Uzair Tahamid Siam

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EDUCATION

University of Rochester   **Rochester, NY**
Bachelor of Science, Physics and Astronomy   *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   **Pasadena, CA**
Summer Research Assistant   *Jun 2021 – Aug 2021*
- *Integrated model stellar spectra from the PHONEIX library using Python scripts*
- *Simulated observations for multiple hot Jupiter and Earth atmospheric spectra from the Goyal 2020 library*
- *Took model observations and generated criteria to discriminate between the simulations and found the optimal arrangements*

University of Rochester, Physics and Astronomy Dept.   **Rochester, NY**
Summer Research Assistant   *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 using KDTree to understand the differences in behavior of a galaxy as a function of its distance from a void center and void edge*
- *Visualized results using Matplotlib scatter plots, error-bar plots, and histograms*

University of Rochester, Physics and Astronomy Dept.   **Rochester, NY**
Research Assistant   *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   **Rochester, NY**
Teaching Assistant   *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 Djikstra's Algorithm of shortest distance and Prim's algorithm for MWST
  Keywords: Java, Graph, Djikstra'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