

Ray Sun

rayjhsun@gmail.com | raysun@caltech.edu
(909)-525-6506

LINKS

Github:// [electronictoast](#)
LinkedIn:// [ray-sun-2020](#)
Website: [electronictoast.github.io](#)

EDUCATION

CALTECH

B.S. IN ELECTRICAL ENGINEERING
June 2020 | Pasadena, CA
Cum. GPA: 4.2 / 4.3
Major GPA: 4.1 / 4.3

DAMIEN HIGH SCHOOL

Grad. May 2016 | La Verne, CA

COURSEWORK

ELECTRICAL ENGINEERING

Advanced Digital System Design • FPGAs with VHDL • Analog Design Laboratory • Experimental Circuits Laboratory • Signal Processing • Circuit Analysis

Teaching Assistant

Advanced Embedded Systems • Embedded Systems • Mechatronics

ROBOTICS

Autonomy • Experimental Robotics • Electronics for Space Applications

COMPUTER SCIENCE

Machine Learning • Computing Systems • Algorithms

SKILLS

HARDWARE

Design:

Altium/CircuitMaker • KiCad • EAGLE • LTSpice • Inventor • SolidWorks

Technologies:

Arduino/AVR • STM32/ARM • Embedded wireless • Raspberry Pi • FPGA

Fabrication:

3D printing • Laser cutting • Machining

PROGRAMMING

Languages:

C/C++ • Python • Linux • VHDL • Verilog • Assembly (AVR, ARM, x86)

Other:

ROS • MATLAB/Simulink • \LaTeX

MISCELLANEOUS

General class amateur radio license • GIMP • Control theory

EXPERIENCE

MICRO-VU CORP. | ELECTRICAL ENGINEERING INTERN

Summer 2019 | Windsor, CA

- Provided support for electrical and FPGA firmware development for precision non-contact and multi-sensor measurement machines.
- Designed and prototyped low-latency, fault-robust wireless machine remote.

AMPAIRE INC. | POWERTRAIN INTERN

Summer 2018 | Los Angeles, CA

- Assembled and validated high voltage 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.

CALTECH | TECHLAB STUDENT ASSISTANT

April 2017 – September 2017 | Pasadena, CA

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

RESEARCH

CALTECH MISSION OPERATIONS CENTER

STUDENT TEAM MEMBER

April 2019 – Present | Pasadena, CA

- Collaborating with JPL and University of Michigan on uplink/downlink operations and data analysis of CubeSat missions.

CALTECH AEROSPACE ROBOTICS AND CONTROL LAB

UNDERGRADUATE RESEARCHER

September 2017 – March 2018 | Pasadena, CA

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

SUMMER UNDERGRADUATE RESEARCH FELLOW

Summer 2017 | Pasadena, CA

- Assisted development of a 6-DOF spacecraft simulator robot: assisted with hardware selection; performed thruster characterization; designed low-level thruster controller board.

ACTIVITIES AND ORGANIZATIONS

IEEE : Chair of the Caltech IEEE student branch, leading committee organizing events for networking, outreach, and education.

Caltech Formula SAE Team : Designed temperature sensing board and high voltage sensing circuit for 2nd generation electric vehicle battery management system. Designed, verified, and integrated 3rd-generation STM32-based vehicle pedal sensors board; designed 4th generation board.

Team CoSTAR : Student member of Caltech DARPA Subterranean Challenge team, working on hybrid ground-aerial vehicle prototype.

Hacktech : Organizer of intercollegiate hackathon; 3 years of involvement.

Tau Beta Pi : Member of engineering honor society, Secretary of Caltech chapter.

Personal Projects RGB LED music visualizer | AR wearable computer with transparent display | Segway self-balancing robot | Analog function generator.