ERIC SOUDER

(604) · 219 · 5682 ⋄ eric@souder.ca

EDUCATION

University of British Columbia *September 2020 - Present*
BASc in Engineering Physics

EXPERIENCE

Moon and Mars Industries *Vancouver, BC*
Avionics Engineer *January 2023-Present*

- Designed, built, and validated the STM32 microcontroller-based flight computer for a liquid bipropellant suborbital vehicle using KiCad.
- Developed modular and efficient C++ firmware from the ground up based on the ARM CMSIS layer, from build toolchains to real-time task scheduling to high-level flight logic.
- Designed and built an automated firmware and hardware continuous integration test system using Make and Unity for C++ unit testing and PyTest for hardware-in-the-loop tests.

UBC Rocket *Vancouver, BC*
Avionics Team Lead - Firmware *September 2020-Present*

- Managed a team of 5 engineers and computer scientists developing firmware and hardware designed to take a rocket to the edge of space and back.
- Overhauled CMake build system and refactored C code into manageable and testable libraries.
- Developed several critical components of the flight firmware in C using FreeRTOS and MCUXpresso, including state machines and communication interfaces.

Zaber Technologies *Vancouver, BC*
Embedded Firmware Co-op *January - April 2022*

- Developed firmware and tests for Zaber's motion control devices using C++, Make, Python, and GDB.
- Lead feature development from stakeholder consultation to code delivery, enabling enhanced modes of sub-micron device calibration.
- Worked within the agile methodology to create and resolved tickets, investigate bugs, and run standup and sprint planning meetings.

PROJECTS

Autonomous Robot Project *Summer 2022*
ENPH 259 - Instrument Design

- Developed C++ firmware to allow a small robot to autonomously navigate an obstacle course using sensor fusion and PlatformIO.
- Designed high-level software and hardware architectures using a modular infrastructure for rapid development and prototyping.
- Designed and manufactured motor driver and main computer PCBs with Altium Designer.

TECHNICAL STRENGTHS

Languages	C++, C, Python, Bash, MATLAB, Java, Javascript, HTML/CSS
Technologies	UART, SPI/isoSPI, CAN, I2C
Tools & OS	Altium, KiCad, GDB, Git, Jenkins, Make, Cmake, Linux, Windows