

UC San Diego

JACOBS SCHOOL OF ENGINEERING

# NEW FACULTY WELCOME

2021

The Jacobs School of Engineering hired 27 new faculty in the last two years. These professors are among the nearly 140 faculty who have joined the school in the last eight years.

UC San Diego

JACOBS SCHOOL OF ENGINEERING

Our faculty are **bold**.

On their quest for positive impact,  
they are remaking our school — and the world.

UC San Diego

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# Bioengineering

# Brian Aguado

Assistant Professor  
Bioengineering

## Research Interests:

- To develop precision biomaterials that enable the evaluation of a patient's unique biology to diagnose and treat a variety of health disorders as a function of sex, age, and/or ancestry.
- Aguado aims to develop sex-specific biomaterial technologies to treat cardiovascular diseases, including aortic valve disease and heart failure.



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Aguado**

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 @BrianAguado

ASSISTANT PROFESSOR

BIOENGINEERING

# Andrew Bartko

Executive Director  
Center for Microbiome Innovation

## Research interests:

- To inspire, nurture, and sustain vibrant collaborations between UC San Diego's microbiome experts and industry partners in the life science, nutrition, energy, information technology, clinical and healthcare industries.
- Bartko aims to focus on creating and commercializing innovative technologies to accelerate microbiome discoveries and healthcare breakthroughs across academic and industry collaborations.



Andrew  
Bartko

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EXECUTIVE DIRECTOR,  
CENTER FOR MICROBIOME INNOVATION  
PROFESSOR OF PRACTICE  
BIOENGINEERING

# Bogdan Bintu

Assistant Professor  
Bioengineering

## Research Interests:

- Bintu develops new microscopy tools that can simultaneously “see” thousands of DNA sequences, RNA molecules and proteins in individual cells.
- He uses these tools to understand how neurons specialize within the olfactory nervous system.



**Bogdan  
Bintu**

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ASSISTANT PROFESSOR

**BIOENGINEERING**

CELLULAR AND MOLECULAR MEDICINE

# Benjamin Smarr

Assistant Professor  
Bioengineering

## Research Interests:

- Time series analysis in biological systems, with an emphasis on practical information extraction for translational applications.
- Smarr's main project is TemPredict, which brings together wearable device data from 50K people with over 2 million daily symptom reports and is used to identify signs of COVID-19 onset, progression, and recovery.



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ASSISTANT PROFESSOR  
BIOENGINEERING  
HALICIOĞLU DATA SCIENCE INSTITUTE



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# Computer Science & Engineering

# Mai ElSherief

Assistant Teaching Professor  
Computer Science and Engineering

## Research Interests:

- Computational and data science problems that model online social interactions to infer and understand online misuse behaviors and psychological well-being.
- ElSherief's other research interests include social computing, natural language processing, machine learning, and communication.



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ASSISTANT TEACHING PROFESSOR  
COMPUTER SCIENCE & ENGINEERING

# Carlos Jensen

Associate Vice Chancellor  
Educational Innovation

## Research Interests:

- Jensen's research lies at the intersection between usability and software engineering, with an emphasis on studying how Open Source communities operate and organize, and the tools and processes needed to make them more efficient.
- His recent work uses automated testing techniques to help developers improve the reliability of large and complex open source software.



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Jensen

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ASSOCIATE VICE CHANCELLOR,  
EDUCATIONAL INNOVATION

COMPUTER SCIENCE & ENGINEERING

# Tzu-Mao Li

Assistant Professor  
Computer Science and Engineering

## Research Interests:

- Connecting classical computer graphics and image processing algorithms with modern data-driven methods to facilitate exploration.
- His work added 3D understanding to computer vision models; used data to improve camera imaging pipeline quality; and made light transport simulation faster by using information implicitly defined by rendering programs.



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Li

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ASSISTANT PROFESSOR  
COMPUTER SCIENCE & ENGINEERING

# Imani Munyaka

Assistant Professor  
Computer Science and Engineering

## Research Interests:

- Munyaka is a human-centered computing researcher. Her research interests include public policy, information security, computer science education, educational technologies, voting technologies, cybersecurity and minorities in STEM.
- Her goal is to improve and alleviate the security and privacy concerns of those most vulnerable.



