Spencer Beer

beersc@colostate.edu ◇ 303-856-6085 ◇ https://github.com/Spenc3rB ◇ https://www.linkedin.com/in/spencerbeer/

Summary

Strong academic record with a passion for continuous learning and a desire to contribute to cutting-edge technologies in the field of cyber security, embedded systems, machine learning, and automotive systems. Possesses a solid understanding of embedded programming, operating systems, and cybersecurity.

Education

Colorado State University | GPA 3.6 — Fort Collins, CO
Master of Science in Systems Engineering, Embedded and Heavy Vehicle Cyber Security — 08/2024 - 05/2026

Colorado State University | GPA 3.6 — Fort Collins, CO
Bachelor of Science in Computer Engineering, Embedded Systems, IoT, and Machine Learning — 08/2020 - 05/2024

Technical Skills

Languages & HDLs: C, C++, Python, Java, JavaScript, MATLAB, SystemC; Assembly (ARM/MIPS/x86/XTensa); Verilog, VHDL; SQL; HTML/CSS (Bootstrap); Bash & PowerShell
AI / Data Frameworks: TensorFlow, PyTorch, scikit-learn, OpenCV; Parallel programming (CUDA, OpenCL, OpenMP)
Embedded & Hardware: Yocto, Buildroot, FreeRTOS; STM32, ESP32, Raspberry Pi, BeagleBone; Communication protocols (SPI, I^2C, CAN, LIN, Ethernet, UART, RS-485/232, JTAG/SWD, MQTT); Soldering (incl. SMT), PCB design (Altium)
Tools & IDEs: VS Code, Visual Studio, Eclipse, Git/GitHub, Docker; Quartus Prime, Keil uVision, Cadence, Arduino, PlatformIO; Ghidra, Wireshark, Nmap, Burp Suite, Ofrak, Trace32, GDB, OpenOCD, Volatility, Hashcat
DevOps, Cloud & Virtualization: AWS; SaltStack, SCCM, MDT, Wazuh., Active Directory; Hyper-V, WSL
Security, Networking & Automotive: pfSense, WireGuard; GNU Radio, can-utils, automotive CAN tooling
Methodologies: Agile, CI/CD, Model-Based Systems Engineering

Professional Experience

Colorado State University — Fort Collins, CO
Graduate Research Assistant | Embedded Security Engineer — 05/2024 - Present

- *Ultimate Truck Hacking Platform:* Custom Yocto OS research with the NMFTA, used heavy vehicle network analysis.
- *Vehicle Penetration Testing Platform:* ISO 24134 platform for mobile penetration tests in any vehicle environment.
- *CyberEvent SysAdmin:* Lead Network & IT Consultant for CyberX Challenges.
- *Patching ECMs using OFRAK:* Research with Red Balloon Security on encrypting CAN bus communications.
- *OneNet Gateway:* Research with NMEA on developing the first NMEA 2K to NMEA OneNet protocol converter.
- *Electronic Logging Devices:* Research and reverse engineering on the security of mandated IoT logging devices.

Colorado State University — Fort Collins, CO
Engineering Technical Services | Support Technician — 08/2022 - 01/2024

- *Development of Custom Tools:* PowerShell based, administrative, open-source tools used in software management.
- *Support Engineering:* Debugging hardware, software, scripting, writing technical documentation, and OS management.

Colorado State University — Fort Collins, CO
Engineering Success Center | Staff — 05/2022 - 08/2022

- *Windows 10 Kiosk:* Data collection, and statistical analysis regarding engineering student success.

Misc.

- *Licenses & certifications:* Bendix Brakes, GitHub Foundations
- *Volunteering:* Black Hat MEA Car Hacking Village, Assistant Coach for XC and Track Team, and Ski & Snowboard Swap Volunteer
- *Hackathons & CTFs:* CyberSEED 2024 & 2025, SwampCTF 2024, MITRE eCTF 2025, CyberX Challenges, USDA RibClassification