Phelan Hobbs

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EDUCATION

The University of Utah, *Salt Lake City, Utah*
Master of Science in Electrical and Computer Engineering
The University of Utah, *Salt Lake City, Utah*
Bachelor of Science in Computer Engineering
Dean's List

Technical Skills

Languages: *Python, C/C++, Java, C#, Verilog, MIPS assembly, MATLAB, Powershell*
Operating Systems: *Windows, macOS, Linux*
Editors: *Visual Studio Code, Visual Studio, Eclipse, ModelSim, VIM, NeoVIM*
CAD Software: *Autodesk EAGLE, Intel Quartus Prime, ModelSim, Cadence EDA Tools*

JOB EXPERIENCE

Software Engineer | University of Utah Nanofab, Salt Lake City, Utah June 2024 - Present

- Developed an automation framework for efficient backup and retrieval of critical research data, significantly enhancing workflow efficiency.
- Built diagnostic tools enabling rapid log-file verification, reducing issue resolution time from hours to minutes.
- Implemented a PowerShell automation script for seamless data extraction from fabrication equipment, greatly reducing manual processes.
- Integrated legacy equipment with IoT capabilities using custom-designed PCBs and Raspberry Pi Pico controllers, enabling remote health monitoring and data logging.
- Designed and built a microcontroller powered device that allows instantaneous and continuous reading of the particulate values in the cleanroom, a task that previously took hours per week

PROJECT EXPERIENCE

Textable Walkie Talkie August 2021 – December 2021

- Engineered portable communication devices capable of exchanging text data over LoRa radio signals up to 10 kilometers using Raspberry Pi Zero.
- Developed backend functionality including keystroke detection via a Blackberry keyboard, data transmission and reception via LoRa, and display management on an LCD screen.
- Implemented user-centric features like persistent message storage, adjustable brightness, customizable usernames, font sizes, and efficient power management.

DoodleJump FPGA Computer September 2021 – December 2021

- Designed and constructed a complete 16-bit FPGA-based computer architecture in Verilog, including an ALU, custom instruction set architecture, registers, memory, and I/O subsystems
- Developed a playable implementation of the iOS game "DoodleJump," integrating input via an NES controller and rendering graphics on a VGA display.

Relevant Coursework and Workshops

NASA F Prime Workshop, Advanced Embedded System, Advanced Digital VLSI Design, Digital Systems Designs, Operating Systems, Machine Learning, Computer Design, Computer Architecture, Design Models of Computation, Graphical Methods of Digital Signal Processing