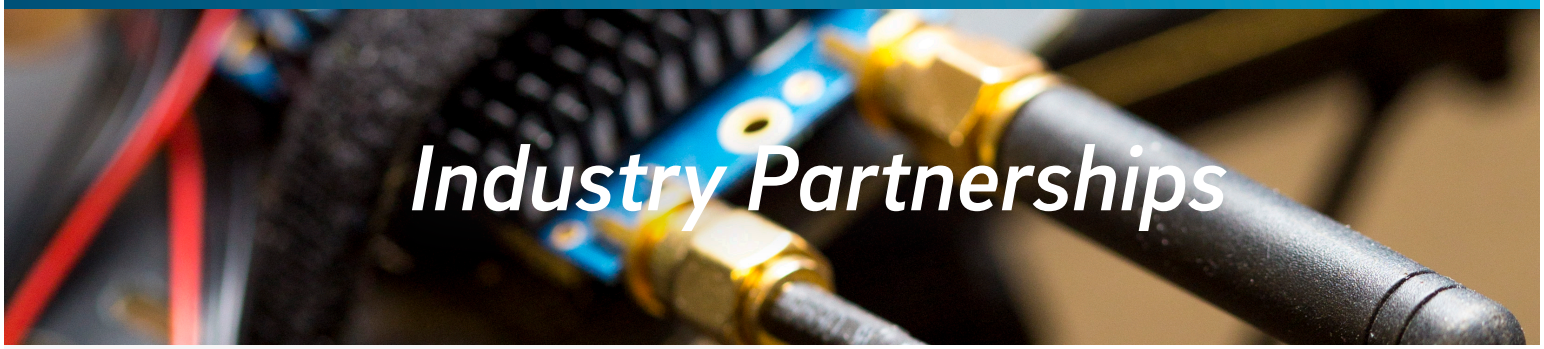
CONTEXTUAL ROBOTICS INSTITUTE

UC San Diego



JOIN THE CONTEXTUAL ROBOTICS INSTITUTE

Joining the Contextual Robotics Institute provides access to UC San Diego faculty, researchers, and graduate students who are transforming autonomy, healthcare robotics and advanced manufacturing.

The Institute also provides industry partners with a coordinated research environment through which technical and research challenges are tackled in a collaborative, cross-disciplinary environment.

We build talent and technology for tomorrow's real-world robotics systems.

contact:
cri-info@ucsd.edu

ATA ENGINEERING, INC.

azbil

brain corp

HONDA

LG

NORTHROP GRUMMAN

tusimple

WowWee

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FACILITIES

AUTONOMY RESEARCH AND TESTING ECOSYSTEM

Institute researchers are collaborating across campus in order to turn UC San Diego into a living laboratory for autonomy, including self-driving vehicles. One of the first projects will be autonomous mail delivery, which is one of the ways the Institute is focused on the 'last mile' problem – when autonomous vehicles get off the freeway and need to navigate crowded neighborhood streets. UC San Diego is a leader in many of the areas critical for real-world autonomous vehicles including 5G and the future of wireless technologies, vehicle-to-vehicle communication, radar, user-centered design, cybersecurity, driver monitoring and interdisciplinary smart-cities research.
More information: cri-info@ucsd.edu

AERODROME

The Institute's Aerodrome enables controlled, outdoor research with Unmanned Aerial Vehicles (UAVs) at UC San Diego. Constructed in 2017 with funding from our partners at Qualcomm and Northrop Grumman, the Aerodrome is San Diego's premier outdoor drone flight cage, supporting research and collaboration in autonomous flight, perception, machine learning and multi-vehicle collaboration. The facility is an enclosed, mesh cage, roughly 45' x 55' feet in area and 35' tall. The space is available for use by UC San Diego faculty, staff and student researchers, as well as industry partners.
More information: Tim McConnell at tmcconnell@eng.ucsd.edu

ROBOT GUIDES, ROBOT ZOO AND SMART HOME

On the first floor of Atkinson Hall you'll find a robot zoo, scenes from a next-generation Smart Home, and a pair of robots that work part time as building receptionists and tour guides. These facilities and the robots and humans you'll find working in them offer a sample of the varied robotics research being done at the Institute. The robot guides TritonBot and BoxBot, for example, are often out collecting data from interactions with visitors to Atkinson Hall. This project is aimed at learning to develop robotic systems that are better equipped to interact autonomously with humans. This is just one of the ways Institute researchers are focused on developing useful robotic systems capable of interacting in real time with humans in the real world.
More information: cri-info@ucsd.edu

