

Marshall Haynes

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SUMMARY

Computer engineering graduate with experience in high-level programming, embedded systems, control systems, and FPGA development with a focus in embedded and VLSI technology seeking an **entry-level** opportunity with an innovative company starting **Summer 2024**.

SKILLS

- **Programming Languages:** C/C++ (3 years), Python, ARM Assembly, Verilog HDL
- **Web Development:** HTML, CSS, JavaScript
- **Tools and Platforms:** Microsoft Visual Studio Code, MATLAB, Quartus Prime, Code Composer Studio, Keil, TI-RTOS

EDUCATION

University of Houston, Cullen College of Engineering - Houston, Texas

Aug '19 - May '24

Bachelor of Science in Computer Engineering | **Minor** : Mathematics

RELEVANT PROJECTS

Team Leader | **Air-Cooled Heat Exchanger Sizing and Validation Program (Senior Design I/II)** Aug '23 - May '24

- Explored a web-based framework, implementing algorithms to size heat exchangers based on up to 20 parameters
- Formulated 90%-target validation mechanisms to ensure the accuracy of the program's results for Williams Companies
- Cooperated with team members to design a user-friendly interface, achieving a target silktime accessibility score of 80

Framework Specialist | **Maze Navigation Robot (Embedded Microcomputer Systems)**

Aug '23 - Dec '23

- Executed control algorithms using C++ to enable the robot to navigate through a complex maze in 14.7 seconds
- Incorporated distance sensors, DC motors, and a Tiva C Series TM4C123G Texas Instruments LaunchPad
- Performed rigorous testing and debugging processes, resulting in a robust maze navigation system with PID control

Peripheral Integration Specialist | **Random Mind Maze (Advanced Digital Design)**

Jan '23 - May '23

- Utilized Verilog HDL to design and implement a complex state machine running among 15+ unique states
- Operated a DE0-CV board, equipped with an Altera Cyclone V FPGA device and useful built-in peripherals
- Conducted thorough timing simulations and testing, identifying, and resolving potential issues in Quartus Prime

WORK EXPERIENCE

Teaching Assistant | **University of Houston, Department of Electrical / Computer Engineering**

Aug '22 - May '24

- Provided personalized support for 70+ undergraduate ECE students per semester in the Digital Logic Design course
- Guided students during undergraduate lab hours, averaging 5 hours per week, resulting in improved comprehension
- Fabricated, proctored, and jointly graded 25+ exams, quizzes, labs, lab exams, and class works each semester

LEADERSHIP

Team Leader | **Senior Design Capstone Project**

Aug '23 - May '24

- Coordinated a multidisciplinary group of 5 students in executing a successful senior project from concept to completion
- Initiated and sustained effective communication with 3 facilitators, 2 sponsors, and 4 team members, boosting efficiency
- Managed project timelines and resources, ensuring the timely delivery of a high-quality solution by March 2024
- Organized and conducted regular meetings; bi-monthly with Williams Co. sponsors and bi-weekly with team members

Lead Teaching Assistant | **University of Houston, Department of Electrical / Computer Engineering**

Aug '23 - May '24

- Served as the lead for 2 fellow TAs, providing guidance, coordinating efforts, and ensuring a cohesive approach
- Collaborated closely with Professor Bhavin Sheth for 4 regular semesters to create effective curriculum materials
- Received positive feedback from 20+ students for clear communication and dedication to their academic success

RELEVANT COURSEWORK

- Introduction to Computer Architecture and Design
- Advanced Digital Design (Verilog HDL)
- Embedded Microcomputer Systems (C/C++)
- Automatic Control Systems (MATLAB)
- Embedded Microcomputer Systems (C/C++)
- Fundamentals of Software Engineering