Rohan Srivastava

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Education

Georgia Institute of Technology **Atlanta, Georgia**
Bachelor of Science in Physics *August 2019 - May 2023*

- Minor in Computer Science & Intelligence
- College of Sciences Dean's Scholar, President's Undergraduate Research Award, Dean's List, Faculty Honors
- **GPA: 3.97 / 4.0**

Experience

L3Harris Technologies **Rochester, New York**
Image Science Engineering Intern *May 2022 – August 2022*

- Developed ∼2,000 lines of code to simulate satellite orbits in cislunar space under the physical laws of the circularly restricted three body problem through a Python interface of the General Mission Analysis Tool (GMAT) API
- Built a hierarchy of python files that will allow a user to easily simulate up to 150 orbits in less than 2 minutes
- Automated the process of writing data from simulations to external files efficiently using Pandas

Georgia Tech Center for Relativistic Astrophysics **Atlanta, Georgia**
Computational Cosmology Group - Research Assistant *August 2021 – March 2023*

- Collaborated with peers and advisors to analyze datasets from large astrophysical simulations to investigate accretion flows into supermassive black hole progenitors at high redshifts
- Extracted and plot data from simulations on Jupyter using yt (Python package) to find trends of significant stature

Projects

Wildfire Classifier **February 2023 – April 2023**
Binary Image Classifier - Python, Machine Learning, Anaconda, Git

- Utilized Convolutional Neural Networks, via TensorFlow, to create a model that successfully determines whether land in satellite images was previously effected by wildfires with 97% accuracy
- Leveraged principal component analysis to reduce image size yielding an 85% decrease in training time while maintaining 96% test accuracy
- Employed cross validation to fine tune model resulting in an increase of test accuracy to 97.4% while still using the smaller images

Picklio **January 2023 – April 2023**
Smart Pickleball Paddle - Python, Machine Learning, Arduino, Git

- Created a pickle ball paddle that uses BLE broadcasted internal measurement data via an arduino to identify different statistics that can be displayed to a user on a mobile application
- Leveraged TensorFlow to successfully differentiate forehand from backhand hits with 89% accuracy
- Built a data labelling GUI that resulted in a 75% decrease in data preprocessing time and increased label accuracy

Intelligence Based Pacman **August 2022 – December 2022**
Intelligence Implementor - Python, Reinforcement Learning

- Wrote various search heuristics, including A*, BFS, DFS, Greedy, and UCS, to explore possible maze traversals
- Used reinforcement learning (Q-learning and value iteration) to train Pacman to follow safe paths of greatest reward
- Expanded shell of Pacman game, using intelligence principles, into a fully autonomous game with maximized scoring

Technical Skills

Programming Languages: Python, Java, C, JavaScript, HTML, CSS, Swift, LaTex

Technologies: VSCode, Jupyter Notebooks, Anaconda, Tensorflow, React, Flask, Linux, Git, IntelliJ, Bitbucket, GMAT, Unity, Autodesk Eagle, SolidWorks, Docker, yt

Relevant Coursework: Machine Learning, Intro to AI, Computational Physics, Robotics & Perception Linear Algebra, Object Oriented Programming, Data Structures & Algorithms, Computational Physics, Computer Organization & Programming, Intro to Python