

Luke T. Rooney

Berkeley, CA & Valencia, CA
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Education

University of California, Berkeley | Berkeley, CA
B.S. *Electrical Engineering & Computer Science*

GPA: 3.61

Expected Graduation: May 2020

College of the Canyons | Valencia, CA
A.S. *Physics, A.S Mathematics*

GPA: 4.0

Graduation: May 2018

Work Experience

NASA's Jet Propulsion Laboratory | Pasadena, CA

September 2016 - July 2018 & Summer 2019

Electrical Systems Engineering Intern - Mars 2020 & NISAR Observatory

- Employed as a year-round intern for 2 years totaling over 2000 hours of on-site job experience
- Responsible for maintaining over 700 pages of drawings and 1200 spacecraft electrical functionalities for the NISAR and Mars 2020 flight projects
- Utilized ICDs, block diagrams, and requirements documents to perform system-wide verification of electrical interfaces
- Modeled flight system harnesses for robustness against signal noise, off-nominal voltage/current, thermal faults, and EMI/EMC interference
- Designer of over 30 engineering drawings and 100 Visio circuit drawings for power, telemetry, pyrotechnic, guidance, RF, and instrument subsystems
- Wrote a Python script to check revision differences for a large document that models flight system electrical interfaces

Various Service Industry Positions

February 2014 - July 2017

Side Projects

Autonomous Quadcopter | github.com/ltrooney/quadcopter

July 2017 - June 2018

- Designed power, sensor, and motor electronics configuration
- Wrote custom Arduino C++ flight computer code to send motor commands, establish RC controller communication, monitor battery voltage, and interpret sensor data
- Implemented and manually tuned a 250 Hz PID feedback control loop to achieve autonomous stabilization behavior
- Performed end-to-end testing and added software fault protection for human and system safety

Hack Computer

April 2016 - August 2016

- Designed RAM/ROM and CPU in a hardware description language with modules including sequential chips, an ALU, control logic, and I/O memory mapping
- Integrated and tested a hardware/software abstraction underlying a 16-bit architecture
- Constructed a fully functional assembler, virtual machine, compiler, and operating system in Java

My Website | www.thelukerooney.com

January 2019 - March 2019

- Built a static webpage from scratch utilizing HTML/CSS/JavaScript, including the Bootstrap and JQuery libraries

Relevant Coursework

- Structure and Interpretation of Computer Programs • Data Structures • Artificial Intelligence • Design of Information Devices & Systems I/II • Discrete Math & Probability Theory • Computer Vision • AP Computer Science

Skills

Most proficient with: Java, Python, C/C++, HTML/CSS, Mentor Graphics Capital Logic, Microsoft Office Suite

Some experience with: Matlab, Scheme, JavaScript, Bash, MagicDraw (SysML)

Dabbled with: Ruby, Swift, Django, SQL

Awards and Honors

Recipient of the "Most Inspirational" Award | *Varsity Football, West Ranch High School*

December 2014

- Awarded for demonstrated leadership ability as team captain of varsity team of over 50 players

References

Available upon request.