Luc Bouchard

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Education

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

Oregon State University — Graduated June 2021
MS in Computer Science — GPA: 3.7
Interests: Statistics, Data Science, Stochastic Systems, Information Theory, Programming Languages

Skills

Languages TypeScript JavaScript C/C++ Python Java Bash SQL HTML CSS MatLab Haskell
Web React GCP AWS Node Webpack Redux Flask Firebase Express.js Jinja
Other Statistics Embedded Systems Data Analysis Controls Linux U-Boot git Github Jira CI/CD Jupyter

Experience

SpaceX — November 2021 - Present
Firmware Engineer
- Parallelized initialization sequence on next-generation Starlink satellite phased array antennas to reduce boot time and increase developer productivity.
- Developed software to control Starlink satellite actuators and relay telemetry to the flight computer.
- Wrote a low-power demonstration application for an STM32 microcontroller to send GPS location over LoRA.
- Worked remotely on a complex project with a large team of engineers.

Oregon State University — September 2019 - June 2021
Graduate Research Assistant
- Applied statistical algorithms to develop a novel free space optical communication system.
- Measured digital transmission metrics like SNR and BER in lab and analyzed data for publication.

Graduate Teaching Assistant
- Taught and graded introductory courses for online data science MS program.

Joby Aviation — Summer 2019
Embedded Software Intern
- Developed embedded software for an innovative electric passenger airplane.
- Refactored core libraries to improve reusability and safety.

Fullpower Technologies — Summer 2018
Embedded Software Intern
- Extended U-Boot bootloader to improve boot times of a consumer embedded system, the Sleeptracker Monitor.
- Implemented several platform-specific features to improve boot performance of an embedded system.

Project Jupyter — April 2017 - November 2017
Frontend Software Engineering Intern
- Did frontend web development for JupyterLab, an open-source data science platform with millions of users.
- Used Electron to create a native version of JupyterLab. Added native UI features using React.
- Worked directly with design team to create a compelling user experience.

Cal Poly Satellite Research Lab — September 2015 - June 2019
Software Team Lead
- 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.
- Developed and tested an attitude determination and control system for CubeSats.
- Wrote Linux kernel module to handle interrupts from a GPS's pulse-per-second line and synchronize the clock.

Honors

- Graduated with Honors.
- William L. Frost Scholarship recipient.