2019 NEW FACULTY
We hire faculty with clear-eyed determination, technical smarts, creativity, and the openness to collaborate across disciplines and industries.

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

“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

Previously
Postdoctoral Researcher, Technische Universität Berlin
Ph.D.
Caltech

**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.

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Previously
Assistant Professor, University of Pennsylvania
Ph.D.
Princeton University

**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.

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Previously
Postdoctoral Research Fellow, Harvard Kennedy School
Ph.D.
MIT

**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.

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Previously
Postdoctoral Researcher, Brown University
Ph.D.
University of Texas at Austin

**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.

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Previously
Postdoctoral Researcher, MIT
Ph.D.
Virginia Tech

**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.

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Previously
Assistant Professor, University of Colorado Boulder
Ph.D.
UC Berkeley
MACHÉL MORMISON
Assistant Professor
Previously
Research Assistant Professor, North Carolina State University
Ph.D.
North Carolina State University

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.
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PAT PANNUTO
Assistant Professor
Previously
Ph.D. Candidate, UC Berkeley
Ph.D.
UC Berkeley

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.
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NIEMI MOSHIRI
Assistant Teaching Professor
Previously
Ph.D. Candidate, UC San Diego
Ph.D.
UC San Diego

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.
almoshir@eng.ucsd.edu

ALYSSA POWELL
Assistant Teaching Professor
Previously
Lecturer, UC San Diego
Ph.D.
Stanford University

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.
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HIUHUI QI
Assistant Teaching Professor
Previously
Assistant Professor, Grand Valley State University
Ph.D.
Rutgers University

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

GERALD SOOSAI RAJ
Assistant Teaching Professor
Previously
Ph.D. Candidate, University of Wisconsin-Madison
Ph.D.
University of Wisconsin-Madison

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
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 Halıcıoğlu Data Science Institute.
jshang@ucsd.edu

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Ph.D. Candidate, University of Illinois, Urbana-Champaign
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[Box]

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.
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Previously
Ph.D. Candidate, University of Washington
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University of Washington

[Box]

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

Previously
Ph.D. Candidate, Carnegie Mellon University
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[Box]

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.
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Previously
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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.
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[Box]

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.
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Previously
Senior Director, Petuum Inc
Ph.D.
Carnegie Mellon University

[Box]

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.
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Previously
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