Ray Sun

1200 E. California Blvd., MSC 919 Pasadena, CA 91126


rayjhsun@gmail.com
raysun@caltech.edu


https://www.facebook.com/ray.sun.7921


(909)-525-6506
(Mobile)


www.linkedin.com/in/ray-sun-2020


https://github.com/electronictoast

Summary

Junior electrical engineering student passionate about electronics, robotics, control systems, and embedded systems seeking to advance in varying fields of technology, gain experience, and refine practical skills.

Education

B.S. IN ELECTRICAL ENGINEERING (PROSPECTIVE MINOR IN CONTROL AND DYNAMICAL SYSTEMS) **EXPECTED JUNE 2020**
CALIFORNIA INSTITUTE OF TECHNOLOGY | PASADENA, CA

- GPA: 4.2. Plan to pursue graduate education in robotics or controls.
- Currently teaching assistant for Introduction to Mechatronics (EE/ME 7)

Experience

POWERTRAIN INTERN | AMPAIRE INC. | LOS ANGELES, CA **SUMMER 2018**

- Assembled and validated electric powertrain modules for ground testbed and flight aircraft.
- Assisted with development of Simulink model of powertrain.
- Designed and tested 15 Mbps isolated dual-channel CAN transceiver.

UNDERGRADUATE RESEARCHER | CALTECH AEROSPACE | PASADENA, CA **SEPTEMBER 2017 – MARCH 2018**

- Assisted in development for spacecraft simulator and swarm UAV demonstrations.
- Designed STM32-based second-generation thruster controller boards.

TECHLAB STUDENT STAFF | CALTECH LIBRARY | PASADENA, CA **APRIL 2017 – SEPTEMBER 2017**

- Provided training and assistance to Caltech students and staff in the use of 3D printing resources.
- Maintained 3D printers and fulfilled print job requests.

SUMMER UNDERGRADUATE RESEARCH FELLOW | CALTECH AEROSPACE | PASADENA, CA **SUMMER 2017**

- Development of a 6-DOF spacecraft simulator: assisted with hardware selection; performed thruster characterization; designed low-level thruster controller.
- Collaborated on design of an androgynous docking mechanism for use on multi-agent simulator robots.

ROBOTICS SUMMER CAMP COORDINATOR | DAMIEN HIGH SCHOOL | LA VERNE, CA **SUMMER 2016**

- Planned and managed a five-day robotics summer camp with 80 junior high and high school student participants.
- Design and software skills from competitive robotics, in addition to communication and teaching abilities, ensured a professional competitive robotics event.

Skills

- C/C++, Python; Some Linux, ROS experience
- MATLAB, some Simulink; some control theory
- PCB design; Altium Designer; KiCAD, Eagle
- VHDL
- Arduino, AVRs, STM32, Raspberry Pi
- Machining, laser cutting, 3D printing
- Autodesk Inventor, SolidWorks
- Intermediate German, spoken Chinese

Project Experience and Hobbies

Caltech Formula SAE Team: Designed temperature sensing board and high voltage sensing circuit for electric vehicle battery management system. Most recently I/O board co-lead; designed and verified STM32-based vehicle pedal sensors board.
Caltech Association of Makers: Co-founder and Vice President; seeking to provide a network of resources to university makers of all backgrounds and levels of experience.
VEX Robotics: 3 years of high school competitive robotics experience including mechanical design, programming (C/C++ based), feedback control (PID). Leadership contributed to recognition at regional, state, and World Championship levels.
Recent/ongoing personal projects: AR open-source wearable computer, self-balancing robot (demonstrator for electric Segway vehicle project), Arduino-based AVR target board.