JOSEPH MA

(765) 409-1019

ma562@purdue.edu

in https://www.linkedin.com/in/josephm130

https://joseph-ma.com

EDUCATION

Purdue University, College of Engineering - West Lafayette, IN

May 2023

Bachelor of Science in Computer Engineering

Cumulative GPA 3.84/4.00

Relevant Coursework:

- Completed: Python for Data Science, Data Structures, Microprocessor Systems and Interfacing, Signals and Systems
- Current: Artificial Intelligence, Object-Oriented programming with C++, Discrete Mathematics for Computer Engineering

Campus Involvement:

- Tau Beta Pi- Engineering Honor Society
- Hong Kong Student Association
- Society of Asian Scientists and Engineers (SASE)

The Chinese University of Hong Kong – Hong Kong

April 2021 - June 2021

System Development & Programming, Machine Learning with Python

Data management with Python, Web Scraping, Data Visualization, Scikit-learn, Deep learning with TensorFlow

WORK EXPERIENCE

Purdue University School of Electrical and Computer Engineering

Undergraduate Researcher – Sequential Task based Reinforcement Learning

May 2022 - Present

- Seeking solutions to increase the efficiency and accuracy of training an RL agent to perform tasks sequentially.
- Developed a method of keeping track of each possible state using a binary tree of Q tables.
- Attempting to tackle the exponential increase in training time with principles of dynamic programming and memoization.

Undergraduate Teaching Assistant (ECE 368 - Data Structures)

June 2022 - August 2022

- Further developed leadership and communication skills as a UTA.
- Assisted up to 70 students on weekly homework and debugging programming assignments.
- Familiarized students with using tools such as Git, GitHub, Valgrind and GDB.

Undergraduate Teaching Assistant (ECE 20001 - Electrical Engineering Fundamentals 1)

August 2021 – December 2021

- Guided up to 32 students through core concepts of electrical engineering and linear circuits during weekly office hours.
- Graded and returned student assignments in a timely manner.

Preface Coding

June 2021 – August 2021

Full Stack Development Intern

- Rewrote components of the online member web portal to utilize responsive design using HTML, CSS and JavaScript.
- Implemented backend form checking using active record validations through ruby on rails.
- Gained experience on utilizing CRUD operations and testing REST APIs on the Postman API platform.

TECHNICAL SKILLS

Languages: Proficient in Python, Java, C, HTML, CSS, JavaScript, MATLAB, Verilog, Assembly

Tools: Git, GDB, React.js, Excel, Matplotlib, NumPy, Pandas, SolidWorks, EAGLE, Fusion 360, CATIA V5, STM32 ARM microcontroller

PROJECTS

Cat & Mouse

April 2022

• Programmed a game in C using the STM32F091 microcontroller where a cat autonomously chases a mouse controlled by the user. Implemented chasing logic using Dijkstra's algorithm. Used SPI to control LCD display and GPIO for push buttons.

Raw K-means Clustering

June 2021

Wrote an algorithm to illustrate unsupervised learning on python without the help of any machine learning libraries.