

Profile

Embedded Software Engineer with 3 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. Professionally utilized git for version control, managed devops and releases with Jenkins.
- **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.
- **Peripheral Driver Development:** Developed and maintained drivers for peripherals (audio, display, touch, modem, secure element, IMU) within a FreeRTOS environment, ensuring seamless hardware-software integration.
- **Advanced Debugging Techniques:** Utilized logic analyzers and oscilloscopes to debug bus protocols (UART, SPI, I2C, CAN). Employed emulation tools like QEMU to debug and validate driver quality.
- **Mentorship and Hiring:** 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.
- **Network Programming:** Utilized TCP/IP stack and security protocols to manage secure communications. Managed LTE modem integration and SIM card provisioning, ensuring robust connectivity in diverse network environments.
- **Client Engagement:** Excelled in client interactions, from cold conversations at tradeshow (CES 23/24) to in-depth meetings during international trips. Experienced in converting customer business needs to concrete development objectives.

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 |
| Hardware | Schematic reading, Protocols (UART, I2C, SPI) | Logic analyzer, Oscilloscope, 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.
- **COVID-19 Adaptation:** Successfully transitioned CalgaryHacks to a remote format, leveraging Discord and Zoom for seamless event execution, communication, and judging.