Justin Roberts

robertjt@rose-hulman.edu

+1 (512) 966-9156

Competitive Computer Engineering Student with HDL Experience Seeking a Full-Time Position in Embedded Software or Firmware.

Education:

Bachelor of Science, Computer Engineering   May 2025
Rose-Hulman Institute of Technology, Terre Haute, IN   GPA: 4.0
Minors in Computer Science & Robotics

Work Experience:

Collins Aerospace (E&E Intern)   2024
- Developed a script to lint the entire Hardware Definition Language (HDL) codebase and standardize the project, resulting in the identification of over five thousand linting issues.
- Implemented program-driven FPGA requirement updates in an iterative development style.
- Analyzed and corrected integration-driven Register Transfer Language (RTL) snags using hardware and an object-oriented Python scripting environment.
- Wrote and updated iteration-driven requirements to the DO-254 DAL-A standard.
- Developed DO-254 DAL-A compliant HDL code.

Jabil Inc. (Computer Engineering Intern)   2023
- Developed a library to use DMTF Redfish for server hardware validation.
- Developed automated testing environment for the script, unit, and feature testing.
- Programmed automated packaging for distribution across Linux and Red Hat operating systems.
- Led design reviews with cross-functional teams of up to ten people.
- Implemented Agile development practices with Azure DevOps and Git for source code control and review.

Project Experience:

Autonomous Pathfinding Robot and Custom Power Supply   2024
- Designed a supercapacitor-based battery and PCB for sub-five-minute charge times
- Integrated Huskylens Artificial Intelligence (AI) camera into an existing C codebase to perform image processing and line tracking.
- Implemented PID-based control systems for speed and steering motors.

Custom Processor for FPGA Development   2023
- Designed the system architecture for a 16-bit instruction set.
- Developed an associated assembly language and assembler script in Python.
- Created and maintained the test bench for rapidly changing components.

Semi-Autonomous Maze-Pathfinding Robot   2021 - 2022
- Programmed a control system to navigate autonomously.
- Tested I/O circuits for interfacing with an ARM processor development kit.

Scouts BSA Eagle Rank Project   2018 - 2019
- Designed and Manufactured a Chimney Swift Tower for an endangered bird species.

Leadership Experience:

Eta Kappa Nu (HKN), Recording Secretary   2024 - 2025
Operating Systems TA, Embedded Systems TA   2023 - 2025
Kappa Theta Pi (KTP), Constitution Chair   2022 - 2023
Unity   2021 - 2025
Scouts BSA, Eagle Scout   2014 - 2019