JULIAN MERCER

EMBEDDED SYSTEMS ENGINEER

San Francisco, CA | (415) 555-0148 | julian.mercer@email.com | linkedin.com/in/julianmercer

PROFESSIONAL SUMMARY

Embedded Systems Engineer with 9+ years writing C and C++ firmware for microcontrollers in consumer and wearable devices. Delivers low-power, well-tested code, debugs hardware and software issues together, and supports products through certification and production.

CORE SKILLS

C | C++ | ARM Cortex-M | FreeRTOS | Microcontrollers | I2C, SPI, and UART | Bluetooth Low Energy | Low-power design | JTAG and GDB debugging | Oscilloscopes and logic analyzers | Python | CMake and Make | Unit testing | Bootloaders | MISRA C

PROFESSIONAL EXPERIENCE

Senior Embedded Software Engineer May 2021 - Present
Bose, Framingham, MA

- Developed C++ firmware for Bluetooth audio products on ARM Cortex-M processors, shipping three product updates without field recalls.
- Reduced standby current by 28% through sleep-mode tuning, peripheral gating, and an interrupt-driven redesign of the sensor loop, extending battery life between charges.
- Built hardware-in-the-loop tests with Python and a CI server that caught 60 regressions before manufacturing release.
- Led firmware design reviews with hardware and test teams and helped trim bring-up time for a new board from five weeks to three.
- Implemented secure over-the-air updates with signed images and rollback, reaching a 99% update success rate in the field.
- Mentored two junior engineers on debugging with logic analyzers and RTOS tracing, shortening their time to first merged fix.

Embedded Software Engineer Jun 2017 - Apr 2021
Garmin, Olathe, KS

- Wrote drivers for I2C, SPI, and UART sensors on wearables and verified timing with logic analyzers and oscilloscopes before each hardware revision shipped.
- Cut firmware flash usage by 15% through code size review and compiler flag tuning, freeing room for two new features without moving to a larger memory part.
- Ported the product from bare metal to FreeRTOS, improving task scheduling and removing a recurring watchdog reset issue.
- Documented test plans and traced requirements for regulatory review, passing FCC and CE pre-compliance on the first attempt.
- Built automated unit tests with Unity and CMock that raised coverage of the driver library from 45% to 85% and stopped two regressions from reaching the lab.
- Resolved 40 field-reported firmware issues with the support team, keeping median fix turnaround under two weeks.
- Created a bring-up checklist for new boards covering power rails, clocks, and peripheral self-tests, which helped the lab finish validation a week sooner.

EDUCATION

B.S. in Electrical Engineering, University of Texas at Dallas, Richardson, TX

CERTIFICATIONS

Certified Software Development Professional (CSDP) | Zephyr RTOS Fundamentals