Stuart Rogers

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# Summary

Self-taught hardware and firmware developer with 10+ years of hands-on experience building real-world embedded systems, custom PCBs, and networked devices. Strong track record of taking projects from concept to deployment independently. Practical, resourceful, and thrives on solving problems at the intersection of hardware and software.

# Technical Skills

- Embedded C development (STM32, EFM8, AVR, PIC, ESP32)
- Schematic capture & PCB layout (Altium Designer)
- Circuit simulation (ADS), vector network analyzer tuning
- SolidWorks mechanical design, 3D-printed enclosures (FDM/SLA)
- Small-batch PCB assembly: pick-and-place operation, reflow, and QA
- C# desktop tools, Python scripting, MQTT, MySQL
- IT infrastructure: pfSense routers, PBX systems, VM servers

# Experience

## Independent Hardware & Firmware Designer

Vermont, Remote | Nov 2020 – Present

- Designed, assembled, and sold custom hardware modules via eBay (OLED DMM displays, oscilloscope probes).
- Created full product flow: schematics, PCB layout, simulation, SolidWorks enclosures.
- Operate and maintain a desktop pick-and-place machine for short-run PCB assembly and prototype validation.
- Maintain a small fleet of 5 in-house 3D printers (4 FDM, 1 SLA) for rapid prototyping and short-run production of enclosures, fixtures, and test jigs.
- Ran analog co-simulation and VNA tuning for high-performance analog designs.
- Built and refined FPGA synth boards (XVA1/XFM2) with multi-layer PCBs.
- Open-sourced multiple hardware and firmware projects; supported customers.

## Hardware & IT Technician / Sponsored Developer

Mid City College, Baton Rouge, LA | 2013 – 2019

- Built and deployed NFC-based access control system for office building.
- Evolved hardware from Arduino prototypes to networked controllers with serial/network bridge.
- Developed C firmware and C# admin tools; managed MySQL backend.
- Installed network cabling, switches, pfSense router/firewall, PBX VoIP systems.
- Managed virtual servers; provided daily IT support to students and staff.

## PCB Assembly Technician (Seasonal)

Occam Vision Group — Boulder, CO | Winter 2016

- Assisted with assembly and calibration of multi-camera computer vision systems.
- Operated pick-and-place machine, solder paste squeegee printer, and reflow oven for small-batch PCB runs.
- Performed PCB rework and QA on prototype boards.
- Contributed to EFM8 microcontroller prototype bring-up: tested early firmware and verified board functionality.

## Crew Member

McDonald’s | Vermont, USA | Aug 2024 – Present

- Maintains consistent, reliable employment while continuing independent hardware design work.
- Demonstrates strong work ethic, customer service, and teamwork skills.

# Education

Self-Taught – 2013–Present
• Ongoing independent study in electronics, embedded systems, and software development
• Hands-on experience through full-cycle project design, deployment, and troubleshooting