

Henry Moran

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EDUCATION

University of Houston

Bachelor of Science in Computer Science

Houston, TX

Aug. 2024 – Dec. 2025

Lone Star College

Associate of Science

Tomball, TX

Aug. 2020 – May 2024

EXPERIENCE

Undergraduate Research Assistant

University of Houston

May 2025 – Present

Houston, TX

- Collaborated with a PhD candidate to design and evaluate real-time scheduling experiments for mixed-criticality traffic intersections
- Created Python scripts to automate SUMO/TraCI simulations and data collection to reduce analysis time.
- Proposed and led an independent project on adaptive deadline assignment; presented findings at weekly lab meetings.

Order Fulfillment Associate

The Home Depot

May 2022 – Jan. 2025

Tomball, TX

- Collaboratively engaged in a dynamic team environment to pick and fulfill customer and contractor orders, ensuring seamless and punctual deliveries.
- Provided exemplary customer service, addressing inquiries and ensuring customer satisfaction throughout the order fulfillment process.
- Operated forklifts with precision and safety, contributing to efficient material flow within the warehouse.

PROJECTS

Personal Portfolio Website (*HTML, JavaScript, PHP, Apache, MariaDB*)

May 2025 - Present

- * Developed a full-stack portfolio site hosted on a home Apache server with MariaDB backend.
- * Implemented dynamic content management to showcase projects, skills, and blog posts with responsive design for desktop and mobile.
- * Configured and secured the LAMP stack on a local RHEL machine, optimizing database queries and server performance.

Deadline- and Priority-Based Traffic Signal Control (*COSC 4321*)

Spring 2025

- * Implemented EDF and FP controllers in Python with SUMO/TraCI, modeling a four-way junction with three vehicle priority levels.
- * Enforced minimum-green intervals; achieved EDF miss rates of 21.8–38.6%.
- * Technologies: Python, SUMO, TraCI, real-time scheduling theory.

LU-Dense Solver in CUDA (*COSC 4397*)

Spring 2025

- * Ported serial LU decomposition to CUDA using shared-memory tiling and cuBLAS, achieving a $41\times$ speedup (2.97 s) on a 5000×5000 system.
- * Benchmarked across matrix sizes; analyzed trade-offs in memory bandwidth and kernel overhead.
- * Technologies: CUDA C/C++, cuBLAS, NVIDIA profiling, dense linear algebra.

TECHNICAL SKILLS

Programming: C, C++, Java, Python, Lua, JavaScript, PHP, R

Frameworks: React, Node.js, Flask, FastAPI, JUnit, WordPress, Material-UI

Tools/Platforms: Git, Docker, TravisCI, Azure Web Apps, Google Cloud Platform, MySQL/MariaDB, PostgreSQL, LAMP/Apache, Ubuntu, Fedora, RHEL, Vim, VS Code

Libraries: pandas, NumPy, Matplotlib, cuBLAS, (SUMO) TraCI