JONATHAN “JONI” HENDRICKSON

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Seattle-based embedded software engineer with experience developing microcontrollers, IoT solutions, and satellite firmware. Skilled at delivering efficient, reliable, and maintainable embedded applications.

SKILLS

C, Rust, Python, C++ programming	Microcontrollers (STM32, Espressif, RPi)	FreeRTOS, Embedded Linux
Serial comms (UART, SPI, I2C, CAN)	Networking (Ethernet, BLE, TCP/IP)	JTAG/SWD, oscilloscopes, logic analyzers
Sensors (weight, distance, cameras)	Build systems (GNU Make, CMake)	Git, CI/CD, shell scripting

EXPERIENCE

Amazon – Software Development Engineer II **Seattle, WA**

Amazon Go / Just Walk Out – MCU Sensor Firmware *Oct 2024 – Current*

- Developed embedded firmware for weight sensors and camera modules on ARM-based MCUs using FreeRTOS in C
- Implemented video streaming optimizations to reduce CPU usage and improve throughput
- Set up CI/CD pipelines and designed performance evaluation tests for automated benchmarking on lab hardware

Project Kuiper – Satellite Embedded Software *Aug 2023 – Oct 2024*

- Maintained and expanded a framework for modular satellite applications in Rust and C++ on Embedded Linux
- Improved IPC, telemetry, storage, and logging systems, porting key components from C++ to Rust
- Enhanced fault tolerance mechanisms, including health monitoring, watchdogs, and time synchronization
- Built tooling for deployment and debugging, including a debug CLI and ARM cross-compilation build system

Amazon Web Services – Software Development Engineer I/II **Seattle, WA**

FreeRTOS Maintainer Sept 2021 – Aug 2023

- Developed MISRA-compliant embedded C libraries for FreeRTOS, including provisioning, HTTP, and OTA updates
- Wrote firmware for AWS IoT ExpressLink, implementing MQTT and BLE GAP/GATT communication over UART
- Built a GitLab CI/CD pipeline for Linux/RPi testbeds, automating Pytest-based firmware integration tests

Avanade – Software Developer Intern **Seattle, WA**

Altspace VR and Microsoft Teams integrations *June 2021 – Aug 2021*

- Developed interactive AltspaceVR features in Node.js, including virtual games and in-app item systems
- Participated in agile development, code reviews, and cloud-based deployments using Microsoft Azure

PROJECTS

Joni on Microsite - Microcontroller-Based Web Server **Dec 2024 – Present**

joni-on-micro.site *GitHub Repository*

- Built an embedded web server on an ESP32-S3 using LittleFS and W5500 Ethernet to serve a static blog site
- Developed a custom POSIX shell-based static site generator for bundling and efficient caching

cEDH Decklist Database **June 2020 – Aug 2020**

cedh-decklist-database.com *GitHub Repository*

- Built a website with an AWS-powered backend for browsing and submitting Magic: The Gathering decklists
- Designed a submission system with authentication, data storage, and automated validation

EDUCATION

University of Washington Bothell – BS Computer Science & Software Engineering **Sept 2018 – Aug 2021**

- GPA: 3.77
- Courses: Operating Systems, Hardware and Computer Organization, Data Structures and Algorithms
- As a Teaching Assistant for CSE 180: taught data manipulation, visualization, and statistics