

NOAH LUSKEY

Embedded Systems Engineer



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WHO AM I?

I build stuff. Mostly low-level software, though *many hats*.

I've been told one of my main talents is identifying gaps and rallying people around a fix. At Microsoft, some of the gaps I filled were continuous build/test systems, cross-platform-ifying existing code, or even just revamping documentation.

However, I wanted stronger ownership, so I left Microsoft to build WasteWizer with two other engineers and one person from the scrap-industry. The premise is simple: hyper-weight scales for dumpsters with the goal of improving pickup logistics.

Being their first developer, I designed the full software system and developed the vast majority of it. As of Feb. 2023 the system had ingested over 1MM weights and monitored hundreds of container cycles.

The system matured and software development slowed, so I pivoted to consulting for WasteWizer and moved full time to Silvertree Labs.

Although Silvertree's product launch was successful, ultimately the company could not justify their burn rate with the revenue they were generating.

EXPERIENCE

2/2023 – 2/2024

Staff Firmware Engineer

Silvertree Labs - Cambridge, MA

- Developed firmware for a wearable device for older adults, utilizing the Zephyr RTOS.
- Improved stability through system re-architecture, enabling aggressive emulated and hardware testing.
- Developed improved WiFi driver and emulator for DA16200 WiFi chip, enabling improved network stability.
- Developed UDP-over-BLE network interface for connectivity via a user's phone (and test Rust client).
- Educated team on Zephyr build system, design principles, and techniques for improving testability.
- Mentored one QA developer as he transitioned into contributing to firmware.

C17 / Zephyr RTOS / Rust / BLE / NRF52

2/2021 – 2/2023
and ongoing consulting

Lead Software/Firmware Engineer

Scalable Systems Group (formerly WasteWizer Technologies) - Atlanta, GA & Remote

- Fourth employee at a startup developing internet-connected scales for dumpsters (up to 22 tons).
- Designed and implemented a complete system to ingest and aggregate sensor data on a dashboard.
- Developed a React dashboard to display data, manage customers, and enable customer self-service.
- Created fault-tolerant application and calibration firmware, achieving a 2-month average battery life.
- Engineered a data pipeline to convert raw data into calibrated force and weight metrics.
- Developed insights such as detecting site drop-offs, pickups, and automated service-needed notifications.
- Provided additional support in IT, marketing, and graphic design as required.

C++17 / Particle DeviceOS / React / Typescript / MongoDB / Python

10/2018 – 4/2021

Software/Firmware Engineer II

Microsoft - Applied Sciences Group - Seattle, WA

- Developed firmware for a suite of edge-AI devices using the Myriad X Vision Processing Unit.
- Conducted various systems integration tasks related to image processing pipeline and peripherals.
- Designed and built a continuous build and hardware-in-the-loop test system for several edge-AI devices.
- Implemented a telemetry and update system using/abusing USB HID.
- Rewrote the build system into cross-platform CMake, including both firmware and host applications.
- Served as the architect and release manager for firmware and USB host tooling for validation and calibration.
- Successfully contributed to the release of the Surface Hub 2 Smart Camera.

C++17 / C / RTEMS / Linux / Myriad X / Make / CMake / USB

3/2017 – 10/2018

Software Developer

Microsoft - Cosmos Big Data Group - Seattle, WA

- Designed and implemented an automated canary analysis system for the *Extent Node* distributed service.
- Developed and deployed a *documentation-as-code* platform for troubleshooting and guides.
- Performed various on-call duties for the data storage layer of an exabyte-scale system.
- Researched and implemented stream repair solutions for multiple types of permanent data loss.

C++11 / Windows Server / C# / C / Powershell

EDUCATION

2011 – 2016

B.S., M.S. in Electrical Engineering

Georgia Institute of Technology - Atlanta, GA and Metz, France

Focus on Embedded Systems, Signal Processing, and Control Systems. Graduated with Highest Honors.

(SOME) PERSONAL PROJECTS

2024

LoRaWAN Wearable

Ported Zephyr RTOS to LilyGo T-WATCH-S3 hardware, wrote missing drivers, and built proof of concept LoRa-connected wearable - Ongoing project.

2019

Snow Forecast Ski Art

Backlit wall-art skis that display abstract rendition of weekend's snow and weather forecast.

2015

FretMaster 5000

MIDI guitar using fret-string contact to accurately and (essentially) immediately detect chords.

HOBBIES

Skiing, sailing, tennis, and a healthy obsession with pinball. Casually play bass guitar and piano.

CONSULTATION

Have questions? Want to bounce around ideas? I'm always happy to talk - I love chatting about anything I have done!

For consultant work, I operate under VVVVVVVVVV, LLC. Please contact me at noah@vvvvvvvvvv.io