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 **Melboure, FL**
Associate Image Science Engineer *June 2023 – Present*
- Developed a novel subpixel image registration technique using a CNN via TensorFlow that leverages cross correlation data processing of image pairs to predict shifts with 96.8% accuracy at a 0.5 pixel resolution
- Improved an existing image registration framework to succesfully idenity subpixel shifts in satellite imagery to 1/10th of a pixel using OpenCV, FFT based techniques, and data detrending
- Carried out cross validation of parameters to increase the accuracy of the existing registration framework by 90%

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

Projects

Wildfire Classifier **February 2023 – April 2023**
Binary Image Classifier - Python, ML, 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, ML, 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, RL
- 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, MATLAB, Swift, LaTex
Technologies:	VSCode, Jupyter Notebooks, Anaconda, TensorFlow, OpenCV, PyTorch, NumPy, React, Flask, Linux, Git, Bitbucket, IntelliJ, GMAT, Unity, Autodesk Eagle, SolidWorks, Docker
Relevant Coursework:	Machine Learning, Intro to AI, Computational Physics, Robotics & Perception, Linear Algebra, Object Oriented Programming, Data Structures & Algorithms, Computer Organization & Programming, Intro to Python