto:xiaolonw@andrew.cmu.edu)

**Previously**

Ph.D. Candidate, Carnegie Mellon University

**Ph.D.**

Carnegie Mellon University

ELECTRICAL & COMPUTER ENGINEERING



**PENGTAO XIE**

Assistant Professor

Xie develops machine learning methodologies to improve healthcare and medicine, such as automatically generating diagnosis reports from medical images and measuring patient similarity for personalized treatment. On the theoretical side, he studies diversity-promoting learning, latent space models, and large-scale distributed machine learning.

[pengtaoxie2008@gmail.com](mailto:pengtaoxie2008@gmail.com)

**Previously**

Senior Director, Petuum Inc

**Ph.D.**

Carnegie Mellon University

ELECTRICAL & COMPUTER ENGINEERING



**YIYING ZHANG**

Assistant Professor

Zhang explores innovative ways to build software and hardware systems for the next generation of data centers. Apart from data-center systems, she also works on the intersection of computer systems and machine learning, security, and programming languages.

[yiying@ucsd.edu](mailto:yiying@ucsd.edu)

**Previously**

Assistant Professor, Purdue University

**Ph.D.**

University of Wisconsin-Madison

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**JACOBS SCHOOL OF ENGINEERING**

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