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, Stochastic Systems, Information Theory, Programming Languages, Functional Programming

Skills

Languages	C/C++ Python MatLab Simulink TypeScript JavaScript SQL HTML CSS Haskell
Tools	React GCP AWS Node Webpack Redux Flask Firebase Express.js Pandas Matplotlib Jinja
Other	Power Systems Embedded Systems Statistics Data Analysis Controls Linux U-Boot git Jira Jupyter

Experience

Saildrone
Firmware Engineer — January 2023 - present

- Designed, characterized, and implemented a state-of-charge estimator for a custom battery system.
- Wrote simulink software to control a deisel generator and generate power according to battery charging specifications.
- Contirubted to a custom embedded software framework for STM32 and K10 based single-board computers.
- Wrote C++ software for FreeRTOS and embedded Linux based computers to control an autonomous sailboat.

SpaceX
Firmware Engineer — November 2021 - July 2022

- Parallelized initialization sequence on next-generation Starlink satellite phased array antennas to reduce boot time.
- 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.

Oregon State University
Graduate Research Assistant — September 2019 - June 2021

- 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
Embedded Software Intern — Summer 2019

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

Fullpower Technologies
Embedded Software Intern — Summer 2018

- Brought-up newer U-Boot bootloader to improve boot times of a consumer embedded system.
- Met strict deadlines in advance of a mass-manufacturing run.

Project Jupyter
Frontend Software Engineering Intern — April 2017 - November 2017

- Did frontend web development for JupyterLab, an open-source data science platform with millions of users.
- Worked directly with design team to create a compelling user experience.

Cal Poly Satellite Research Lab
Software Team Lead — September 2015 - June 2019

- Worked with multidisciplinary team of engineers to fund, design, and assemble multiple satellites.

Other

- Cal Poly William L. Frost Scholarship recipient.
- Hobbies: Running, Basketball, Music, Reading