

Uzair Tahamid Siam

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EDUCATION

University of Rochester

Bachelor of Science, Physics and Astronomy

Rochester, NY

Expected Dec 2022

- Minor in Mathematics, Computer Science
- GPA: 3.99 out of 4.00
- Academic Achievements: Dean's scholarship, Dean's List, The Discover Grant, 2021 Caltech SURF Award
- Leadership positions: Society of Physics Students - Student Ambassador, Rochester Astronomy Club - Secretary
- Relevant courses: Database Systems, Artificial Intelligence, Data Structures and Algorithms, Modern Statistics and Exploration of Large Datasets (Graduate level)

EXPERIENCE

California Institute of Technology, ET Lab

Summer Research Assistant

Pasadena, CA

Jun 2021 – Aug 2021

- Integrated model stellar spectra from the PHOENIX library using Python scripts
- Simulated observations for multiple hot Jupiter and Earth atmospheric spectra from the Goyal 2020 library
- Compared model observations and generated criteria to optimize filter arrangements for a telescope

University of Rochester, Physics and Astronomy Dept.

Summer Research Assistant

Rochester, NY

May 2020 – Aug 2020

- Used NumPy and AstroPy to automate analysis/classification of 100,000+ galaxy data from 4 surveys
- Utilized SciPy optimization functions to find nearest distances to a parent galaxy using KDTree
- Visualized and presented results using Matplotlib scatter plots, error-bar plots, and histograms

University of Rochester, Physics and Astronomy Dept.

Research Assistant

Rochester, NY

Aug 2020 – Present

- Created Python infrastructure for data cube (FITS) analysis using NumPy, AstroPy, and SciPy
- Optimized parameter sets for low-density galaxy data compression Python scripts

University of Rochester

Teaching Assistant

Rochester, NY

Aug 2020 - Present

- TA for Calculus IA, Calculus IIA, Honors Mechanics, Honors 20th Century Physics
- Conducted 1 hour long workshops every week to help master the material through problem-solving
- Dedicated 5 hours per week for grading and office hours

INDEPENDENT PROJECTS

- **Street Mapping:** Generated the maps of UR Campus, Monroe County, and NYS and calculated the shortest path between two nodes and also the minimum weight spanning tree for the UR Campus by implementing Dijkstra's Algorithm of shortest distance and Prim's algorithm for MWST
Keywords: Java, Graph, Dijkstra's Algorithm, Prim's Algorithm, Shortest Distance
- **Huffman Compression:** Implemented Huffman's algorithm to compress text and image files through encoding and decoding
Keywords: Java, Huffman Algorithm, file compression, encoding/decoding
- **64 Districts of Bangladesh:** Created a GUI based typing/learning game that allows users to learn the names of the 64 districts of Bangladesh. Inspired by the web-based 50 US States game
Keywords: Python, pandas, Turtle, Tkinter, GUI

SKILLS

- *Languages:* Python, Java, HTML, CSS
- *Technologies:* NumPy, AstroPy, SciPy, Jupyter, Matplotlib, Git, Requests, Turtle, Tkinter