

Profile

Embedded Software Engineer with 4 years of experience developing production-grade C/C++ software for microcontrollers and Linux environments. Demonstrated success in leading teams, mentoring interns, and managing complex firmware projects from design to deployment. In my spare time I enjoy skiing in the Rocky Mountains and experimenting with generative AI. *Based in Calgary, Canada, and seeking opportunities locally, nationally, and internationally.*

Education

Bachelor of Science in Computer Science – University of Calgary

May 2018 – May 2022

President of the Computer Science Undergraduate Society, NSERC Undergraduate Student Research Award.

GPA: 3.49/4.00

Work Experience

Firmware Engineer – Simply Embedded

Jan 2021 – May 2024

- **Firmware Development:** Engineered robust RTOS C/C++ firmware solutions on 32-bit ARM microcontrollers, ensuring high reliability. Utilized Linux as a primary development environment and maintained professional version control with Git.
- **Network Protocol Integration:** Utilized TCP/IP, UDP, and DNS protocols to ensure stable and secure data transmission in IoT applications over CAT-M LTE networks. Developed robust communication features with advanced error handling, encryption, and data management practices to maximize connectivity reliability in variable network conditions.
- **Python Development:** Developed automated test suites in Python to validate embedded IoT applications' cloud interactions, ensuring reliable data transmission and secure communication.
- **Technical Leadership:** Led the interview and selection process for five engineering interns, providing hands-on training in firmware development and debugging to ensure they quickly became productive team members.
- **RTOS Development:** Developed and maintained drivers for peripherals (DAC, ADC, modem, ect.) within a FreeRTOS environment, ensuring seamless hardware-software integration.
- **Quality Assurance:** Conducted thorough unit testing and collaborated closely with the QA team to ensure high-quality firmware releases. Collaborated with Electrical Engineers in developing firmware for hardware test fixtures.
- **Advanced Debugging Techniques:** Expert in utilizing GDB to debug microcontrollers, often at the assembly level. Employed logic analyzers and oscilloscopes to debug digital signal protocols (UART, SPI, I2C, CAN).

Research in Theoretical Computer Science – NSERC Research Award

Sept 2021 – Apr 2022

- **Mathematical Research:** Studied computational number theory under Dr. Michael J. Jacobson, using algorithms and computational methods to explore Aliquot sequences, contributing to the understanding of their statistical properties.
- **High-Performance Compute:** Developed scalable and parallel algorithms in C and OpenMP, effectively leveraging an 800GB RAM, 80-thread research cluster to optimize the computation of Aliquot sequences.
- **Comprehensive Documentation:** Produced a thorough undergraduate thesis and Doxygen-generated code documentation, providing a clear foundation for future research on Aliquot sequences.

	Skills	Tools / Libraries
Firmware	C, C++, ARMv8 Assembly, Makefile, CMake	JLink, GDB, STM32Cube, MCUXpresso
Networking	TCP/IP, UDP, DNS, MQTT, SSL	Wireshark, Azure, QEMU
Software	Python, Bash, Java, Javascript, CI/CD	Git, Jenkins, GitHub, Azure, Wireshark

Retail Sales Staff – Camper's Village

May 2014 – July 2021

- **High Service Sales:** Engaged with customers to understand their requirements and recommend the best camping products.

Other Experience

President – Computer Science Undergraduate Society

Sept 2020 – Feb 2021

- **Organized CalgaryHacks 2021:** Led a 20-member volunteer team, bringing together over 700 participants and distributing \$15,000 in prizes, fostering growth in Calgary's tech community.
- **Stakeholder Communication:** Managed sales, from package development to payments, with outside sponsors. Facilitated regular meetings with the Computer Science Department to report on club activities.