# Gavin Guinn – Embedded Software Developer

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## Profile

Data-driven firmware engineer with a strong analytical foundation, I bring large-scale data analysis skills in Python and SQL. Demonstrated success in leading teams, mentoring interns, and managing complex firmware projects from design to deployment. In my spare time I enjoy skiing the Rocky Mountains and experimenting with generative AI.

## 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

### Embedded Firmware Developer – 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.
- **Data Analysis with Python:** Leveraged Python to automate product testing as part of manufacturing. Built processes to extract and store device test output to ensure traceable QC processes.
- **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.
- **Quality Assurance:** Conducted root-cause analysis on device telemetry data to identify inconsistencies, I collaborated closely with the QA team to document issues and implement solutions.
- **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.
- **Data Management:** Utilized SQL for querying and managing device telemetry data stored in Azure. Analyzed large datasets to conduct root-cause analysis and work closely with the QA team to document issues and implement solutions.
- **Agile Project Management:** Experienced in software development environments, from collaborating on Git-based projects with teams of 20+ members to leading a small agile team with Jira to deliver a prototype product.

### 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** |
|---|---|---|
| *Programming* | C/C++, Java, Web development, Bash | Linux, Windows, Github, Docker, VS Code |
| *Data Analysis* | Python, SQL, Excel, Telemetry analysis | Azure, SQLite, OpenAI API, Jupyter |
| *Project Management* | Agile methodologies, Sprint planning, QA | Jira, Microsoft Teams, Smartsheet |

### Retail Sales Staff – Camper's Village

May 2014 - July 2021

- **High Service Sales:** Engaged with customers to understand their requirements and offer tailored advise on camping equipment.

## 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.