

Dennis Wai

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Objective: To obtain a summer internship with opportunities to apply sensing and autonomous controls

Education: PhD Mechanical Engineering University of California Berkeley | GPA 3.91 Expected: 2018
B.S. Mechanical Engineering University of California Berkeley | GPA 3.81 2013

Professional Experience

JPL Summer Internship with Eric Kulczycki, under Jeffrey Hall Jun 2014 – Aug 2014

- Kinematic analysis of a 3/4 degree of freedom robotic arm to determine workspace accessibility in the Mars Sample Transfer Chain, which involves transferring a cache from one rover to another so that the cache can be returned from Mars to Earth
- The analytical work convinced the Mars Program Office that the mission was feasible and informed them of the arm configuration that should be used

JPL Summer Internship with Paul Backes, JPL Group Supervisor Jun 2013 – Aug 2013

- Assisting in the prototyping of a novel comet sampling tool for the comet surface sample return mission
- Designed and manufactured the electrical control system with pneumatic and solenoid actuators

Undergraduate/Graduate Researcher with Professor Tomizuka, UC Berkeley May 2011 – Present

- Coauthored the publication “A Network-Based Monitoring System for Rehabilitation” for the Advanced Intelligent Mechatronic conference in 2012
- Developed software in Arduino and LabVIEW to manage a wireless sensor network for human motion tracking
- Created and designed various PCBs for controller purposes in Tailbot, a robot with inertial assisted control by an active tail inspired by lizards; Tailbot was also a featured robot on the front page of Nature magazine
- Designed and manufactured a novel “tail backpack” for a remote controlled car to demonstrate pitch-correction
- Coauthored publication in DSCC 2014 on Steady State Marginalized Particle Filters

Space Sciences Laboratory Engineering Assistant, UC Berkeley May 2012 – Present

- Drafted and designed the optical layout for an externally dispersed interferometer attachment for the Lick Observatory's in order to improve its spectral resolution by four folds
- Prepared weekly presentations to update fellow astronomers in hardware developments

Pioneers in Engineering Mentorship Coordinator and Advisor, UC Berkeley May 2011 – Present

- Spearheaded efforts to recruit Berkeley undergraduates to become robotics mentors for underprivileged high school students in our annual 300+ robotics competition
- Managed a 10-person committee in robotics curriculum development for 90+ UC Berkeley undergraduates
- Hosted the inaugural and well-received Robots vs Dinosaur Science Festival, a 100+ event, complete with 8 novel science activities in cooperation with the Lawrence Hall of Science

EE100 Teaching Assistant, UC Berkeley Jun 2012 – Aug 2012

- Taught *Electronic Techniques for Engineering* to 100+ UC Berkeley undergraduates over the summer
 - Prepared discussion, exam reviews, and other curriculum material for students
 - Led weekly discussions, instructional labs, and office hours and was rated as the best Teaching Assistant
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Academic Honors and Extracurricular

Cal Band Trombonist July 2010 - Present

Tau Beta Pi – Engineering Honor Society, Service Chair Jan 2011 – Present

Pi Tau Sigma – Mechanical Engineering Honor Society, Student Service Member Jan 2011 – Present

Charles & Daisee Seffens Scholarship Recipient Aug 2009 – Aug 2012