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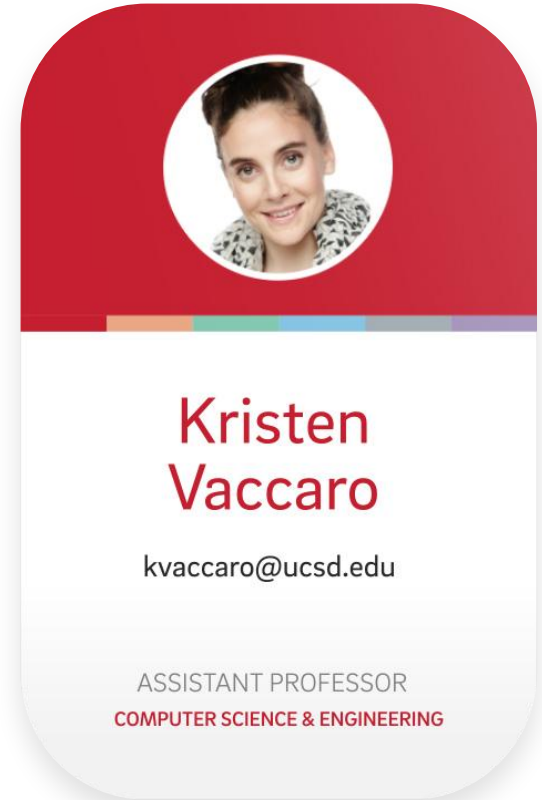
ASSISTANT PROFESSOR  
COMPUTER SCIENCE & ENGINEERING  
BLACK DIASPORA  
AND AFRICAN AMERICAN STUDIES

# Kristen Vaccaro

Assistant Professor  
Computer Science and Engineering

## Research Interests:

- How to design machine learning systems to give users a sense of agency and control.
- Vaccaro found that some existing ways of providing control for social media can function as placebos, increasing user satisfaction even when they do not work.



# Rose Yu

Assistant Professor  
Computer Science and Engineering

## Research Interests:

- To advance machine learning and enable interpretable, efficient, and robust large-scale spatiotemporal reasoning.
- Yu's work has been successfully applied to solve challenging domain problems in sustainability, health, and physical sciences.



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Yu

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ASSISTANT PROFESSOR  
COMPUTER SCIENCE & ENGINEERING

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# Electrical & Computer Engineering



# Nick Antipa

Assistant Professor  
Electrical and Computer Engineering

## Research Interests:

- Developing design frameworks that merge optical models with algorithms, allowing optimization of both components and enabling the development of cutting-edge imaging and display systems.
- By considering both the hardware and digital domains, new computational optical systems emerge that extend capability beyond what is available.



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Antipa

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ASSISTANT PROFESSOR  
ELECTRICAL & COMPUTER ENGINEERING

# Mingu Kang

Assistant Professor

Electrical and Computer Engineering

## Research Interests:

- Vertically-integrated VLSI information processing for machine learning and signal processing algorithms.
- Kang's research focuses on energy- and latency-efficient integrated circuits, architectures, and systems by leveraging novel computing paradigms including in-memory, in-sensor, and neuromorphic computing with both CMOS and emerging devices.



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Kang

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ELECTRICAL & COMPUTER ENGINEERING

# Florian Meyer

Assistant Professor  
Electrical and Computer Engineering

## Research Interests:

- Statistical signal processing for navigation, mapping, and multi-object tracking in applications including maritime situational awareness, autonomous driving, and indoor localization.
- Meyer investigates efficient and scalable high-dimensional nonlinear estimation using graphical models where the number of states to be estimated may also be unknown.



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Meyer

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ELECTRICAL & COMPUTER ENGINEERING

SCRIPPS INSTITUTION  
OF OCEANOGRAPHY

# Karcher Morris

Assistant Teaching Professor  
Electrical and Computer Engineering

## Research Interests:

- Embedding project-based learning throughout the undergraduate electrical and computer engineering curriculum, complementing theoretical foundations.
- By connecting students with application-oriented coursework and industry-relevant challenges, Morris promotes an early engagement between students and their research/industry goals.



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Morris**

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ASSISTANT  
TEACHING PROFESSOR  
ELECTRICAL & COMPUTER ENGINEERING

# Yuanyuan Shi

Assistant Professor  
Electrical and Computer Engineering

## Research Interests:

- Energy systems and cyber-physical systems, spanning from machine learning, to optimization and control.
- Shi works on data-driven control for complex networked systems and market mechanism design under multi-agent learning dynamics.



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ASSISTANT PROFESSOR  
ELECTRICAL & COMPUTER ENGINEERING

# Yatish Turakhia

Assistant Professor  
Electrical and Computer Engineering

## Research Interests:

- Developing algorithms and hardware accelerators to enable faster and cheaper progress in biology and medicine.
- Turakhia also develops computational methods that enable biological discoveries, such as new genotype-phenotype relationships.



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ASSISTANT PROFESSOR

ELECTRICAL & COMPUTER ENGINEERING

# Yang Zheng

Assistant Professor

Electrical and Computer Engineering

## Research Interests:

- Developing methods and frameworks for the optimization and control of network systems and their applications to cyber-physical systems, especially autonomous vehicles and traffic systems.
- Zheng's goal is to develop computationally efficient and distributed solutions for large-scale network systems by exploring and exploiting real-world system structures.



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ASSISTANT PROFESSOR

ELECTRICAL & COMPUTER ENGINEERING

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# Mechanical & Aerospace Engineering



# Sylvia Herbert

Assistant Professor  
Mechanical and Aerospace Engineering

## Research Interests:

- Developing new techniques for safety and efficiency in autonomous systems.
- Herbert has developed methods for scalable safety and real-time decision making that draw from control theory, cognitive science, and reinforcement learning, and which are backed by both rigorous theory and physical testing on robotic platforms.



