

# Mir Sazzat Hossain

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## Education

Independent University, Bangladesh

Jan 2017 – May 2021

Bachelor of Science in *Computer Science and Engineering*

Dhaka, Bangladesh

Minor in *Engineering Mathematics*

CS & Math GPA: **3.81/4.0** (Overall CGPA: **3.64/4.0**)

## Research Experience

Post-baccalaureate Research Assistant

Feb 2022 – Present

Center for Computational & Data Sciences, Independent University, Bangladesh

Dhaka, Bangladesh

- **Research Interests:** Vision-language models, domain adaptation, federated learning, and medical imaging. Working on and co-supervising undergraduate theses and center-led projects in these areas.
- **Teaching Support:** Introduction to Programming, Data Structures, AI, ML, and Image Processing.
- **Publications:** Q1 Journals x2, WACV (A), ICIP x3 (B), AACL (B), IJCNN (B), and workshop papers.

## Selected Publications

- (C) Md Fahim, Md Farhan Ishmam, **Mir Sazzat Hossain**, Md. Ashraful Amin, Amin Ahsan Ali, and A K M Mahbubur Rahman. “**R-MMA: Enhancing Vision-Language Models with Recurrent Adapters for Few-Shot and Cross-Domain Generalization**” accepted at the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV 2026). [**CORE Rank: A**] [Paper]
- (C) **Mir Sazzat Hossain**, AKM Mahbubur Rahman, Md. Ashraful Amin and Amin Ahsan Ali. “**Lightweight Recurrent Neural Network for Image Super-Resolution**” 2024 IEEE International Conference on Image Processing (ICIP), Abu Dhabi, United Arab Emirates, 2024, pp. 1567–1573, DOI: 10.1109/ICIP51287.2024.10647844. [**CORE Rank: B**] [Paper] [Code]
- (C) Rakibul Hasan Rajib, Md Akil Raihan Iftee, **Mir Sazzat Hossain**, A K M Mahbubur Rahman, Sajib Mistry, Md. Ashraful Amin and Amin Ahsan Ali. “**FedCTTA: A Collaborative Approach to Continual Test-Time Adaptation in Federated Learning**” 2025 International Joint Conference on Neural Networks (IJCNN), Rome, Italy, 2025, pp. 1-8, DOI: 10.1109/IJCNN64981.2025.11228519. [**CORE Rank: B**] [Paper] [Code]
- (C) **Mir Sazzat Hossain**, Ovi Paul, Md Akil Raihan Iftee, Rakibul Hasan Rajib, Abu Bakar Siddik Nayem, Anis Sarker, Md. Ashraful Amin, Amin Ahsan Ali, and A K M Mahbubur Rahman. “**BD Open LULC Map: High-Resolution Land Use Land Cover Mapping & Benchmarking for Urban Development in Dhaka, Bangladesh**” 2025 IEEE International Conference on Image Processing (ICIP), Anchorage, Alaska, USA, 2025, pp. 2808–2813, DOI: 10.1109/ICIP55913.2025.11084396. [**CORE Rank: B**] [Paper]
- (C) Newaz Ben Alam, Akm Moshir Rahman Mazumder, **Mir Sazzat Hossain**, Mysha Samiha, Md Alvi Noor Hossain, Md Fahim, Amin Ahsan Ali, Ashraful Islam, Md. Ashraful Amin, and AKM Mahbubur Rahman. “**CMBan: Cartoon-Driven Meme Contextual Classification Dataset for Bangla**” accepted at the International Joint Conference on Natural Language Processing & Asia-Pacific Chapter of the Association for Computational Linguistics (AACL 2025). [**CORE Rank: B**] [Paper]
- (C) **Mir Sazzat Hossain**, K M B Asad, Payaswini Saikia, Adrita Khan, Md Akil Raihan Iftee, Rakibul Hasan Rajib, A K M Mahbubur Rahman, Arshad Momen, Jewel Kumar Ghosh, Amin Ahsan Ali, and Md. Ashraful Amin. “**RGC-Bent: A Novel Dataset for Bent Radio Galaxy Classification**” 2025 IEEE International Conference on Image Processing (ICIP), Anchorage, Alaska, USA, 2025, pp. 2868–2873, DOI: 10.1109/ICIP55913.2025.11084387. [**CORE Rank: B**] [Paper] [Code]
- (J) Fahim Mahafuz Ruhad, Md Fahim, **Mir Sazzat Hossain**, Md Fahad Monir, Md. Ashraful Amin, and Ashraful Islam, “**Beyond Classification: Benchmarking Object Detection Models for Efficient Tomato Leaf Disease Identification on a Real-World Dataset**” in Elsevier Smart Agricultural Technology, vol. 12, pp. 101336, 2025, DOI: 10.1016/j.atech.2025.101336. [**Q1 Journal**] [Paper]
- (J) Team BD Lensing. “**Investigating the Relation Between Environment and Internal Structure of Massive Elliptical Galaxies Using Strong Lensing**” in Astronomy & Astrophysics (A&A), vol. 699, pp. A259, 2025, DOI: 10.1051/0004-6361/202453239. [**Q1 Journal**] [Paper] [Project]
- (W) Tasnimul Hossain Tomal, Intesar Tahmid, Rafid Ahmed, **Mir Sazzat Hossain**, Md Fahim, Md Farhad Alam. “**LP-FT-LORA: A Three-Stage PEFT Framework for Efficient Domain Adaptation in Bangla NLP Tasks**” accepted at the Second Bangla Language Processing (BLP) Workshop (IJCNLP-AACL 2025). [Paper]

