Rohan Srivastava

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Education

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

- Concentration in Astrophysics
- Minor in Computing & Intelligence
- College of Sciences Dean's Scholar, President's Undergraduate Research Award, Dean's List, Faculty Honors
- **GPA: 3.96 / 4.0**

Experience

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

- Developed ∼2,000 lines of code to propagate satellites 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 reading/writing data from and to .csv files for ground stations on Earth to be able to locate where the satellites are

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

- 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
- Utilized Linux command-line prompts on a local machine to offload jobs to HIVE (Georgia Tech supercomputer)

Projects

Intelligence Based Pacman **August 2022 – Present**
Intelligence Implementor - Python

- 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

LeBron or Kareem? **March 2022 – August 2022**
Web App - Python, JavaScript, HTML, CSS, Git, GitHub

- Programmed a web app that calculates any NBA player's points remaining to pass Kareem Abdul-Jabbar's record
- Created a Python back-end that makes calls to an NBA API to gather statistics and send this information via Flask to a front-end built in HTML with functionality supplied through JavaScript

Dark Side of the Universe **January 2020 – May 2020**
Computational Physics Simulations - Python, Git, GitLab

- Utilized numerical methods in Python to calculate, analyze, and reflect upon the independent effects of dark matter and dark energy on the expansion rate of the Universe
- Programmed 9 different "model universe" simulations under two different theories of expansion while making proper use of the Freidmann and Fluid equations to obtain accurate scale factor values at each time step

Technical Skills

Programming Languages:	Python, Java, C, C#, JavaScript, HTML, CSS, JavaFX
Technologies:	VSCode, IntelliJ, Jupyter Notebooks, MacOS, Windows OS, Linux, Git, GitHub, BitBucket, GMAT, Unity, Autodesk Eagle, SolidWorks, Docker, yt
Relevant Coursework:	Data Structures & Algorithms, Object Oriented Programming, Computational Physics, Intro to Python, Computer Organization & Programming, Intro to AI, Linear Algebra