

# JONATHAN HUANG

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## EDUCATION

Purdue University – BS in Computer Engineering

May 2024

## TECHNICAL SKILLS

**Languages:** C, C++, Rust, Bash, Python, Perl, JavaScript, TypeScript, ReactJS, System Verilog, Verilog, Assembly, Matlab

**Technology/Tools:** Linux, Git, Jira, Agile methodology, Xilinx Vivado, Questasim, AWS, Docker, Gem5, FPGA, Verilator

## WORK EXPERIENCE

Computer Hardware Engineer

June 2024 – Present

*Brown Deer Technology – Bel Air, Maryland*

- Developing and maintaining four and five-stage 32 RISC-V DSP processors, including comprehensive test packages
- Leading the design and implementation of 64-bit RISC-V DSP processors
- Building a custom Theia-based IDE to streamline and automate development workflow and testing
- Driving development of parameterizable instruction and data caches, compliant with the AXI4 protocol, to reduce cycle counts by up to 20%
- Synthesizing cores onto FPGAs using Xilinx Vivado
- Exploring and implementing new potential use cases including CORDIC and MIL-STD-1553

Student Researcher

August 2023 – May 2024

*Purdue University – West Lafayette, Indiana*

- Created a software simulation of the team's RISC-V core using Gem5
- Utilized Embench test suites to monitor core performance and guide architectural improvements.
- Led architecture development of the cache and ram using Gem5 to enhance memory performance by 15% through configuration optimizations

Cloud Engineer

May 2023 – August 2023

*IEEE – Piscataway, New Jersey*

- Researched methods to increase observability of resource usage and traffic on AWS EKS applications
- Created a comprehensive run book outlining set up instructions for integrating Open Telemetry, Prometheus, and Grafana, ensuring streamlined implementation across current and future applications
- Developed a lambda function to notify users of real time failures along with essential information within AWS Batch jobs

Software Engineer

May 2022 – August 2022

*IEEE – Piscataway, New Jersey*

- Identified over 15 major and recurring issues with applications or processes by implementing new data science clustering and NLP techniques to process help desk tickets.
- Communicated with the business relations team, database team, and infrastructure team to collect and organize application and licensing data for the migration to a new data storage software.

## CERTIFICATIONS

- Oracle Cloud Infrastructure AI Foundations Associate
- Oracle Cloud Infrastructure Generative AI Professional