


Luc Bouchard

lucbouchard1.github.io

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 lucbouchard1

Education

Cal Poly, San Luis Obispo

BS in **Physics**, Minor in **Computer Science**

Graduated June 2019

GPA: **3.7**

Oregon State University

MS in **Computer Science**

Graduating June 2021

Graduate GPA: **4.0**

Skills

Languages	C/C++	Typescript	Python	Java	Bash	MatLab	JavaScript	GNU Make	
Web	React	Electron	HTML	CSS	Webpack	npm	Redux	zmq	Protobuf
Other	Kalman Filters	Linux	U-Boot	Buildroot	OpenWRT	git	gdb	CI/CD	Jupyter

Projects

- **CubeSat ADCS** - Developed and tested an attitude determination and control system for CubeSats. Implemented Extended Kalman Filter in C. Wrote testing framework using Python, zmq, Google Protobufs, and Nasa 42.
- **MT7688 U-Boot** - Added U-Boot bootloader support for MT7688 SoC. Implemented several platform-specific features to improve boot performance of an embedded system.
- **PolySat Bootstrap** - Refactored CubeSat bootloader to support new memory architecture.
- **Memory Scrubbing** - Wrote a program in C to repeatedly validate a CubeSat's non-volatile memory to mitigate radiation upsets.
- **PPS Device Driver** - Wrote Linux kernel module that handles interrupts from a GPS's pulse-per-second line. Used to synchronize system clock.
- **JupyterLab Native** - Used Electron to create a native version of JupyterLab, a popular data science platform that runs in the browser.

Experience

Joby Aviation Software Intern

Summer 2019

Electric Airplane Startup

- Developed systems software for an innovative electric passenger airplane.
- Refactored core libraries to improve reusability and safety.

Fullpower Technologies Firmware Intern

Summer 2018

IOT Hardware and Software Company

- Extended U-Boot bootloader to improve boot times of a consumer embedded system, the Sleeptracker Monitor.
- Met strict deadlines in anticipation of mass manufacturing runs.
- Improved boot time translated to large reductions in manufacturing cost.

PolySat Software Team Lead

September 2015 - June 2019

Cal Poly Satellite Research Lab

- Led developers to create flexible, fault tolerant, and reusable systems software for CubeSats.
- Worked with multidisciplinary team of engineers to fund, design, and assemble multiple satellites including PolySat's ISX, Exocube 2, DAVE, and LEO.
- Tested and integrated hardware in a cleanroom. Performed vibration and TVAC tests.
- Met requirements set by large organizations like NASA and Northrup Grumman.

Project Jupyter Software Engineer

April 2017 - November 2017

Open Source Interactive Computing Project

- Contributed to JupyterLab, an open source data science platform with millions of users.
- Developed JupyterLab Native using Typescript, Electron, and React.

Honors

- Dean's List and President's List for all terms.
- William L. Frost Scholarship recipient.