H.M.SHADMAN TABIB

Curriculum Vitae

Department of Computer Science and Engineering
Bangladesh University Of Engineering and Technology,Dhaka,Bangladesh
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Education

2022–present **B.Sc, Computer Science & Engineering**, *Bangladesh University of Engineering and Technology*, Dhaka, Bangladesh.
Courses: Data Structure and Algorithm, Object Oriented Programming, Database, Compiler, Digital Logic Design, Theory of Computations, Computer Architecture, Microprocessor, Data Communication, Software Engineering

Journal Publications

2025 **Mostofa Rafid Uddin, Thanh-Huy Nguyen *, H.M. Shadman Tabib *, Kashish Gandhi, Min Xu**, Unsupervised Multi-scale Segmentation of Cellular Cryo-electron Tomograms with Stable Diffusion Foundation Model.
Under submission to a Q1 journal. biorxiv link: 10.1101/2025.06.25.661425

2025 **Mostofa Rafid Uddin, H.M. Shadman Tabib, Md Toki Tahmid, Ajmain Yasar Ahmed, Md Zarif Ul Alam, Zachary Freyberg and Min Xu** , Localization of Macromolecules in Crowded Cellular Cryoelectron Tomograms from Extremely Sparse Labels .
Under submission to a Q1 journal

Work Experience

Mar 2025–present **Research Assistant, Bangladesh University of Engineering and Technology (BUET)**.
Working on *"Identification of Dengue Breeding Sites through Object Recognition"* under Prof. Dr. M. Sohel Rahman, Dr Anindya Iqbal. Responsibilities include data collection, annotation, computer vision model implementation, and developing Flutter application for incident reports.

Supervisor: **Prof. Dr. M. Sohel Rahman**, CSE, BUET (*Google Scholar*)

 Prof. Dr.Anindya Iqbal, CSE, BUET (*Google Scholar*)

Research Experience

Carnegie Mellon University (Xu Lab)

Jun 2024–present **Unsupervised Object Detection**.
Reducing annotation burden for particle picking in Cryo-Electron Tomography imaging.

Advisor: **Dr. Min Xu**, Associate Professor, Computational Biology, CMU (profile)

Jun 2024–present **Unsupervised Segmentation on Cryo-ET Image**.
Preprocessing and denoising tomograms for novel segmentation techniques.

Advisor: **Dr. Min Xu**, Associate Professor, Computational Biology, CMU (profile)

University of Wisconsin-Madison

Oct 2024–present **Contextualized Machine Learning**.
Collaborative review paper on contextualized machine learning approaches.

Advisor: **Dr. Ben Lengerich**, Assistant Professor, UW-Madison (website)

Bangladesh University of Engineering and Technology

Mar 2025–present **Connectomics Data Segmentation**.
Developing automated segmentation algorithms for neural circuit reconstruction from EM images.
Advisor: **Prof. Dr. Md. Shamsuzzoha Bayzid**, CSE, BUET (*Google Scholar*)

Mar 2025–present **RNA Task Accuracy Estimation**.
Working on novel training paradigm with ablation study of multimodal inputs.
Advisor: **Prof. Dr. Md. Shamsuzzoha Bayzid**, CSE, BUET (*Google Scholar*)

Jun 2024–present **Brain Computer Interface**.
Medicine-assisted epilepsy prognosis with deep learning considering comorbid status.
Advisor: **Dr. A.B.M. Alim Al Islam**, CSE, BUET (*Google Scholar*)

Jan 2023–Oct 2024 **Agent-Based Modelling of Epidemiology**.
Developed stochastic spatio-temporal simulation model with mobile agents on multiplex networks (Under journal review).
Advisor: **Dr. K.M. Ariful Kabir**, Mathematics, BUET (*Google Scholar*)

Aug 2023–Dec 2024 **Agent-Based Modeling of SES**.
Explored livelihood dynamics in mangrove social-ecological systems using Mesa framework.
Advisor: **Prof. Dr. M. Sohel Rahman**, CSE, BUET (*Google Scholar*)

Jan 2025–present **Large Language Modeling**.
Verification of synthetic data quality with LLM-as-a-judge.
Advisor: **Dr. M. Sohel Rahman**, CSE, BUET (*Google Scholar*)

Oct 2024–present **Computer Vision**.
Breast cancer detection using semi-supervised learning with multimodal data integration.
Advisor: **Prof. Dr. M. Sohel Rahman**, CSE, BUET (*Google Scholar*)

2024 **H.M. Shadman Tabib, Jaber Ahmed Deedar**, End-to-End Bangla AI for Solving Math Olympiad Problem Benchmark.
International Journal of Natural Language Computing (IJNLC) (Accepted). Arxiv Link

Nov 2024 **H.M. Shadman Tabib, et al.**, Breast Cancer Detection Using Semi-Supervised Learning.
11th Intl. Conf. on Networking, Systems, and Security (NSyS 2024). DOI: 10.13140/RG.2.2.13394.57284

Academic Achievements

Jul 2022 **University Merit Scholarship**, Bangladesh University of Engineering and Technology
Jul 2021 **Dean's List Scholarship**, Bangladesh University of Engineering and Technology
Jan 2022 **Dean's List Scholarship**, Bangladesh University of Engineering and Technology
Jan 2023 **Dean's List Scholarship**, Bangladesh University of Engineering and Technology
Jul 2023 **Dean's List Scholarship**, Bangladesh University of Engineering and Technology

Skills

Programming Python (PyTorch, Keras, TensorFlow), C/C++, Advanced Java
Web Development HTML/CSS, Django, SQL
Academic Resources BUET CSE Academic Compendium on GitHub

References

Dr. M. Sohel Rahman
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Dr. A.B.M. Alim Al Islam
Professor, CSE, BUET
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