Isaiah Grace

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Technical Skills

C & C++	Assembly	Linux	Multithreaded programming	Signal Processing	Rust & Zig
Python & Bash	AWS IoT	Embedded Systems	Distributed Systems	FPGA design & synthesis	Circuit design

Work Experience

Embedded Software Developer: ASML via Actalent Services Jul 2022 – Jun 2023

- Responsible for the design and implementation of high reliability and high performance C driver firmware, enabling next-gen semiconductor manufacturing.
- Designed, developed, and tested modular driver and subsystem components in a highly distributed and strict real-time environment.
- Assisted in verification and validation of software update packages using advanced system simulators.

Embedded Systems Engineer: Sestra Systems May 2021 – Jun 2022

- Responsible for the design and implementation of IoT embedded systems in a small and collaborative startup environment.
- Managed the entire software life-cycle of several key embedded software systems as lead engineer.
- Worked directly with internal stakeholders, and external clients, to scope out and specify new system capabilities.
- Designed and implemented new subsystems in a multi-threaded and multi-process distributed system.
- Reverse-engineered a BLE Bluetooth protocol to develop a custom driver and control system for off the shelf hardware.
- Integrated open source device drivers utilizing C and modern C++.
- Designed SPI, CAN, and USB hardware drivers on extremely resource constrained bare-metal microcontroller boards.

Student Researcher and Senior Project: Purdue SoCET team, physical design group Apr – Aug 2019

- Developed layout, place and route, and floorplanning workflows for the physical design of an experimental research microcontroller eventually fabricated at MIT Lincoln Labs.
- Created Custom standard cells for use in an experimental hardware obfuscation prototype.

Grader: ECE369 Discrete Mathematics Jan – May 2019

- Graded Discrete Mathematics course assignments covering theory of computation, formal logic, graph theory, mathematical induction, state machines, and regular expressions.

Operator: Purdue Rare Isotope Measurement Laboratory Jan 2016 – May 2018

- Collected and verified data from Purdue's linear particle accelerator. Operated the accelerator during overnight shifts, participated in maintenance, and responded to emergency shutdowns.

Research and Project Experience

Tetris hand-held game console – link Mar–May 2019

Developed an STM32-based handheld Tetris console as a member of a four-person team. Personally created an SPI driver for the embedded display using C++ and assembly.

Education

Purdue University Aug 2015 – Dec 2019

B.S. in Computer Engineering **Major GPA: 3.63**
Minor in History **Minor GPA: 3.93**

Relevant Coursework: Digital Signal Processing Data Structures & Algorithms, Computer Architecture, Microcontrollers, Object-oriented Programming, Functional Programming, Artificial Intelligence, ASIC Design, Leadership Development