Caltech
Student-Faculty Programs

Mechanical Engineering

Session L

Room: 100 Powell-Booth

1:00 - 1:20 PM	***Raffi A. Khondaker*** University of Virginia	Real-time Occupancy Map Generation From Onboard LiDAR Data for Safety-critical Control	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems* Ryan M. Bena *Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering* Gilbert Bahati *Graduate Student in Mechanical Engineering*
1:20 - 1:40 PM	***Timothy Kennedy*** Stevens Institute of Technology *Information Science and Technology (IST) Venerable WAVE Fellow*	LIP-guided Reinforcement Learning for Robust and Efficient Bipedal Locomotion	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems* Kejun Li *Graduate Student in Computation and Neural Systems*
1:40 - 2:00 PM	***Eloise Zeng*** *DaRin Butz SURF Fellow*	Integrating and Characterizing the Unitree D1 Robotic Arm for Whole-body Control Research	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems* Zachary Olkin *Graduate Student in Control and Dynamical Systems*
2:00 - 2:20 PM	***Edward S. Ju*** *Øistein and Rita A. Skjellum SURF Fellow*	A Scalable Control-Barrier Function Framework for Real-Time Resilient Connectivity in UAV Swarms	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems* Ryan M. Bena *Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering* Pio Ong *Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering*

2:20 - 2:40 PM	***Logan A. Woudstra*** University of Alberta	System Identification to Improve Sim-to-real Transfer of Reinforcement Learning Policies for Humanoid Locomotion	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems* Lizhi Yang *Graduate Student in Mechanical Engineering* Blake Werner *Graduate Student in Mechanical Engineering*
2:40 - 2:50 PM	***BREAK***		
2:50 - 3:10 PM	***Randolph L. Douge*** *Robert I. and Winifred E. Gardner SURF Fellow*	AprilTag-Based Vision System for Arm-Guided Object Probing With a RealSense Depth Camera	Joel W. Burdick *Richard L. and Dorothy M. Hayman Professor of Mechanical Engineering and Bioengineering; Research Scientist, JPL* Yacine Derder *Assistant Research Engineer in Mechanical and Civil Engineering*
3:10 - 3:30 PM	***Alexander T. Gogola*** *Mark Reinecke SURF Fellow*	Robotic Arm for Autonomous Electrical Panel Inspection and Repairs	Joel W. Burdick *Richard L. and Dorothy M. Hayman Professor of Mechanical Engineering and Bioengineering; Research Scientist, JPL* Yacine Derder *Assistant Research Engineer in Mechanical and Civil Engineering*
3:30 - 3:50 PM	***Nils Jonathan Andreas Cederlund*** Lund University	Soft Contact Normal Quantification Using Flow Matching	Joel W. Burdick *Richard L. and Dorothy M. Hayman Professor of Mechanical Engineering and Bioengineering; Research Scientist, JPL* Emily A. Fourney *Graduate Student in Control and Dynamical Systems*
3:50 - 4:10 PM	***Rodolfo A. Ruiz*** University of California, Los Angeles *Carl F. Braun WAVE Fellow*	Numerical Simulation and Analysis of Homogenized Material Properties Arising From Random Microstructures	Kaushik Bhattacharya *Howell N. Tyson, Sr., Professor of Mechanics and Materials Science* Harkirat Singh *Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering*

4:10 - 4:30 PM	***Emily A. Stanton*** *Rita A. and Øistein Skjellum SURF Fellow*	Engineering and Analysis of Guayule Latex-Algae Biocomposites for Sustainable Material Applications	Chiara Daraio *G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute* Siddharth Premnath *Graduate Student in Chemical Engineering*
4:30 - 4:50 PM	***Pat Mutia*** *Dr. Terry Cole SURF Fellow*	Analysis of Urban Seismic Signals From the Community Seismic Network (CSN) Using K-means Clustering	Monica D. Kohler *Research Professor in Mechanical and Civil Engineering*
4:50 - 5:10 PM	***Annie M. Hu*** *Crook Family SURF Fellow*	Towards the Design of an Ultra-high Vacuum Compatible Inductively Coupled Plasma (ICP) Source	Austin J. Minnich *Professor of Mechanical Engineering and Applied Physics* Mete Bayrak *Graduate Student in Chemical Engineering*