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Herbert

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ASSISTANT PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Patricia Hidalgo-Gonzalez

Assistant Professor

Mechanical and Aerospace Engineering

## Research Interests:

- High penetration of renewable energy using optimization, control theory and ML. She is interested in power dynamics, energy policy, electricity market redesign, and learning for dynamical systems with safety guarantees.
- Hidalgo-Gonzalez co-developed a power system expansion model for Western North America's grid under climate change uncertainty.



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MECHANICAL & AEROSPACE ENGINEERING

# Stephanie Lindsey

Assistant Professor

Mechanical and Aerospace Engineering

## Research Interests:

- Lindsey's work lies at the interface of fluid mechanics, numerical analysis and cardiovascular developmental biology.
- She seeks to determine causal-effect relationships for the creation of cardiac malformations and address important challenges in clinical treatment of congenital heart defects through a combined computational-experimental approach.



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Lindsey

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ASSISTANT PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Marko Lubarda

Assistant Teaching Professor  
Mechanical and Aerospace Engineering

## Research Interests:

- Lubarda is dedicated to engineering pedagogy and enriching students' learning experiences through curriculum design, teaching innovations, and support of undergraduate student research.
- He works in the areas of computational analysis, engineering mathematics, materials science, solid mechanics, device physics, and magnetic nanotechnologies.



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ASSISTANT  
TEACHING PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Lonnie Petersen

Assistant Professor  
Mechanical and Aerospace Engineering

## Research Interests:

- Dr. Petersen is a physician scientist specializing in space and aviation physiology and development of countermeasure devices for use in space.
- During the COVID-19 pandemic, she co-lead a team that developed a low-cost, easy to use ventilator and other ways to support critically ill COVID-19 patients and mitigate the spread of disease.



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Petersen

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ASSISTANT PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Lisa Poulikakos

Assistant Professor  
Mechanical and Aerospace Engineering

## Research Interests:

- Poulikakos harnesses nanophotonics, the study and manipulation of light on the nanoscale, to bridge engineering and biomedicine.
- The resulting in-vivo and ex-vivo nanophotonic probes aim to elucidate the origin and propagation of a range of diseases, leading to low-cost medical diagnostics; rapid, on-chip biochemical drug testing; or in-situ biomedical imaging.



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ASSISTANT PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Aaron Rosengren

Assistant Professor  
Mechanical and Aerospace Engineering

## Research Interests:

- Fundamental and applied research in astrodynamics, space situational awareness, and space traffic management to define perennial, ad-hoc practices and policies to make space a sustainable resource.
- Celestial mechanics and nonlinear dynamics, with a strong focus on space debris and small Solar System bodies.



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ASSISTANT PROFESSOR  
MECHANICAL & AEROSPACE ENGINEERING

# Jon Wade

Professor of Practice  
Mechanical and Aerospace Engineering

## Research Interests:

- Ensure that the research conducted and the curriculum developed in systems engineering has the greatest impact on addressing the critical challenges that face our global society and nation.
- Wade leads research in the area of complex, evolving systems engineering methods, processes, tools, and education.



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PROFESSOR OF PRACTICE  
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# NanoEngineering

# Zeinab Jahed

Assistant Professor  
NanoEngineering

## Research Interests:

- Jahed designs electronics that integrate intelligently with biological systems at the nanoscale.
- She designs non-invasive and high-throughput bio-electronic tools to record and manipulate biological activities, and uses AI and ML techniques to interpret the large data sets from these nano-bio-electronic tools to answer important biological questions.



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ASSISTANT PROFESSOR

NANOENGINEERING

UC San Diego

JACOBS SCHOOL OF ENGINEERING

# Structural Engineering

# Georgios Tsampras

Assistant Professor  
Structural Engineering

## Research Interests:

- Improving the seismic response and simplifying the life management of structures and civil infrastructures.
- Tsampras conducts integrated experimental and analytical research on components, connections, and systems that enhance the safety and reliability of structures and civil infrastructures against earthquakes.



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ASSISTANT PROFESSOR  
STRUCTURAL ENGINEERING

UC San Diego

JACOBS SCHOOL OF ENGINEERING

# Anthropology, Performance, and Technology Program

# Hortense Gerardo

Director

Anthropology, Performance, and Technology (APT) Program

## Research Interests:

- The APT program at the Jacobs School of Engineering aims to empower a new generation of socially-engaged, culturally relevant, and artistically as well as scientifically and technically creative engineers.
- The program is directed by Gerardo, a playwright with a PhD in anthropology and performance studies.



Hortense  
Gerardo

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DIRECTOR

ANTHROPOLOGY, PERFORMANCE,  
AND TECHNOLOGY PROGRAM