

Md Asib Rahman

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[Homepage](#) | [Github](#) | [Kaggle](#) | [Linkedin](#) | [Scholar](#)

Education

Bangladesh University of Engineering and Technology

Undergraduate at Department of CSE

Feb 2020 – March 2025

Dhaka, Bangladesh

- **CGPA:** 3.97/4.00
- **Position:** 9th out of 120

Publications

1. **Dispersion on a Circle**, Md Asib Rahman, Debjany Ghosh Aronno, Tanveer Rahman, Shin-ichi Nakano, Md Saidur Rahman, under review in Journal of Combinatorial Optimization
2. **DiLO: Disentangled Latent Optimization for Learning Shape and Deformation in Grouped Deforming 3D Objects**, Mostofa Rafid Uddin, Jana Armouti, Umong Sain, Md Asib Rahman, Xingjian Li, Min Xu, under review in AAAI 2026
3. **Open-RAG: Enhanced Retrieval-Augmented Reasoning with Open-Source Large Language Models**, Shayekh Bin Islam*, Md Asib Rahman*, K S M Tozammel Hossain, Enamul Hoque, Shafiq Joty, Md Rizwan Parvez. Published in **EMNLP 2024 Findings**. [Paper](#)
4. **How Social Media and Websites Shape the Future of E-commerce in Bangladesh: A Qualitative Study From Buyers' and Sellers' Perspectives**, Md Asib Rahman, Bijoy Ahmed Saiem, Md Shariful Islam Khan, Ishika Tarin, Tamanna Haque Nipa, ABM Alim Al Islam. Published in ACM COMPASS 2025. [Paper](#)
5. **"Social Media or Websites?": A Quantitative Investigation on Preferences of Buyers and Sellers in Bangladesh**, BA Saiem, Md Asib Rahman, MSI Khan, Ishika Tarin, Tamanna Haque Nipa, A. B. M. Alim Al Islam. Published in **CHI-LBW 2025**. [Paper](#)
6. **Medication Management Application for Directly Observed Treatment of TB Patients**, MH Tania, Md Asib Rahman, KU Ahmed. Published in ICEEICT 2023. [Paper](#)
7. **Affordable ELISA Reader: Design and Feasibility Study for Resource Constrained Regions**, LI Salsabil, C Chakraborty, N Tasnim, Md Asib Rahman, Shrebash Paul, Md. Tazuddin Ahmed. Published in ICECE 2024. [Paper](#)

Research Experience

Undergraduate Researcher

Nov 2023 - March 2025

[Graph Drawing and Visualization Lab, CSE, BUET](#)

- Supervisor: [Dr. Md. Saidur Rahman](#)
- Developed an algorithm for solving the **max-min dispersion problem on a circle** in **$O(n \log n)$** time. Given a set of n points located in a circle, our algorithm can find k points such that the minimum distance between any two chosen points is maximized. At first, we split the circle into $O(n)$ lines, then use divide and conquer algorithm to simultaneously solve for n lines. The work is under review for the Journal of Combinatorial Optimization.

Research collaboration

2023-2024

[Qatar Computing Research Institute](#)

- Supervisor: [Dr. Md Rizwan Parvez](#)
- We worked on adding **reasoning capabilities** to effectively use the retrieved evidence in **Retrieval Augmented Generation (RAG)**. Our method transforms an arbitrary dense LLM into a parameter-efficient sparse mixture of experts (MoE) model capable of handling **complex reasoning tasks**, including both single- and **multi-hop queries**. This work is published in [Findings of EMNLP 2024](#).

Intern

April 2025 - Present

[Xu-lab, Carnegie Mellon University](#)

- Supervisor: [Dr. Min Xu](#)
- Worked on parameterizing shape and deformation in 3d point clouds using a disentangled latent optimization based method. We used AI explainability to show our model focuses on important features. This work is under review for AAAI 2026.

Intern

Summer 2024

[The University of Illinois Urbana-Champaign \(UIUC\)](#)

- Supervisor: [Dr. Darko Marinov](#)
- Worked on the efficacy of the **mutation generation** methods in generating buggy mutants. We manually labelled LLM generated mutants. I **lead** one of the subtasks regarding analyzing mutants.

Research collaboration

2022 - 2023

Bangladesh University of Engineering and Technology

- Supervisor: [Dr. A. B. M. Alim Al Islam](#)
- Worked on understanding the **comparative behavior of buyers and sellers** in social media and websites. We have surveyed 101 participants, including 16 sellers through live interviews and online forms. We have used **Cramér's V test and network analysis** for quantative analysis. Furthermore, we performed **thematic analysis** for qualitative data. These works are published at [CHI-LBW](#) and [ACM COMPASS](#).

Research collaboration

2023 - 2024

- Supervisor: [Dr. Marzia Hoque Tania](#)
- I worked on prototyping a system to efficiently support directly observed treatment providers in managing their operations. In addition, I designed a centralized platform for tuberculosis treatment, connecting doctors, patients, government agencies, and health workers.

