

EDUCATION

B.S. Software Engineering, BYU-Idaho, Rexburg, ID — Expected Dec 2026

Certificate, Embedded Systems

GPA- 3.55 / 4.00

Relevant coursework: Real-Time operating Systems, Microcontrollers, Debugging, Reverse Engineering, Digital Logic, Data Structures, Linux, Engineering Principles, Serial Communication, Machine Learning

SKILLS

Programming Languages: C, C++, Python, C#, ARM Assembly, Verilog, Javascript,

Embedded & RF: STM32, Raspberry Pi, ESP32, FreeRTOS, SPI/I2C, Software Defined Radio

Tools & OS: Linux/Unix, Git, GDB, STM32CubeIDE, Espressif, GCC, .NET, Bash, SSH, 3D Printing, CNC Machine Programming

Engineering & Fabrication: CAD Design, CNC machining, welding, soldering, logic analyzers, software defined radio,

Other: Computer Vision (YOLO, OpenCV), PID control, Pytorch, OpenClaw, Tailscale

PROJECTS

Drone RF Signal Detector - 2025

- Developed a multi-band drone signal detector using an STM32L4 microcontroller and AD8317 analog detectors; scanned 433 MHz, 915 MHz, 2.4 GHz and 5.8 GHz bands using tuned antennas.
- Designed shielding with a copper-lined Pelican case and grounded enclosures to minimize EMI.
- Implemented modular C firmware in STM32CubeIDE with calibration, RSSI threshold detection, and user interface modules.
- Tested the device across noise floors and drone control signals; replaced the CC2500 transceiver with the AD8317 for improved reliability.

Computer-Vision Turret (Drone C-RAM) - 2025

- Built a computer-vision tracking turret using Raspberry Pi 5 and a microcontroller; trained a custom YOLO-based object detection model.
- Implemented real-time tracking and PID motion control for servo/stepper motors and integrated TB6600 drivers.
- Designed a multi-process Linux pipeline for video capture, inference, and actuation; achieved $\pm 1^\circ$ tracking accuracy.

RFID Authentication Research Device - 2025

- Developed a research tool for studying 13.56 MHz RFID authentication using a PN532 module and Raspberry Pi Pico.
- Implemented UID reading, emulation and analysis of security weaknesses with custom SPI/I2C drivers.
- Used the device to analyze vulnerabilities in legacy RFID systems to inform design improvements.

Automatic G-Code Editor - 2024

- Created a software tool to automatically generate and edit CNC G-code for manufacturing; adopted by the shop owner.
- Combined machining knowledge with software engineering to validate tool paths and reduce setup time using Python.

EXPERIENCE

Machinist (White Rock Machine, Quick Turn Machine, Gem State Machine) Utah & Idaho: 2018–2019; 2021–2025

- Operated and programmed CNC mills and lathes to produce precision components from engineering drawings (± 0.001 " tolerances).
- Interpreted G-code, performed tool setups, maintained machines and conducted quality inspections with calipers, micrometers and CMMs.
- Collaborated with engineers to optimize designs for manufacturability and expedite prototype iterations.

Junior Developer, Meritus360, Mesa, AZ : 2025–Current

- Developed and tuned AI-based tooling for aerospace manufacturing shops and integrated software with machine-shop processes.
- Worked in a 3-person development team; delivered production features and collaborated with machinists to gather requirements.
- Contributed to codebase using C# and Python; improved user interface for feedback and analytics.