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 embedded systems, machine learning, and autonomy. Possesses a solid understanding of microcontroller programming, real-time operating systems, and circuit design. Always striving to create a safer and more accessible world.

Education

- Colorado State University / Aug. 2020 – May 2024

Bachelor of Science in Computer Engineering **|** GPA 3.6 | Studying Embedded Systems and IoT with a minor in Machine Learning

Technical Skills

***- Programming Experience*:**

- Java, JavaScript, C/ C++, SystemC, Python, MATLAB, Assembly (ARM/MIPS), HTML, CSS (+Bootstrap), Verilog, PowerShell, Bash, Socket, CUDA, TensorFlow

***- Software Tools*:**

- Visual Studio Code, Quartus Prime II, Kiel uVision5, Cadence, Fusion360, GIT, Microsoft 0365, GEM5, Sniper, Arduino

***- Other Skills*:**

- Soldering, Administrative, IT, Scripting, HW/SW Testing and Debugging, Linux/Windows OS, RTOS (FreeRTOS), Microcontrollers, Software and Hardware Optimization Techniques, RISC/CISC Architectures, Logic Analyzers and Oscilloscopes, Network and Serial Communication Protocols, VMs (VirtualBox and XCP), I/O, Memory Systems

Engineering Projects

- Electric-Go-Kart / Current:

- Capstone project with E-Kart team at CSU. Developing UI/UX on Raspberry Pi with CAN communication from VESC.

- Raspberry Pi 3b+ Octopi with Obico / Current:

- Working on communication with Raspberry Pi to deploy live stream to a 3D print server with machine learning.

- Home Networking & Automation / Current:

- Server deployment, home networking, and automation using Wazuh and Wiregaurd VPN.

- ESP32 "Smart Fish Tank" / May 2023:

- Collaborated on the application model level in c++, along with web application development to create a fully autonomous aquatic monitoring system.

- Traffic Light Controller / Dec. 2022:

- Designed and simulated a traffic light FSM using Cadence software, and with an FPGA (Verilog).

- ESP32 Temperature Sensor, "GenoSENSE" / Aug. 2022

- Assisted in the design of a real-time temperature sensing product for CSU's Bioengineering labs.

- Voltage Adjuster / Apr. 2022

- Design and development of a variable voltage source using potentiometers.

- Microprocessor Lab / Dec. 2021

- Designed a simulated microprocessor with a complex array of logic gates and Quartus software on an FPGA.

- Electric Water Bottle / Oct. 2019

- Designed and developed prototype, programmed in C++ with Arduino IDE using a recycled windshield washer reservoir.

Work Experience

- Engineering Technical Services Support Assistant, CSU / Current

- Managed domain computers with SCCM
- Debugged hardware and software issues
- Gained fundamental skills in the CLI and scripting
- Worked on IT / administrative open-source tools
- Imaged and understand Windows 10/11 and Unix/Linux OS
- Wrote technical documentation and solutions articles

- Engineering Success Center Staff, CSU / May 2022 – Aug. 2022

- Developed a touchscreen kiosk solution for front desk with Windows 10, Power Automate, and PowerShell

Leadership & Involvement

- Cross Country & Track Team Leader / Dec. 2019

- Assistant Coach for high school track and cross-country team

- Ski & Snowboard Swap / Dec. 2015 – Dec. 2018

- Organized affordable gear for local ski community as a part of Team Summit's alpine ski team