

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

Melbourne, FL

Associate Image Science Engineer

June 2023 - Present

- Developing a novel sub-pixel frame-to-frame registration routine from the ground up using OpenCV, feature matching, and Fourier Transform based techniques that will outperform the current industry leading algorithm
- Created a Convolution Neural Network machine learning pipeline via TensorFlow that leverages cross correlation surfaces of images to predict translational misalignment with 96.8% accuracy at a 0.5 pixel resolution
- Improved an existing image registration framework by employing cross validation of parameters, which lead to a 90% decrease in errors of translational shift predictions in satellite imagery, and ported the entire codebase to Python

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

- Designed and trained a CNN, using TensorFlow, that determines whether land in satellite images was previously effected by wildfires with 97% accuracy
- Utilized principal component analysis to reduce image size by 77% yielding in an 85% decrease in training time while maintaining 96% test accuracy
- Employed a cross validation parameter search to tune the model resulting in an increase of test accuracy to 97.4%

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