Research Collaboration

Jun 2022 - Jun 2023

BME, BUET

- Developed a **cost-effective ELISA reader prototype** for accurate detection of viral diseases in resource constrained settings, priced at **34 USD**.
- Regular Rapid Diagnostic Tests (RDT) in developing countries are only 75 - 80% accurate, leading to incorrect treatments. In contrast, our developed ELISA reader achieved an accuracy of **95.39%** in **clinical evaluations of 152 Hepatitis B** samples, addressing the issue of high-cost ELISA readers (4,000 to 33,000 USD) that are rarely accessible. This work has been published in [IEEE Xplore](#). [Presentation](#)

Competitions

Champion

SUST DL Enigma

Feb 2024

- **Road Object Detection:** Images of roads across 9 districts are given as a dataset. We built a robust model to accurately detect 13 types of objects, including car, truck, auto-rickshaw, person etc. We finetuned yolov6 - L6, yolov8, vitdet, mvit. Among them **yolov6 - L6** performs best and achieves mAP score of 0.66.
- [Competition link](#) | [Solution Paper](#) | [Presentation](#)

1st runner up

IEEE signal processing cup 2023

- **Psychosis Classification Challenge:** Differentiating between **schizophrenia (SZ)** and **bipolar psychosis (BPP)** using resting - state functional magnetic resonance imaging (**rsf - MRI**). The provided dataset was **high - dimensional** with 5460 features and only 742 samples, and **imbalanced** in a ratio of 3:5. We used **SVM** along with seed averaging, SMOTE, TOKEK, and Feature selection to achieve a score of 0.65.
- [Competition link](#) | [Solution Presentation](#)

Finalist

IEEE video and image processing cup 2025

- Infrared - Visual Fusion for Enhanced Drone Detection, Tracking and Payload Identification in Surveillance Videos.

Champion

DataVerse Challenge - ITVerse 2023

- **Bengali Text to IPA (International Phonetic Alphabet) Transcription:** Transforming written Bengali language content into IPA(International Phonetic Alphabet) for accurate pronunciation and linguistic analysis. Bangla is a **low - resource language** where traditional models do not work well. We used ByT5 as the encoding is language independent. We achieved a WER of 0.01420.
- [Competition Link](#), [Solution Paper](#) and [Presentation](#)

2nd runner up

DL Sprint 2.0 - BUET CSE Fest 2023

- **Bengali Document Layout Analysis:** Determining the locations of tables, text boxes, images, and paragraphs within documents written in Bangla such as Bangla story books, newspapers, official documents, etc. We used ensemble of 5 YOLOv8 models and achieved Dice score of 0.8964
- [Competition Link](#), [Solution Paper](#) and [Presentation](#)

Rising Team

Apurba presents Bhashabhrom: EEE DAY 2023 Datathon

- **Bangla grammatical error detection:** Identifying grammatical mistakes in Bengali language text. Grammatical Mistakes include spelling mistakes, missed or extra space, form or inflection errors, punctuation errors, etc. Finetuning Byt5 we achieved Levenshtein Distance of 1.19
- [Competition Link](#), [Solution Paper](#) and [Presentation](#)

Professional Experience

Senior AI Research Engineer

Mar 2025 – Present

Robofication LLC

- Working as Project Coordinator of sysmodeler.ai
- Sysmodeler is an AI-powered tool that generates **SysML Diagrams** from **multimodal specifications**. It leverages LLMs to understand user requirements and automatically create SysML diagrams, streamlining the design process for engineers.

Jr Software Engineer

August 2024 – Jan 2025

OpenRefactory Inc

- Automate **compiling and executing code** from any github repo using LLM. The system downloads the dependencies and executes the code in a containerized environment without any manual supervision.
- Automate finding and downloading the latest code of a library from GitHub, Bitbucket, etc. This system can find and download the latest or a specific tag for any open source library.
- **Automated documentation generator**: This tool can analyze codebases and generate documentation.

Volunteer Work Experience

Vice President and Project Manager

Apr 2024 – Mar 2025

Ankur International Students Chapter

- Under the supervision of Dr. Shaestagir Chowdhury, I have helped in education, healthcare, shelter, self-reliance, and emergency-response programs. I contributed to supplying free oxygen support services during the COVID-19 pandemic. I worked on the technical and documentation side.

Awards & Honors

Dean's List Scholarship

2nd, 3rd year

Awarded for outstanding academic performance during my undergraduate studies.

Dinajpur Board General Scholarship

HSC, SSC, JSC

Granted for ranking 10th in the Higher Secondary Certificate(HSC) exam, 20th in the Secondary School Certificate(SSC), 19th in the Junior Secondary Certificate(HSC) exam across the Dinajpur Board.

Math Olympiad

2017, 2019

I achieved 2nd runner up position in 2017 and champion in 2019 in Rangpur region of the national math olympiad.

Others

Language: Bangla , English

Programming Language: python, java, c++, c, javascript, SQL, dart