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

Firmware Engineer – Simply Embedded

- **Total Employment Period:** January 2021 - May 2024
- **Full-time Employment:** July 11, 2022 - May 24, 2024
- **IoT Wearable Project:**
  - GUI Development: Rendered MQTT messages into interfaces using LVGL widgets, sending responses to the cloud.
  - Network Connectivity: Addressed challenges with diverse cellular operators, especially network time and instability issues in the UK.
  - Testing Automation: Created a self-testing system for PCBA peripherals, automating device commissioning and ensuring readiness for shipment.
  - Azure Debugging: Used Azure and Python scripts to improve cloud-driven UI testing, developing extensive test cases with ChatGPT.
  - Driver Development: Developed drivers for sound (DMA), modem (AT commands over UART), touch and display (SPI), and secure element (I2C).
  - Team Collaboration: Coordinated with management and a global team across time zones.
  - Time Management: Delivered prototype hardware under tight deadlines.
  - Remote Collaboration: Used Jira, Bitbucket, and Jenkins for agile project management, version control, and continuous integration.
- **Mentorship:**
  - Mentored Hassan through firmware internship: January 7, 2024 - May 24, 2024
  - Mentoring Winston and Carsen through high school internship: July 1, 2022 - September 1, 2022
  - Interviewed candidates for firmware internship position, mentored successful candidates: Moaz, Heidi, and Issam
  - Interviewed candidates for firmware internship position, mentored successful candidate: Mai: April 6, 2023 - April 13, 2023
- **Project Management:**
  - Smart Energy Metering Project: January 24, 2022 - May 1, 2022
  - Long-Range RFID Project: November 1, 2022 - March 1, 2023
  - Avatar2: A Multi-target Orchestration Platform: March 30, 2024 - May 24, 2024
- **Trade Show Sales:**
  - IoT North Conference 2023: November 15, 2022 - November 16, 2022
  - CES 2023: January 4, 2023 - January 9, 2023
  - CES 2024: January 7, 2024 - January 13, 2024
- **Business Trips:**
  - Timisoara, Romania: January 20, 2023 - January 29, 2023
  - England (London and Epworth): December 10, 2023 - December 16, 2023

Retail Sales Staff - Camper's Village

- May 1, 2014 - July 1, 2021
- **Customer Assistance:** Assisted customers in purchasing outdoor hard goods, from personalized multi-hour outfitting to quick assistance finding items.
- **Product Knowledge:** Utilized product information provided by brands and representatives to offer detail-oriented assistance.
- **Sales Goals:** Leveraged personal passion for hiking to develop strong customer relationships, consistently surpassing sales goals.

Education

University of Calgary

Bachelor of Science in Computer Science
GPA: 3.49/4.00
May 2018 - May 2022

- **President, Computer Science Undergraduate Society**
  - September 1, 2020 - February 1, 2021
  - Coordinated a remote-first event with over 700 participants, awarding $15,000 in prize money.
  - Adapted Event Format: Successfully pivoted from in-person to remote format, utilizing Discord for enrollment and

communication.
  - Efficient Judging Coordination: Managed the judging of 93 groups via Zoom within 2 hours with a meticulous plan.
  - 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.
  - Cold Lead Conversion: Effectively converted cold leads into sponsors through strategic communication.
  - COVID-19 Navigation: Successfully navigated society activities and stakeholder communications through pandemic challenges.
  - Hackathon Link
- **Undergraduate Research Project in Theoretical Computer Science**
  - September 1, 2021 - April 1, 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.
  - **Code Optimization:** Systematically rewrote a C implementation, achieving over a tenfold increase in performance.
  - **Literature Synthesis:** Developed a deep understanding of existing statistical results on Aliquot sequences to extend and generalize their properties.
  - **System Resource Optimization:** Rewrote legacy code to utilize RAM over disk, significantly improving performance.
  - **Algorithmic Improvements:** Implemented memory compression algorithms, enabling higher bounds in numerical computations.
  - **Cluster Management:** Managed multi-day jobs on a research cluster using the SLURM scheduler.
  - **Parallel Programming:** Developed parallel code using OpenMP, addressing reentrancy issues with shared memory access between threads.
  - **Project Documentation**

Skills

- Presented talk on the utility of GPT-4 for software development: May 17, 2023
- Delivered a presentation on how LLM's work to a general audience at the Calgary Public Library: April 7, 2024
- Programming Languages: C, Python, Bash
- Tools: STM32Cube, Jlink, GDB, Azure, SLURM, OpenMP, Jira, Bitbucket, Jenkins
- Project Management: Agile methodologies, team leadership, stakeholder communication
- Public Speaking: Presentation skills, technical communication
- Hardware Debugging: Logic analyzers, oscilloscopes