Tasnim Jahin Mowla

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Objective

Motivated Computer Science and Engineering graduate with a proven record of academic excellence and research contributions, including peer-reviewed publications and journal reviewing experience. Skilled in teaching, research, and technical writing, with interests spanning Computer Vision, Cybersecurity, Health Informatics, FinTech, and Sustainable Energy.

Professional Experience

- **Lecturer** *December 2025 - Present*
  Department of Computer Science & Engineering, University of Asia Pacific Dhaka, Bangladesh
  - **Course Conducted:** Database Systems, Microprocessors and Microcontrollers Lab, Machine Learning and Deep Learning Lab, Robotics Lab & Computer Skills.

- **Research Assistant** *January 2025 - June 2025*
  Advanced Machine Intelligence Research Lab (Amir Lab) Dhaka, Bangladesh
  - **Model Development & Analysis:** Assisted with model training, tuning, and validation on multiple datasets; performed data analysis and visualization using Python.
  - **Research Collaboration & Documentation:** Participated in research discussions and peer reviews; prepared reports, documentation, and project presentations.

- **Overleaf and LaTeX Instructor** *April 2025*
  University of Asia Pacific Dhaka, Bangladesh
  - **Research Paper Reading & Writing Training:** Trained students to critically read research papers, extract key insights, and write academic papers using LaTeX and Overleaf.

Education

- **Bachelor of Science in Computer Science and Engineering** *July 2021 - June 2025*
  University of Asia Pacific Dhaka, Bangladesh
  - CGPA: 3.99/4.00
  - Ranked 1st in the batch

Publications

Journal:

[1] Bidita Sarkar Diba, Jayonto Dutta Plabon, **Tasnim Jahin Mowla**, Nazneen Nahar, Durjoy Mistry, Sourav Sarker, M.F. Mridha, Jungpil Shin. (2025). "Open problems and challenges in federated learning for IoT: A comprehensive review and strategic guide." In *Computers and Electrical Engineering* **(Impact Factor: 5.5, CiteScore: 12.2, Scopus Q1, SJR Q1)**, Volume 126, Article 110515. ISSN: 0045-7906. DOI: 10.1016/j.compeleceng.2025.110515.

[2] Abu Bakar Siddique Mahi, Farhana Sultana Eshita, **Tasnim Jahin Mowla**, Shah Murtuza Rashid Al Masud, Tanjina Helaly, Mahmudul Hasan Moon. "BrainDxNet: A Custom Convolutional Neural Network for Brain Tumor Diagnosis with Explainability." In *Heliyon* **(Impact Factor: 3.6, CiteScore: 7.8, Scopus Q1, SJR Q1)**, Volume 12, Issue 10. DOI: 10.1016/j.heliyon.2026.e45000.

[3] Abu Bakar Siddique Mahi, Apurba Datta, Safi Ullah Chowdhury, **Tasnim Jahin Mowla**, Nasima Begum, Tanjina Helaly. "BanglaRiceLeaf: A Benchmark Dataset for Automated Rice Leaf Disease Detection and Health Classification in Bangladesh." In *Data in Brief* **(Impact Factor: 1.9, CiteScore: 3.4, Scopus Q1, SJR Q1)**, ISSN:2352-3409, DOI: 10.1016/j.dib.2026.113050 .

[4] Shah Murtuza Rashid Al Masud, Farhana Sultana Eshita, Abu Bakar Siddique Mahi, **Tasnim Jahin Mowla**, Noor Mairukh Khan Arnob, Aloke Kumar Saha, M.F. Mridha. "LeafXNet: A Lightweight Explainable Model with Integrated Attention Mechanism for Fruit Leaf Disease Detection." In *Plant Direct* **(Impact Factor: 2.8, CiteScore: 4.8, Scopus Q1, SJR Q1)**, DOI: 10.1002/pld3.70201.

Book Chapters:

[1] Abu Bakar Siddique Mahi, Farhana Sultana Eshita, **Tasnim Jahin Mowla**, Aloke Kumar Saha, Shah Murtaza Rashid Al Masud. (2024). "QBNet: A Lightweight Quantized Model for Dynamic Banana Disease Recognition." In *4th International Conference on Novel & Intelligent Digital Systems*, pp. 512–523. Springer Nature Switzerland. DOI: 10.1007/978-3-031-73344-4_44.

[2] Farhana Sultana Eshita, **Tasnim Jahin Mowla**, Abu Bakar Siddique Mahi. (2025). "Explainable AI in Energy Forecasting: Understanding Natural Gas Consumption through Interpretable Machine Learning Models." In *Machine Learning Technologies on Energy Economics and Finance: Energy and Sustainable Analytics*, Volume 1 (pp. 57-77). Cham: Springer. DOI: 10.1007/978-3-031-94862-6_3.

