

## Dennis Wai

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| <b>Objective:</b> | To obtain a summer internship with opportunities to apply sensing and autonomous controls |                |  |
| <b>Education:</b> | PhD Mechanical Engineering University of California Berkeley   GPA 3.91                   | Expected: 2018 |  |
|                   | B.S. Mechanical Engineering University of California Berkeley   GPA 3.81                  | 2013           |  |

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### Professional Experience

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#### 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

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| 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 |