Mir Sazzat Hossain

Email: mirsazzathossain@gmail.com   Linkedin: linkedin.com/in/mirsazzathossain

Homepage: mirsazzathossain.me   Github: github.com/mirsazzathossain

Education

Independent University, Bangladesh   Jan 2017 − May 2021

Bachelor of Science in Computer Science and Engineering   *Dhaka, Bangladesh*

CGPA: **3.64 / 4.00**

Research Experience

Research Collaboration   Feb 2023 − Present

Project: Galaxy-scale Strong Lensing Systems   *Remote*

- Participate in a project supervised by Anowar J. Shajib (Postdoc, University of Chicago), using Hubble Space Telescope imaging data and the lenstronomy package for modeling galaxy-scale strong lensing systems.
- The project focuses on quantifying the mass distribution in the lens galaxy and comparing it with the light distribution to explore the alignment of dark matter and baryonic matter in massive elliptical galaxies.
- Contribute to the research process, from understanding key astronomical and statistical concepts to presenting research findings and preparing a paper for publication. [Project Homepage]

Research Assistant   Feb 2022 − Present

Center for Computational & Data Sciences, Independent University, Bangladesh   *Dhaka, Bangladesh*

- Participated in a research project, funded by the ICT Division of the Bangladesh Government, where I developed a group-equivariant semi-supervised method for classifying radio galaxies based on their morphologies.
- Constructed a machine learning dataset for Bent galaxies, categorized as Narrow Angle Tailed (NAT) and Wide Angle Tailed (WAT) galaxies, and successfully classified them with high accuracy using a semi-supervised method. [Paper in preparation]
- Conducted tutorial classes for Introduction to Computer Programming (CSC101), Fundamentals of Computer System (CIS101), and Data Structure (CSE203) as part of the Dean's Office Coding for All initiative.
- Assisted Dr. Amin Ahsan Ali in teaching the lab for Numerical Methods (CSE317), including designing lab assignments and worksheets, conducting the lab, and assessing lab assignments.
- Provided guidance and support to undergraduate students at the center for their final year projects.

Teaching Experience

Teaching Assistant   Sep 2021 − Dec 2021

Independent University, Bangladesh, Dept. of Computer Science and Engineering   *Dhaka, Bangladesh*

- Assisted Dr. A K M Mahbubur Rahman in a numerical methods lab course, guiding students on using Python for numerical applications.
- Redesigned the lab materials from MATLAB to Python in alignment with the course's focus as an introduction to Python-based machine learning and artificial intelligence.
- Offered support during lab sessions, aiding students in resolving queries and enhancing their understanding of the material.

Undergraduate Teaching Assistant   Sep 2020 − Dec 2020

Independent University, Bangladesh, Department of Physical Sciences   *Dhaka, Bangladesh*

- Worked as a part-time tutor at Math Tutorial Center, designed to assist students struggling with math concepts.
- Provided one-on-one support to students across various disciplines, addressing their specific challenges and improving their understanding of math.
- Collaborated with a team to manage the center and ensure students received necessary assistance.

Publications

- **Mir Sazzat Hossain**, Sugandha Roy, K M B Asad, Arshad Momen, Amin Ahsan Ali, M Ashraful Amin and A K M Mahbubur Rahman. "**Morphological Classification of Radio Galaxies Using Semi-Supervised Group Equivariant CNNs**" in 2023 International Joint Conference on Neural Networks (IJCNN) - Special INNS Workshop: International Neural Network Society Workshop on Deep Learning. [Paper]

Awards and Honors

- Awarded placement on the Vice Chancellor's List at Independent University, Bangladesh (IUB) three times in Spring 2021, Autumn 2020, and Summer 2020 for consistently maintaining a GPA of 3.50 or above across three consecutive semesters each time. [Credentials]
- Recognized on the Dean's Merit List at IUB in Spring 2020 for achieving a CGPA of 3.50 or more for two successive semesters. [Credential]
- Earned a spot on the Dean's List at IUB in Autumn 2019 for achieving a high academic standard with a CGPA of 3.50 or more in a semester. [Credential]

Extracurricular Activities

- Represented IUB in The 2019 ICPC Asia Dhaka Regional Contest. [Credential]
- Winner of the Intra IUB Tech Fest Programming Contest, Summer 2019. [Credential]
- Winner of the 2019 Intra IUB ACM Week Code Debugging Contest. [Credential]
- Actively participated in various workshops, programming challenges, and Olympiads. [Credentials]

Relevant Coursework

Artificial Intelligence, Machine Learning, Image Processing, Numerical Methods, Linear Algebra and Differential Equation, Calculus II (Multivariable Calculus), Ordinary Differential Equation, Boundary Value Problem

Technical Skills

- **Languages**: Python, C++, C, Java
- **Libraries**: PyTorch, PyTorch-Lightning, Scikit-learn, Pandas, NumPy, OpenCV, Matplotlib, Seaborn
- **Web Frameworks**: NextJs, React, Django
- **Miscellaneous**: Git, Docker, MATLAB, LaTeX

References

Amin Ahsan Ali, PhD
Associate Professor
Department of Computer Science & Engineering, Independent University, Bangladesh
Email: aminali@iub.edu.bd, Website: http://www.cse.iub.edu.bd/faculties/53

A K M Mahbubur Rahman, PhD
Associate Professor
Department of Computer Science & Engineering, Independent University, Bangladesh
Email: akmmrahman@iub.edu.bd, Website: http://www.cse.iub.edu.bd/faculties/56