Luc Bouchard

lucbouchard1.github.io

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 lucbouchard1

Education

Cal Poly, San Luis Obispo　　　　　　　　　　　　　　　Graduated June 2019
BS in **Physics**, Minor in **Computer Science**　　　　　　　　　　　GPA: **3.7**

Oregon State University　　　　　　　　　　　　　　　　Graduating June 2021
MS in **Computer Science**　　　　　　　　　　　　　　　Graduate GPA: **3.8**

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. Implemeted 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

Graduate Research Assistant　　　　　　　　　　　　　　　2019 - 2020
Oregon State University
- Developed and implemented algorithms for a novel free space optical communication system.
- Characterized system performance in lab and analyzed data in advance of publication.

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.

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.

Honors

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