

# Arpit Jain

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## Education

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*Master of Science, Business Analytics (Current)*

Boston University, Boston MA

May 2022

*Bachelor of Science, Astronomy*

University of Massachusetts, Amherst MA

May 2020

## Data and Business Analytics Related Achievements

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**Research Project – Was Air Quality affected where COVID-19 was most prevalent?**

2021

Boston University, Boston MA

- Team lead for a group project on the study of the change in global air quality during the COVID-19 pandemic, and subsequent lockdowns.
- We analyzed data using Air Quality Open Data Platform, BigQuery in the Google Cloud Platform, VertexAI notebooks and visualized data in Tableau.
- I calculated the average global monthly air pollutant values in 2019 and 2020 using BigQuery.
- When running regression of one air pollutant type versus COVID-19 cases, it was statistically significant with a R squared value of 0.37 and presented these results to the class who acted as stakeholders.

## Astronomy Related Affiliations and Achievements

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**Observational Astronomy Research Project**

2019 – 2020

University of Massachusetts, Amherst MA

- Team lead for an Astronomy research project with five other undergraduates to create a Python and IDL pipeline from infrared adaptive optics data from the MMT Observatory located in Arizona.
- Analyzed stellar multiplicity in 245 low-mass stars within 50 light years and did a statistical analysis (including Gaussian Fits and Fourier transform methods) of the dynamical properties of multi-star systems.

## Research Presentation

American Astronomical Society Meeting, Hawaii

2020

- Made a research poster presentation titled ‘Updated Stellar Properties and Companion Candidates from the M-dwarfs in Multiples Survey (MinMs).

## Research Grant

Kitt Peak National Observatory

2019

- Awarded a grant by the astronomy department for conducting research at the 0.9m WIYN telescope in Kitt Peak, Arizona. The research objective was to capture, reduce, and analyze large telescope data using a Python pipeline.
- Target star data was analyzed using Lomb-Scargle periodograms and differential photometry in Python to determine the periods of target stars.
- 53% of stars studied were periodic between 0.7 days and 5.5 days. No jets or filamentary structures were found, as well as no relationship between disk thickness, and period of stars.

## Astronomy Club

Five College Astronomy Department, Amherst MA

Member

2016 – 2020

Observatory Director, Orchard Hill Observatory

2019 – 2020

- Hosted public observing sessions using the 16-in telescope housed at UMass Amherst for university student/faculty and the public during weekly meetings, or during special astronomical events.
- Secured funding for a portable 12-in telescope to provide better access to students. The portable telescope increased access Membership retention in astronomy club rose 15% the next year.

## **Other Activities**

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### **UMass Student Government Association**

Senator SGA

2016 – 2019

Ways and Means Budget Committee Chair

2018 – 2019

- Appointed as Ways and Means committee chair two times with the responsibility of allocating budgets to student organizations and staff on campus totaling \$3.2 million (FY18) and \$3.3 million (FY19).

## **Data and Software Skills**

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**Programming:** Python3, OOP, NumPy, Pandas, SciPy, AstroPy, Seaborn, IDL, Terminal, RStudio, and SQL

**Applications:** VS Code, LaTeX, PyRAF, DS9, Dropbox, GitHub, Microsoft Office, Tableau, Google Cloud Platform, Google Data Studio, and RStudio.