

Stephen Berkner

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A Security-Focused Embedded Engineering Leader with Diverse Experience in Both Software and Hardware

SKILLS

- ✓ C & C++
- ✓ Bluetooth
- ✓ Digital Circuit Design
- ✓ Python
- ✓ Java
- ✓ 3D Printing
- ✓ RTOS & Yocto
- ✓ I²C
- ✓ PCB Design & Assembly
- ✓ HTML
- ✓ Android
- ✓ CAD
- ✓ FPGA & VHDL
- ✓ SPI
- ✓ Symmetric Cryptography
- ✓ CSS
- ✓ C# & .NET
- ✓ AWS
- ✓ CAN & LIN
- ✓ USART
- ✓ Asymmetric Cryptography
- ✓ JavaScript
- ✓ Unity
- ✓ Docker

RELEVANT PROFESSIONAL EXPERIENCE

Dojo Five: Modern Embedded Development

Staff Firmware Engineer & Project Lead | January 2024 – Present | St. Paul, MN (Remote)

Lead PCB bring up and delivery of RTOS and Bare Metal firmware on FPGA and MCU architecture with CAN and LIN, cameras, on-board memory, and multiple communication protocols to enterprise clients in regulated industries.

Conducted technical and behavioral interviews for senior, staff, and principal firmware engineering candidates.

- Developed audio processing algorithm and integrated digital I²C sensors for an IIoT network router.

Senior Firmware Engineer & Project Lead | June 2023 – December 2024 | St. Paul, MN (Remote)

- Implemented LIN Driver to customer LDF specifications for an automotive driver mirror monitoring system.
- Implemented memory and firmware requirements for several FPGA-based automotive driver mirror monitors.
- Developed and thoroughly tested Bluetooth driver for a pressure sore prevention medical device.
- Delivered a 3D printing education seminar, including a 3D printed case designed in CAD for client hardware.

Entrust Data Protection Solutions

Software Developer | February 2020 – May 2023 | Sunrise, FL

Collaborated remotely with teams in the UK to program, certify, and manufacture Hardware Security Modules.

- Designed, implemented, and thoroughly tested customer-facing HSM bootloader upgrade software.
- Created CI pipeline to build manufacturing suite using GitLab, Docker, virtual machines, and YAML.
- Developed manufacturing applications for baseline configuration of HSMs.
- Designed and implemented FIPS 140-3 ACVP Testing Framework for OpenSSL and OpenSSH symmetric cryptographic algorithms, as well as U-Boot asymmetric cryptographic algorithms.
- Implemented FIPS 140-3 Self-Test compliance in OpenSSL, OpenSSH, and nCoreAPI.

Center for Safety, Simulation, & Advanced Learning Technologies (CSSALT)

Lead Hardware Engineer and Software Engineer | April 2019 – February 2020 | Gainesville, FL

Created medical simulation hardware and software for a DoD funded lab with equipment deployed in Afghanistan.

- Designed a chest tube insertion simulation and IV insertion simulation in Unity with C# and .NET.
- Developed a series of PCBs to control and power tracked simulation instruments.
- Developed on-board power regulation circuitry for tactile feedback in tracked simulation peripherals.
- Documented SMMARTS SDK, Whitebox Magnetic Tracking System, and simulation power system.

United States Department of Agriculture ARS-CMAVE

Academic Researcher | December 2017 – April 2019 | Gainesville, FL

Presented two research projects at the 2018 joint conference of the Entomological Society of America and Entomological Society of Canada in Vancouver, Canada.

- Architected, manufactured, and deployed a completely digital Acoustic Mole Cricket Trap in the field using Pulse Width Modulation and Class D Amplification.
- Designed a Smart Hive for Honey Bees using QR codes placed on the thorax to collect behavioral data.

EDUCATION

Bachelor's of Science in Computer Engineering, University of Florida