Jason Fevang | Resume

Software Engineer

Software: C++11/20, Python, FreeRTOS
Hardware: ESP32/8266, STM8, PWM
Protocols: UART, SPI, I2C, UDP/HTTP (LwIP Sockets)
Tools: Oscilloscopes, Logic Analyzers, Agentic AI, Unit Testing (Pytest/GTest)

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Summary

I'm a computer engineering graduate with seven years of experience in systems-level and embedded development working with C++20 and Python. My background includes building firmware to drive LEDs on FreeRTOS+ESP32 and baremetal STM8. I'm currently implementing data formats focused on memory safety, security, and performance at Safe Software.

Work Experience

C++ Software Developer - Safe Software — 2022 - Current (3.5 years)

· Developed high-performance features for a cross-platform enterprise application using C++20, prioritizing memory safety, system reliability and protection against security vulnerabilities.

· Managed the full software development lifecycle, including code reviews and CI/CD pipelines, while maintaining detailed documentation for all tasks to ensure technical clarity and traceability.

· Spearheaded an AI-augmented development workflow using agentic tools (Claude-Code, Copilot) and authored a suite of shell scripts to automate repetitive development tasks, increasing team velocity.

Embedded Software Developer - Better Way Lighting — 2019 - 2022 (3 years)

· Led board bring-up for new hardware, validating and troubleshooting with oscilloscopes and logic analyzers.

· Integrated hardware components including displays(SSD1306, ILI9341), sensors, and communication modules, utilizing UART, SPI, and I2C protocols.

· Collaborated with electrical engineers and designers to develop firmware with real-time constraints for lighting products used in major film productions.

· Oversaw work terms for four software co-op students performing interviews, performance reviews, mentorship and project management.

Projects

Optimize GIS PointCloud Network Access - Safe Software — 2025

· Built a high-performance C++ implementation of Cloud Optimized Point Cloud(copc.io), using an octree to spatially index datasets upwards of 1B points.

· Optimized remote datasets with HTTP/FTP range requests and over-fetching, avoiding full-file downloads.

LimeLite LED Panel Firmware - Better Way Lighting — 2022

· Architected ESP32 firmware on FreeRTOS to handle real-time lighting data over UDP (sACN/Artnet), physical DMX512, and an external networking device via SPI(CRMX), using all custom libraries.

· Implemented closed-loop thermal control with thermistors and PWM-driven fans, including ramp-up logic.

· Engineered a high-fidelity LED driving system using variable PWM with gamma correction and look-up tables for color mixing and panel-specific calibration to achieve >95 CRI white light across the spectrum.

STM8 Decoder Firmware and Bootloader - Better Way Lighting — 2022

· Developed custom firmware in C for STM8 microcontrollers, implementing DMX512 receive via UART and driving character displays and LEDs through low-level GPIO and TIM timer peripherals.

· Wrote a custom bootloader and programmer (ESP32) supporting custom commands for field updates.

Education

BASc Computer Engineering - Simon Fraser University — 2015 - 2019

· Bachelor of Applied Science, Computer Engineering (With Distinction), 3.92 GPA