Ayush Rautwar

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EDUCATION

University of Michigan
May 2024, Computer Science
GPA: 4.0/4.0

Thomas Jefferson HS for Sci/Tech
2017-2021
GPA: 4.404/4.0

LINKS

linkedin.com/in/ayush-rautwar
github.com/ayusher
ayushrautwar.com

COURSEWORK

Computer Vision
Artificial Intelligence
Machine Learning
Multivariable Calculus
Special Functions and Integrals
Quantum Mechanics
Concrete Mathematics
Robotics

SKILLS

Programming
Linux Scripting • Python • Java • C++ • Javascript • HTML • CSS • Github

Machine Learning • Data Science • Flight Software • Algorithmic Coding

Tensorflow • Keras • Scikit-Learn • OpenCV

Robotics
Microcontrollers • Prototyping • Raspberry Pi • Arduino

Mechanical
Fusion360 CAD • 3D Printing • Laser Cutting

SCORES

SAT: 1570/1600
Physics Subject Test: 800
Math 2 Subject Test: 800

EXPERIENCE

Capital One | Incoming SWE Intern
June 2022 - August 2022
- Develop a machine learning based approach to detecting credit card fraud

Surmount AI (Techstars '22) | Chief Technology Officer
August 2021 - Present
- Oversee all technical development for aggressively growing fintech startup
- Create an AWS-based backend to create broker automated trading processes on-demand and execute trades real-time
- Use multiple backend technologies including Flask, Django, and NodeJS
- Raised $120k from Techstars, looking to raise a pre-seed

Two Six Labs | Machine Learning Intern
June 2019 - August 2019
- Developed a connection-free Android text detection and recognition app to help the US military identify threats in foreign laboratories
- Implemented efficient Keras-based optical character recognition (OCR)
- Deployed models with Tensorflow Lite for Android

CLUBS

Michigan Investment Group | Quantitative Analyst
September 2021- Present
- Detect paired stocks using Johansen and Dickey Fuller cointegration tests
- Implement, backtest, and forward test market-neutral algorithms using regression-based statistical arbitration techniques in Python

TJ Nanosatellite Team | Project Manager & President
September 2017 - June 2021
- Managed development of TJREVERB, a NASA-granted 2U radio satellite mission
- Oversaw all aspects of satellite development, including in-house electronics system design, Python and C++ flight software, Fusion-based modeling and assembly, and complete system testing procedure

RESEARCH

Multimodal Facial Gesture Recognition
Dr. Marwa Mahmoud, University of Cambridge
October 2020 - May 2021
- Generated natural-looking hand-on-face gesture images using OpenCV
- Created and trained a machine learning pipeline to classify gesture region, gesture shape, and emotion using Docker, Keras, and OpenFace

PERSONAL PROJECTS

Efficient RL-Based Othello
April 2021
- Created an othello environment along with baseline search agents
- Implemented a general-purpose algorithm using Python and Cython, based around MCTS and policy/value networks, trained through self-play
- Implemented multithreading and memory management to optimize training

CodingClash
June 2020
- Worked with a team to develop a virtual AI battle-based competition from scratch using Python Django, custom frontend, AWS S3 storage, and Heroku hosting
- Secured sponsors and hosted a successful nationwide competition