

# 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 work experience in embedded and enterprise development with C++ and Python. I've developed firmware for professional LED lighting products 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.
- Implemented 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 productivity.

### Embedded Software Developer - Better Way Lighting

2019 - 2022 (3 years)

- Performed 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.

## Selected Projects

### Optimize GIS PointCloud Network Access - Safe Software

2025

- Built a high-performance C++ implementation of Cloud Optimized Point Cloud ([copc.io](https://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 - [link](#) - Better Way Lighting

2022

- Architected ESP32 firmware on FreeRTOS to handle real-time lighting data over UDP ([sACN](#)/[Art-Net](#)), physical DMX512, and an external networking device via SPI ([CRMx](#)), writing all 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 - [link](#) - 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