[3] Farhana Sultana Eshita, **Tasnim Jahin Mowla**, Abu Bakar Siddique Mahi. (2025). "Feature Selection and Explainable AI For Transparent Windmill Power Forecasting." In *Machine Learning Technologies on Energy Economics and Finance – Energy and Sustainable Analytics*, Volume 2 (pp. 73-97). Cham: Springer. DOI: 10.1007/978-3-031-95099-5_4.

[4] Abu Bakar Siddique Mahi, Farhana Sultana Eshita, **Tasnim Jahin Mowla**, Aloke Kumar Saha, Shah Murtaza Rashid Al Masud. (2025). "Predicting Solar Radiation: A Fusion Approach with CatBoost and Random Forest Ensemble Enhanced by Explainable AI." In *Machine Learning Technologies on Energy Economics and Finance – Energy and Sustainable Analytics*, Volume 2 (pp. 155-180). Cham: Springer. DOI: 10.1007/978-3-031-95099-5_7.

[5] Abu Bakar Siddique Mahi, **Tasnim Jahin Mowla**, Aloke Kumar Saha, Shah Murtaza Rashid Al Masud. (2025). "Modeling Nuclear Fusion Reaction Occurrence with Advanced Deep Learning Techniques: Insights from LIME and SMOTE." In *Machine Learning Technologies on Energy Economics and Finance – Energy and Sustainable Analytics*, Volume 2 (pp. 181-202). Cham: Springer. DOI: 10.1007/978-3-031-95099-5_8.

[6] Bidita Sarkar Diba, **Tasnim Jahin Mowla**, Nazneen Nahar, Fahad Ahmed, Durjoy Mistry. (2025). "Privacy-Preserving Rheumatism Detection Using Federated Learning." In *Federated Learning in Health Care Technology*, (pp. 139-168). Singapore: Springer Nature Singapore. DOI: 10.1007/978-981-96-8353-6_8.

[7] Bidita Sarkar Diba, Md. Arafat Kabir, **Tasnim Jahin Mowla**, Nilanjan Dey, Durjoy Mistry. (2025). "Secure Collaborative Learning for CSV-Based Ovarian Cancer Diagnosis: A Federated Approach." In *Federated Learning in Health Care Technology*, (pp. 117-137). Singapore: Springer Nature Singapore. DOI: 10.1007/978-981-96-8353-6_7.

Publications Under Review

[1] **Tasnim Jahin Mowla**, Md. Ahasan Habib Nahid, Abu Zafar Mohammad Siam, Abu Bakar Siddique Mahi, Durjoy Mistry, Shah Murtaza Rashid Al Masud, M.F. Mridha. "Resource-Efficient Approach for Acute Lymphoblastic Leukemia Detection and Classification Using Knowledge Distillation with Explainability and Web Application." In *Applied Computational Intelligence and Soft Computing* **(Impact Factor: 3.3, CiteScore: 9.4, Scopus Q1, SJR Q1)**.

[2] **Tasnim Jahin Mowla**, Md. Mahmudul Hasan Shahin, Abu Bakar Siddique Mahi, Nishat Tasnim, Md. Rajibul Islam, Muhammad Aminur Rahaman. "XFedAHE-CAD: An Interpretable Privacy-Preserving Federated Learning Framework for IoT Cyberattack Attribution Detection." In *Journal of Cloud Computing* **(Impact Factor: 5.5, SJR Q1)**.

[3] Abu Bakar Siddique Mahi, **Tasnim Jahin Mowla**, Sanjida Siddiqa Mahima, Danastan Tasaouf Mridula, Md. Rajibul Islam, Muhammad Aminur Rahaman, Tanzir Mehedi Shawon. "URLAegis: An Explainable Federated Learning Framework for Phishing URL Detection." In *Computers and Electrical Engineering* **(Impact Factor: 5.5, CiteScore: 12.2, Scopus Q1, SJR Q1)**.

Publications in Progress

[1] **Tasnim Jahin Mowla**, Md. Ahasan Habib Nahid, Basirul Hasin, Maisha Noor, Aloke Kumar Saha, M.F. Mridha. "A Hybrid Knowledge Distillation Framework for Efficient and Interpretable Brain Tumor Classification on Edge Devices."

[2] **Tasnim Jahin Mowla**, Abu Bakar Siddique Mahi, Nishat Tasnim. "Enhancing Mpox Diagnosis with Diffusion-Based Augmentation and Interpretable Ensemble Model."

