Full Name: Shadi Haddad **E-mail:** shhaddad@ucsc.edu **Tel:** +1 (831) 332-1640

EDUCATION

- **PhD in Applied Mathematics** **Expected 2023**
  School of Engineering, University of California Santa Cruz

- **M.Sc. in Mechanical Engineering** **January 2018**
  College of Mechanical Engineering, University of Tehran, Tehran, Iran
  Thesis title: "Second order sliding mode tracking control of a piezoelectric tapered micro actuator with axial deflection and system nonlinearity"

- **B.Sc. in Mechanical Engineering** **July 2015**
  College of Mechanical Engineering, Chamran University of Ahvaz, Ahvaz, Iran

RESEARCH INTEREST

Uncertain dynamical systems, Control theory, Robotic.

SELECTED RESEARCH AND ACADEMIC ACTIVITIES

- Dynamic modeling and vibration analysis of mechanical and micro/nano electromechanical systems (MEMS)
- Regulation and tracking control for variable structural and nonlinear mechanical and micro-electro-mechanical systems
- Modeling and vibration analysis of piezoelectric micro-actuators
- Nonlinear finite element method programming
- Observer-based sliding mode controllers and fault detection
- Inverse and forward kinematics of robot manipulators

JOURNAL PAPERS

- Shadi Haddad, Abhishek Halder and Baljeet Singh, "Density-Based Stochastic Reachability Computation for Occupancy Prediction in Automated Driving", Transactions on Intelligent Transportation Systems (Submitted), 2020.
- Shadi Haddad, Abhishek Halder. "The Convex Geometry of Integrator Reach Sets", American Control Conference, 2019.
- M. Mousavi, M. Rahnavard, S. Haddad, "Observer based fault reconstruction schemes using terminal sliding modes", International Journal of Control, 2018.
- S. Haddad, Sh. Siahpour, M. Moghimi Zand, "Dynamics behavior and stability of thin shallow micro shells considering the effect of squeeze film damping under electrostatic actuation," Submitted to Journal of Microsystem Technologies, 2018 (under review).
- S. Haddad, M. Baghani, "Analytical study on nonlinear 3D coupled deformations of tapered FG micro-beams accounting for size effects", Iranian Journal of Science and Technology, 2018.

Talks And Poster presentation

- Spot light talk and poster presentation "Understanding the Geometry of Integrator Reach Sets for Robotics Applications", Bay Area Robotics Symposium, University of California, Berkeley, 2019.
- American Control Conference, "The Convex Geometry of Integrator Reach Sets", 2020.

Awards

- Chancellor's Fellowship, University of California, Santa Cruz, 2019.
- Student Travel Award, American Control Conference, 2020.

COMPUTER AND PROGRAMMING SKILLS

- **Programming Languages:** MATLAB (Programming and Simulink), MAPLE, C++, ARDUINO, Python
- **Software:**
  - **Engineering and Modeling:** SOLIDWORKS
  - **Simulation and Analysis:** ANSYS, ABAQUS
  - **Grid Generation:** ANSYS Meshing
  - **General:** MS-Word, MS-Excel, Latex