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AFFILIATED FACULTY

LEADERSHIP

Henrik Christensen
Director, Contextual Robotics Institute; Cognitive Robotics Lab

Todd Hylton
Exectutive Director, Contextual Robotics Institute

ANTHROPOLOGY

Thomas Levy
Center for Cyber-Archaeology & Sustainability

BIOENGINEERING

Gert Cauwenberghs
Integrated Systems Neuroengineering Lab

Todd Coleman
Neural Interaction Lab

Gabriel Silva
Mathematical Neuroscience and Neural Engineering Lab

COGNITIVE SCIENCE

Andrea Chiba
Neurally feasible robotic tools for use as embodied models

Virginia de Sa
Machine Learning multi-view/ multi-modal learning

David Kirsh
Interactive Cognition Lab

Ayse P. Saygin
Cognitive Neuroscience and Neuropsychology Lab

Douglas Nitz
Systems Neuroscience Lab

Zhuowen Tu
Machine Learning, Perception, and Cognition Lab

Angela Yu
Computational & Cognitive Neuroscience Lab

COMMUNICATION

Morana Alač
Human-robot interaction in everyday settings

COMPUTER SCIENCE AND ENGINEERING

Manmohan Chandraker
3D scene understanding for self-driving cars

Kamalika Chaudhuri
Center for Trustworthy Machine Learning

Garrison Cottrell
Mechanisms underlying human perception

Sicun Gao
Automated reasoning, design automation

Rajesh Gupta
Microelectronic Embedded Systems Lab

Ryan Kastner
Remote sensing platforms

Ravi Ramamoorthi
Center for Visual Computing

Laurel Riek
Robotics & Healthcare Engineering Lab

Tajana Rosing
System Energy Efficiency Lab

Hao Su
Deep learning for understanding 3D environments

ELECTRICAL AND COMPUTER ENGINEERING

Nikolay A. Atanasov
Existential Robotics Lab

Shaya Fainman
Ultrafast and Nanoscale Optics Group

Joseph Ford
Photonics Systems Integration Lab

Tara Javidi
Advanced Networking Science Lab

Ken Kreutz-Delgado
QI/Calit2 Pattern Recognition Lab

Patrick Mercier
Energy-Efficient Microsystems Lab

Gabriel Rebeiz
Phased arrays for autonomous transportation

Curt Schurgers
Remote sensing, imaging, system prototyping

Mohan Trivedi
Lab for Intelligent & Safe Automobiles

Nuno Vasconcelos
Statistical Visual Computing Lab

Michael Yip
Advanced Robotics and Controls Lab

GLOBAL POLICY & STRATEGY

Ruixue Jia
Economics, history and politics of robotics

INSTITUTE FOR NEURAL COMPUTATION

Scott Makeig
Swartz Center for Computational Neuroscience

MATHEMATICS

Melvin Leok
Computational Geometric Mechanics Group

MECHANICAL AND AEROSPACE ENGINEERING

Thomas Bewley
UCSD Flow Control & Coordinated Robotics Labs

Bob Bitmead
Control systems underpinning robotics

Jorge Cortes
Multi-Agent Robotics Lab

Mauricio de Oliveira
Optimization, Dynamic Systems and Control

James Friend
Medically Advanced Devices Lab

Miroslav Krstic
Nonlinear and Adaptive Control Lab

Nick Gravish
Bio-inspired robot design, fabrication, and control

John Hwang
Large-scale Design Optimization Lab

Sonia Martinez
Multi-Agent Robotics Lab

Tania Morimoto
Robotics, haptics, and human-in-the-loop interfaces

Sutanu Sarkar
Computational Fluid Dynamics Lab

Frank Talke
Robotics in manufacturing of hard disks, medical devices

Michael Tolley
Bioinspired Robotics and Design Lab

DEPARTMENT OF MUSIC

Shlomo Dubnov
Center for Research in Entertainment in Learning

NANOENGINEERING

Shaochen Chen
Nanobiomaterials, bioprinting, & tissue engineering

Joseph Wang
Micro- and nano-robotics

Sheng Xu
Flexible and stretchable electronics

STRUCTURAL ENGINEERING

Falko Kuester
Drone Lab