Peer Review

- **Expert Systems with Applications** — *May 2025 - August 2025*
  Completed 5 reviews for 5 manuscripts [Certificate]
- **Heliyon** — *April 2025 - August 2025*
  Completed 2 reviews for 2 manuscripts [Certificate]
- **IEEE Access** — *December 2024 - April 2025*
  Completed 9 reviews for 6 manuscripts

Projects

- **SwiftAlert: [ML-Based Community Safety and Crime Reporting System]** *[GitHub Repository]*
  Tools: [Django, HTML, CSS]
  - Developed a Crime Percentage Analysis module for assessing the safety of geographical areas based on reported incidents.
  - Implemented a Random Forest model for Crime Percentage Analysis, achieving enhanced insights into community safety.
  - Created a Criminal Awareness and Reporting section, ensuring users are informed about known criminals in their vicinity.
  - Applied incident reporting and alert dissemination methods to analyze crime patterns and improve safety awareness in the community.

Skills

- **Programming Languages:** C, C++, Python, Java.
- **Web:** Django.
- **Web Technologies:** HTML, CSS.
- **Database Systems:** MySql.
- **Data Science:** Machine Learning, Deep Learning, Federated Learning.
- **Packages:** PyTorch, Scikit-learn, Keras, Tensorflow.
- **Miscellaneous:** LATEX (Overleaf), Microsoft Office.

Honors and Awards

- **Dean's Honor Award** *Spring 2021*
  University of Asia Pacific [Certificate]
  - Recognized for outstanding academic achievements

- **Vice Chancellor's Honor Award** *Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024*
  University of Asia Pacific [Certificate]
  - Recognized for outstanding academic achievements

Volunteer Experience

- **Faculty Member, Research and Publication Unit, Department of CSE** *January 2026 - Present*
  University of Asia Pacific
  - **Responsibilities:** Contributing to research initiatives, publication activities, academic collaborations, and mentoring research-oriented students.
  - **Impact:** Supporting the development of a stronger research culture and promoting faculty and student engagement in research and scholarly activities.
  - **Skills developed:** Research leadership, academic collaboration, mentorship, and scholarly project coordination.

- **Judge, International Robot Olympiad (IRO) Bangladesh Open 2026** *September 2026*
  Bangladesh Open Source Network (BdOSN)
  - **Responsibilities:** Served as a judge for the Mission Challenge - Senior Group, evaluating autonomous robotics projects based on performance, technical execution, and adherence to competition requirements.
  - **Impact:** Contributed to the evaluation of over 500 students participating in the International Robot Olympiad Bangladesh Open 2026, the national round of the International Robot Olympiad.
  - **Skills developed:** Technical evaluation, critical assessment, event coordination, and professional communication.

- **President, Research and Publication Unit, Department of CSE** *January 2025 - June 2025*
  University of Asia Pacific [Certificate]
  - **Responsibilities:** Overseeing research initiatives, project coordination, and collaborative partnerships.
  - **Impact:** Enriched research culture, elevated student engagement, and strengthened institutional alliances.
  - **Skills developed:** Leadership, strategic foresight, and mentorship.

- **Volunteer, 45th International Collegiate Programming Contest World Finals, Dhaka** *6th - 11th November, 2022*
  Dhaka, Bangladesh [Certificate]

- **Responsibilities:** Accompanying staff and participants to venues, accommodations, and key locations during ICPC Dhaka.
- **Impact:** Ensuring timely and efficient transportation, contributing to the event's success.
- **Skills developed:** Enhanced coordination, communication, and problem-solving abilities.

- **Organizer, 1st Intra University Research Expo 2025, CSE-UAP** *13th May, 2025*
  Dhaka, Bangladesh [Event Recognition]
  - **Responsibilities:** Led the planning and execution of the 1st Intra-University Research Expo 2025 as President, coordinating logistics, segment design, and cross-institutional participation.
  - **Impact:** Engaged over 100 students in interdisciplinary research and innovation, fostering collaboration and exposure through expert evaluations, project showcases, and interactive activities.
  - **Skills developed:** Strengthened leadership, event management, team coordination, public communication, and strategic planning skills through hands-on execution of a large-scale academic event.

REFERENCES

- **Dr. Shah Murtaza Rashid Al Masud**

  Professor and Head
  Department of Computer Science and Engineering, University of Asia Pacific
  murtaza@uap-bd.edu

- **Dr. Aloke Kumar Saha**

  Professor
  Department of Computer Science and Engineering, University of Asia Pacific
  aloke@uap-bd.edu