Gavin Guinn – *221 6 Ave SE, Calgary, Canada*

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Profile

Embedded 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 spending my time 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

GPA: 3.49/4.00

Work Experience

Firmware Engineer – Simply Embedded
Jan 2021 - May 2024

- **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.
- **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 Security:** Utilized TCP/IP stack and security protocols to manage secure communications, including certificate management. Developed OTA firmware updates as a key feature, ensuring reliable deployments over HTTPS.
- **Client Engagement:** Excelled in client interactions, from cold conversations at tradeshows (CES 23/24) to in-depth meetings during international trips. Experienced in converting customer business needs to concrete development objectives.
- **Testing Automation:** Created a self-testing system for PCBA peripherals, automating device commissioning and ensuring readiness for shipment.
- **Project Management:** Led a team of two university interns to successfully integrate an ST RFID reader evaluation board with an in-house development board, utilizing the onboard cellular modem for cloud data offloading.
- **Advanced Debugging Techniques:** Utilized logic analyzers, oscilloscopes, and emulation tools like QEMU to debug and validate driver quality. Implemented debug control with JLink and GDB server, successfully flashing and debugging firmware.

Retail Sales Staff – Camper's Village
May 2014 - July 2021

- **Customer Assistance:** Assisted customers in purchasing outdoor hard goods, from personalized multi-hour outfitting to quick assistance finding items.
- **Sales Goals:** Leveraged personal passion for hiking to develop strong customer relationships, consistently surpassing sales goals.

Other Experience

President – Computer Science Undergraduate Society
Sept 2020 - Feb 2021

- **Led Calgary Hacks 2021:** Coordinated a remote-first event with over 700 participants, awarding $15,000 in prize money.
- **Team Leadership:** Directed a team of 20 executives and volunteers to ensure smooth event operations.
- **Stakeholder Communication:** Facilitated regular meetings with the Faculty of Science and the Department of Computer Science.
- **Sponsorship Management:** Developed sponsorship packages, managed sales from initial meetings to final payments, and maintained a CRM.

Project in Theoretical Computer Science – NSERC Undergraduate Student Research Award
Sept 2021 - Apr 2022

- **Supervised Research:** Collaborated with Dr. Michael J. Jacobson on computational number theory, focusing on the statistical properties of Aliquot sequences.
- **High-Performance Computing:** Utilized 800GB of RAM and 80 threads on the university's bigmem research cluster to compute Aliquot sequence properties up to 240.
- **Literature Synthesis:** Developed a deep understanding of existing statistical results on Aliquot sequences to extend and generalize their properties.

Skills

Programming Languages	Skills	Tools
C, C++, ARMv8 Assembly	Firmware Development, Hardware Debugging	Jlink, GDB, STM32Cube, MCUXpresso
Python, Bash, Makefile, CMake	Linux Programming, Cloud computing	Logic Analyzers, Oscilloscopes, QEMU
Java, Javascript, HTML, CSS	Web development, Public speaking	Git, Jenkins, GitHub