jchai3@ucsc.edu,
(520) 333-8159

Jun Chai

502 Koshland Way
Santa Cruz, CA 95064

OBJECTIVE
Become an automation engineer researching and applying advanced control techniques with high efficiency and safety guarantees.

EDUCATION
UC Santa Cruz (UCSC) — Ph.D in Computer Engineering   (Expected to graduate June 2018, GPA 3.7)
Relevant Graduate Level Courses: Applied Feedback Control; Advanced Algorithm Analysis; Computer Architecture

University of Arizona (UA) — M.S. & B.S. in Mechanical Engineering   (Graduated May 2014, GPA 3.9)
Relevant Graduate Level Courses:
- Digital Control Systems; Control System Design; Hybrid Control Systems; Nonlinear Control Systems
- Fundamentals of Optimization; Survey of Optimization Methods
- Matrix Analysis; Numerical Methods; Advance Engineering Analysis; Finite Element Analysis
- 3D/Planar Computational Multibody Dynamics; Dynamics of Machines; Engineering Component Design

COMPUTER SKILS
MATLAB & Simulink; Latex; Java; LabView; SolidWorks; Auto CAD; Python; ANSYS.

PROJECT AND WORK EXPERIENCES
Hybrid System Laboratory, UCSC   (Graduate Research Assistant, Aug 2014 - present)
- Research on safety and invariance-based control and robustness analysis of hybrid dynamical systems and cyber-physical systems
- Research on event-trigger control of nonlinear dynamical systems using hybrid system tools
- Control algorithm design and parameter optimization analysis on microgrids (DC/AC inversion, DC/DC conversion)
- Dynamic heap sizing of a garbage-collection process in Java programming using control tools
- Teaching Assistant of Discrete Mathematics (Fall 2015, Winter 2016)

Hybrid Dynamics and Control Laboratory, UA   (Graduate Research Assistant, Aug 2012 - May 2014)
- Control algorithm design and algorithm implementation for microgrids (DC/AC inversion, DC/DC conversion)
- Research on safety and invariance analysis of hybrid dynamical systems
- Teaching Assistant of Introduction to Dynamics (Spring 2013) and Dynamics of Mechanics (Fall 2012)

Safety Engineering & Virtual Tech-Crash Lab, SAIC Motor Technical Center, Shanghai, China
      (Laboratory Assistant/Interpreter, Summer 2012)
- Design and perform safety tests/simulations for SAIC vehicles (MG 6) in professional researchers team
- Translate English vehicle safety documents and host chapter vehicle safety law discussions

Engineering Senior Design Team Sponsored by Caterpillar Inc. Proving Ground, UA
      (Mechanical Engineer, Robust Measurement Technique for Rotating Shafts, Sep 2011- May 2012)
- Design and build an automatic mechanism for testing devices for rotating shafts of Caterpillar Inc. equipment
- Manage project schedule and budget
- Generate presentations to customer

Hydrodynamics Laboratory, UA   (Solar Tower Research Assistant, Mar 2011 - May 2012)
- Build small scale models of solar tower power plant
- Perform fluid dynamics testings on solar tower small scale models in subsonic wind tunnel and water tank
- Data acquisition, processing and analysis of testings data

AWARDS
IEEE Student Travel Award (ACC 2014, CDC 2017)
2017 - 2018 Chancellor's Dissertation Year Fellowship at UCSC (2017)
Best presentation award in academic conferences (ACC 2014)
Aerospace and Mechanical Eng. Department Graduate School Fellowship at UA (2013)
Graduate with Honor at UA (2012)
Voltaire Design Award at UA (2012)
Dean's List at UA (2009 - 2012)

PATENT AND PUBLICATIONS
US Patent: Robust single-phase DC/AC inverter for highly varying DC voltages, US Pat. No. 9876442, 2018.
Please see a complete list at https://hybrid.soe.ucsc.edu/chai