Henry Murdock

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I am currently pursuing my undergraduate degree in computer science at Michigan State University. In the short term my objective is to gain industry experience in software development and pursue a master's degree in computer science. Ultimately my goal is to develop into a dynamic leader, who is ready to take on managerial and executive positions.

Education

B.S.E Michigan State University, Computer Science, Expected Graduation May 2025

Cumulative GPA – 4.0 out of 4.0

Coursework – Machine Learning (CSE 404), Database Systems (CSE 480), Linear Algebra (MTH 309 & 314), Proofs (MTH 299), Object Oriented Programming (CSE 335), Data structures and algorithms (CSE 331), Computer operating systems (CSE 325), Computer architecture (CSE 320)

Experience

KLA Software Internship, May 2023 – August 2023:

- Gained semiconductor manufacturing domain knowledge and worked on software infrastructure for advanced machine learning algorithms.
- The project for this internship was to experiment with and create a proof-of-concept solution that allowed machine learning tasks to be run via distributed systems (Kubernetes).
- The developed system was designed to increase the efficiency of customers training algorithms regarding time and available resources. This allows manufacturers to detect defects in their semiconductors faster, saving them tens of thousands of dollars.
- I learned and utilized technology such as Kubernetes, Docker, Apache Airflow, Git, and Helm during this internship.

Data Structures and Algorithms, Undergraduate Learning Assistant, August 2023 – Present:

- Responsibilities include holding help room sessions, creating and grading software projects, and assisting student development within the data structures and algorithms class.
- Topics of this course include linked lists, sorting, hash tables, trees, heaps, graphs, minimum spanning trees, as well as dynamic programming.

Skills

Programming: Python (Advanced), C/C++ (Advanced), Java (intermediate), Go (Beginner)

Skills / Technologies: TensorFlow, Scikit-Learn, CUDA, Kubernetes, Docker, Docker Compose, Elasticsearch, Flask, Helm, Apache Airflow, Git, SQL, Multithreading in C++, Matplotlib, HTML, JSON, XML, YAML

Projects

CUDA Edge Detection, September 2023 – December 2023:

- Recently started a project for edge detection in images centered around learning CUDA.
- Developed several features using CUDA including gaussian blur of images, Sobel edge detection of images, and Canny edge detection of images. Included creating a C++ GUI.

Code Scout, May 2023 – August 2023:

- The purpose of this project is to be able to quickly know if anybody else within an organization has already published software that meets specified requirements. It can both protect an organization's intellectual property while also allowing it to be searched efficiently. Search capabilities are powered by Elasticsearch.
- This project helped me learn Docker, Docker-Compose, Elasticsearch, SQL, and Flask.

Activities

Michigan State University, Artificial Intelligence Club Member