Ayush Rautwar

ayushrautwar.com | arautwar@gmail.com | 2021arautwar@tjhsst.edu

Education

THOMAS JEFFERSON HS FOR SCI/TECH
GPA: 4.285/4.0

Coursework

Quantum Mechanics & Electrodynamics ● Advanced Mathematical Techniques ● Concrete Mathematics ● Multivariable Calculus ● Computer Vision ● Artificial Intelligence ● Machine Learning ● Robotics

Skills

Programming

Python, Java, C++, C, Javascript, Linux Shell, Git, Tensorflow & PyTorch (*Python*)

Robotics

Raspberry Pi, Arduino, Sensor Integration

Mechanical

Fusion360 CAD, 3D Printing, Laser Cutting

Scores

SAT: 1570

Physics Subject Test: 800

Math 2 Subject Test: 800

AP CS A, BC Calculus, US History, Physics C Mechanics, and Physics C Electricity & Magnetism: 5

Links

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

Experience

Two Six Labs | Machine Learning Intern
June 2019 - August 2019
- Developed a text detection and recognition app to help the US military detect threats in foreign laboratories
- Analyzed open-source software like Tesseract

Projects & Clubs

TJ Nanosatellite Team | Project Manager & President
September 2017 - Present
- Managed development of **TJREVERB**, a 2U satellite evaluating the feasibility of Iridium radio in space
- Oversaw all aspects of satellite development, including electronics system design, flight software, modeling and assembly, and system testing

Project Caelus | Co-Founder & Flight Dynamics Lead
November 2018 - November 2019
- Analyzed flight dynamics and necessary considerations for various liquid-propellant engine designs
- Developed Golang and Rust-based flight software iterations

TJ Rocketry | Team Captain & Treasurer
September 2019 - Present
- Led the Battle of the Rockets (BoTR) team to 4th place victory in 2020 competition
- Managed development of a high-power rocket with a model Mars rover payload and complex deployment task

TJ Underwater ROV | Software Developer
September 2019 - Present
- Developed Python-based software to control a ROV as it performed maneuvering tasks underwater

CodingClash | Creator & Frontend Developer
June 2020 - Present
- Developed a virtual hackathon from scratch using Python Django
- Secured sponsors and hosted a successful competition

Personal Projects

GAN-Generated Nebula | Generative Adversarial Networks
I gathered nebula images and created an effective GAN to generate artificial nebulae that can be used for further study in the relevant patterns present in nebulae.

MNIST ENN | Evolutionary Neural Network
I developed an evolutionary neural network that improved in accuracy using the genetic algorithm. Although not very efficient, I implemented it using only standard Python libraries.