

# SPENCER BEER

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## 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 cyber security.

## EDUCATION

<b>Colorado State University   GPA 3.6</b>	Fort Collins, CO
Master of Science in Systems Engineering, Embedded and Heavy Vehicle Cyber Security	08/2024 - 05/2026
<b>Colorado State University   GPA 3.6</b>	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<sup>2</sup>C, 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

<b>Colorado State University</b>	Fort Collins, CO
Graduate Research Assistant   Embedded Security Engineer	05/2024 - Present
<ul style="list-style-type: none"><li>◦ <i>Ultimate Truck Hacking Platform:</i> Custom Yocto OS research with the NMFTA, used heavy vehicle network analysis.</li><li>◦ <i>Vehicle Penetration Testing Platform:</i> ISO 24134 platform for mobile penetration tests in any vehicle environment.</li><li>◦ <i>CyberEvent SysAdmin:</i> Lead Network &amp; IT Consultant for CyberX Challenges.</li><li>◦ <i>Patching ECMs using OFRAK:</i> Collaborated with Red Balloon Security on encrypting CAN bus communications.</li><li>◦ <i>OneNet Gateway:</i> Worked with the NMEA on developing the first NMEA 2K to NMEA OneNet protocol converter.</li><li>◦ <i>Electronic Logging Devices:</i> Reverse engineering mandated IoT logging devices and standards development work with the FMCSA.</li></ul>	
<b>Colorado State University</b>	Fort Collins, CO
Engineering Technical Services   Support Technician	08/2022 - 01/2024
<ul style="list-style-type: none"><li>◦ <i>Development of Custom Tools:</i> PowerShell based, administrative, open-source tools used in software management.</li><li>◦ <i>Support Engineering:</i> Debugging hardware, software, scripting, writing technical documentation, and OS management.</li></ul>	
<b>Colorado State University</b>	Fort Collins, CO
Engineering Success Center   Staff	05/2022 - 08/2022
<ul style="list-style-type: none"><li>◦ <i>Windows 10 Kiosk:</i> Data collection, and statistical analysis regarding engineering student success.</li></ul>	

## 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