Gavin Guinn – Embedded Software Developer

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Profile

Professional with over 3 years experience in embedded software development (C/C++), system testing, and hardware validation. Experienced in working within professional software QA processes to document, track, and resolve bugs, driving solutions and improving product quality. Skilled in designing test plans, validating complex IoT systems, and using Python to automate testing processes. Passionate about leveraging testing expertise to enhance system performance and reliability.

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 Software Developer – Simply Embedded

Jan 2021 - May 2024

- **System Testing and Validation:** Designed and executed system-level test plans covering embedded firmware, hardware, and user interfaces. Conducted regression testing to ensure consistent performance across updates.
- **Firmware Development:** Built and tested robust RTOS-based firmware solutions in C/C++ for ARM microcontrollers. Debugged hardware-software interactions using tools like GDB, JLink and logic analyzers.
- **Quality Assurance:** Developed and executed test plans to validate circuit boards and commission assembled products. Designed comprehensive validation checklists, including over 50 criteria, to ensure products shipped to the customer were consistent.
- **Python Development:** Forked a substantial open-source Python project, using OOP design principles to customize the tool for internal QA use. Extensively used Python to unit-test the network-based features of embedded devices.
- **Debugging Electrical Systems:** Experienced with debugging digital electrical systems, including analyzing schematics, and troubleshooting circuits. Skilled in using tools like multi-meters and oscilloscopes, as well as basic soldering to validate hardware.
- **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.
- **GUI Design:** Led the development of user interfaces for multiple embedded projects, developing resource constrained GUI's using LVGL. Worked iteratively with clients to refine device HMI, ensuring our products are accessible.

Research Assistant – University of Calgary

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**
Testing & QA	Test Planning, Regression Testing	Python, Jira, Git, Jenkins
Embedded Systems	C/C++, ARM Microcontrollers, FreeRTOS	JLink, Logic Analyzers
Hardware Expertise	Schematics, Serial Communication (I2C, SPI, ect.)	Multimeters, Oscilloscopes, GDB

Retail Sales Staff – Camper's Village

May 2014 - July 2021

- **Customer Service:** Built rapport with customers, identifying needs and recommending outdoor equipment solutions.

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.