Blizzard Finnegan

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Embedded systems designer and open-source advocate specialising in RISC-V, bootloader development, and driver development.

SKILLS

Tools and Languages	C/C++, Rust, RISC-V Assembly, VHDL, Java
Software	LaTeX, `git`, Linux, ModelSim, MultiSim, Altera Quartus, Yosys, U-Boot, TianoCore/EDK2
Hardware	Serial communication, Soldering Iron, Oscilloscope, DMM, FPGAs, Signal/function generator

PROJECTS

Homelab Development Environment   Aug. 2022 — Current
Experience with wide range of hardware in a variety of use cases

- Experimentation with embedded SBCs and systems including:

StarFive VisionFive 2	`RISC-V`
DeepComputing ROMA II	`RISC-V`
Milk-V Jupiter	`RISC-V`
Raspberry Pi 3/4/400	`AARCH64`
PCEngines `apu2e0`	`AMD64`

- Serial, I2C, and SPI communication
- Experience working with DeviceTree, custom Linux kernel configuration, cross-compilation, U-Boot design and implementation

Custom RISC-V Processor Core   Aug. 2024 — Current
VHDL design to implement the 32-bit RISC-V instruction set

- Follow published documentation to implement compliant design
- Implement multi-stage pipelining to ensure efficient usage of core
- Testing Altera Cyclone III, Cyclone V, and Lattice iCE40 FPGAs

Self-Hosted Home Automation   Feb. 2023 — Current
Implement automation for lighting, heating and cooling based on collected information

- Designed and constructed based off verbal specifications from the end users
- Control both proprietary devices and custom personal devices based on the ESP32 and Raspberry Pi platforms
- Ensure easy control of all entailed through an easy to understand interface

Automated Testing Aparatus   Jan. 2023 — Aug. 2023
Automate serial communications to allow for endurance testing of proprietary devices

- Tests built upon the Raspberry Pi platform
- Communication by both GPIO-to-relay commands and serial input/output
- Data output in low storage footprint, human-readable text file

EDUCATION

Rochester Institute of Technology   Aug. 2018 — Dec. 2024
B.S. in Computer Engineering Technology; GPA = 3.2/4.0

WORK EXPERIENCE

Research and Delopment Intern   Jan. 2023 — Aug. 2023
Baxter International   *Auburn, NY*

- Overhauled multiple automated test fixtures' software for ease of use
- Instructed general assistance with the use of embedded Linux systems
- Initiated the process of porting proprietary communication protocol to Linux

Assistant Systems Administrator   June 2022 — Dec. 2022
RIT, Information & Technology Services   *Henrietta, NY*

- Ensured compatibility and repaired a wide range of client devices
- Regularly interfaced with customers for identifying and resolving issues
- Maintained compatibility and security updates across several platforms