

# 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.

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

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## Amazon – Software Development Engineer II

Seattle, WA

*Amazon Go / Just Walk Out – MCU Firmware*

Oct 2024 – Current

- Developed hardware/firmware for motor control, weight sensors, cameras, and IoT on Embedded Linux and FreeRTOS
- Brought up a new motorized gate, writing firmware in C / C++ / Java and tuning PID parameters for steppers and BLDCs
- Traveled on-site to new stores as a forward deployed engineer to bring up networks, sensors, cameras, and gates

*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

## cEDH Decklist Database – Web Developer

Olympia, WA

[cedh-decklist-database.com](https://cedh-decklist-database.com)

June 2020 – Mar 2021

- Built a website with an AWS-powered backend for browsing and submitting Magic: The Gathering decklists
- Integrated sponsorships and Google AdSense revenue streams to cover server costs and generate revenue

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## PROJECTS

### Treadward - Treaded SLAM Robot

July 2025 – Current

- Incorporated a Raspberry Pi 5, camera module, and BLDC motor controller into a rover chassis
- Uses ROS 2 to autonomously map and navigate my apartment using slam-toolbox

### Joni on Microsite - Microcontroller-Based Web Server

Dec 2024 – Mar 2025

[joni-on-micro.site](https://joni-on-micro.site)

[GitHub Repository](#)

- Built an embedded web server on an ESP32-S3 using LittleFS and esp-httpd to serve a static blog site
- Developed a custom POSIX shell-based static site generator for content bundling and compression

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## 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