Luc Bouchard

lucbouchard1.github.io

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Education

Cal Poly, San Luis Obispo *3rd Year | June 2019 Graduation*

BS in **Physics**, Minor in **Computer Science** *Overall GPA: **3.8***

Completed Coursework: Programming Series, Systems Programming, Advanced Classical Mechanics, Solid State Physics, Electronics Lab

Skills

Languages	C/C++	Typescript	Python	Java	Bash	MatLab	JavaScript	GNU Make	
Web	React	Electron	HTML	CSS	Webpack	npm	Redux	zmq	Protobuf
Other	Linux	Buildroot	git	GitHub	GitLab	Subversion	gdb	CI/CD	Jupyter

Projects

- **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.
- **Userspace Device Drivers** - Wrote several userspace device drivers in C to interface with GPS's, magnetometers, power sensors, solar angle sensors, memory devices, etc.
- **CubeSat ADCS** - Developed an attitude control system for a CubeSat. Wrote testing framework using zmq, Google Protobufs, and MatLab.
- **JupyterLab Native** - Used Electron to create a native version of JupyterLab, a popular data science platform that runs in the browser.

Experience

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.

PolySat Software Team Lead *September 2015 - Present*

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.

Northrop Satellite Lead *September 2016 - Present*

3U CubeSat with Northrop Grumman

- Led a team of multidisciplinary team of engineers to design a spacecraft intended to launch in 2018.
- Worked with Northrop employees to manage spacecraft requirements and funding.
- Adhered to systems engineering practices.

Fullpower Technologies Intern *Summer 2014 & 2015*

IOT Software Company

- Assisted engineers in developing prototypes for a project with a short timeline.
- Wrote Python scripts to streamline testing and development.
- Wrote a web server for BeagleBone Blacks to allow for quick diagnostics and testing.

Honors

- William L. Frost Scholarship Recipient - Cal Poly