- (W) **Mir Sazzat Hossain**, Sugandha Roy, K M B Asad, Arshad Momen, Amin Ahsan Ali, Md. Ashraful Amin and AKM Mahbubur Rahman. “**Morphological Classification of Radio Galaxies Using Semi-Supervised Group Equivariant CNNs**” in *Procedia Computer Science*, vol. 222, pp. 601–612, 2023, ISSN: 1877-0509, DOI: 10.1016/j.procs.2023.08.198. [Paper] [Code]

## Under-review Papers

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- (C) Md Akil Raihan Iftee, **Mir Sazzat Hossain**, Rakibul Hasan Rajib, A K M Mahbubur Rahman, Tariq Iqbal, Md Mofijul Islam, Md. Ashraful Amin, and Amin Ahsan Ali. “**SloMo-Fast: Slow-Momentum and Fast-Adaptive Teachers for Source-Free Continual Test-Time Adaptation**” submitted to the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026). [CORE Rank: A\*] [Paper] [Code]
- (C) Md Akil Raihan Iftee, Syed Md. Ahnaf Hasan, **Mir Sazzat Hossain**, Rakibul Hasan Rajib, Amin Ahsan Ali, AKM Mahbubur Rahman, Sajib Mistry, and Monowar Bhuyan. “**pFedBBN: Personalized Federated Test-Time Adaptation with Balanced Batch Normalization for Class-Imbalanced Data**” submitted to the International Conference on Learning Representations (ICLR 2026). [CORE Rank: A\*] [Paper]
- (C) Rafid Ahmed, **Mir Sazzat Hossain**, Intesar Tahmid, Tasnimul Hossain Tomal, Md Fahim, Md Farhad Alam. “**Evaluating Vision Language Models on Bangla Medical Visual Question Answering: Dataset and Benchmarking**” submitted to the International Conference on Language Resources and Evaluation (LREC 2026). [CORE Rank: B] [Paper]
- (J) **Mir Sazzat Hossain**, Md Shahadat Hossain Shahal, K M B Asad, Payaswini Saikia, Adrita Khan, Fatema Akter, Amin Ahsan Ali, Md. Ashraful Amin, Arshad Momen, and A K M Mahbubur Rahman. “**RGC: A Radio AGN Classifier Based on Deep Learning: I. A Semi-Supervised Model for the VLA Images of Bent Radio AGNs**” submitted to *Astronomy & Astrophysics (A&A)*. [Q1 Journal] [Paper] [Code]

## Teaching Experience

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- Post-baccalaureate Teaching Assistant** **May 2021 – Jan 2022**  
*Independent University, Bangladesh, Dept. of Computer Science and Engineering* *Dhaka, Bangladesh*
  - Prepared the lab materials, provided programming support, and addressed student queries during lab sessions for Neural Networks and Data Mining course.
- Undergraduate Teaching Assistant** **Oct 2019 – Apr 2021**  
*Independent University, Bangladesh, Department of Physical Sciences* *Dhaka, Bangladesh*
  - Offered one-on-one tutoring to struggling students from various disciplines at Math Tutorial Center.
  - Worked with other tutors to manage the center and make sure students got the support they needed.

## Selected Projects

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- LLM Based Automated Website Vulnerability Scanner** **June 2025**
  - Worked on an automated web vulnerability scanner for autonomous reconnaissance, scanning, and vulnerability detection. Integrated a browser agent to simulate attacks (e.g., SQL injection, DDoS).
- Predicting Restaurant Orders with USTGCN** **January 2021**
  - Built a tool to forecast the number of orders a restaurant would receive the next day based on the last 7 days of order data, using a unified spatio-temporal graph convolutional network. [Github]
- RGC - Python Package** **November 2020**
  - Created a Python package for preprocessing radio signals received from radio telescopes to produce clean, noise-free images and classify them using established machine learning models. [Github]

## Awards, Honors & Achievements

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- Received the **IEEE Signal Processing Society Travel Grant** of **US \$1,000** for joining the **2024 IEEE ICIP** in Abu Dhabi, UAE (October 27-30). [Credentials]
- IUB academic honors: **VC’s List (3×)**, **Dean’s Merit List**, and **Dean’s List**. [Credentials]
- Winner:** Intra IUB Tech Fest Programming Contest (Summer 2019) and ACM Week Code Debugging Contest (2019). [Tech Fest] [ACM Week]
- Represented IUB in the **ICPC Asia Dhaka Regional 2019** and participated in various workshops, programming contests, and Olympiads. [ICPC] [Extracurricular Activities]

## Technical Skills

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- Languages:** Python, C++, C, JavaScript
- Libraries:** PyTorch, PyTorch-Lightning, LLaMA-Factory, Hugging Face, Flower, Scikit-learn
- Web Frameworks:** NextJs, React, Django, Laravel
- Miscellaneous:** Git, Docker, Apptainer, HTCondor, Slurm, MATLAB,  $\text{\LaTeX}$