

# Md Asib Rahman

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

## Education

### Bangladesh University of Engineering and Technology

Undergraduate at Department of CSE

- **Expected Graduation:** March 2024
- **CGPA:** 3.97/4.00

Nov 2019 – Present

Dhaka, Bangladesh

### Rangpur Cadet College

Higher Secondary Certificate at Science

June 2017 – May 2019

Rangpur, Bangladesh

## Research Experience

### Working at Graph Design Lab, BUET

Nov 2023 - Present

- Supervisor: Md. Saidur Rahman
- We aim to create an algorithm for solving the max-min dispersion problem on a circle. Given, that  $N$  points are located in a circle, we have to select  $k$  points such that the minimum distance between any two points is maximized. This algorithm can help in facility location, resource distribution, etc. Currently, we are trying to achieve  $O(N)$  time complexity.
- I am pursuing an undergraduate thesis in this topic

## Publications

1. **Open-RAG: Enhanced Retrieval-Augmented Reasoning with Open-Source Large Language Models**, MH Tania, Md Asib Rahman, KU Ahmed. Published in EMNLP 2024 Findings
2. **Medication Management Application for Directly Observed Treatment of TB Patients**, Shayekh Bin Islam\*, Md Asib Rahman\*, K S M Tozammel Hossain, Enamul Hoque, Shafiq Joty, Md Rizwan Parvez. Published in ICEEICT 2023.
3. **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.

## Projects

### MathMaster

Clone of Brilliant.org

- This website uses interactive graphs to help students visualize and understand math.
- Tech stack: React, Express, Prisma, PostgreSQL

### BuyYourBook

A website where people can buy, sell, and review books.

- It is a standard e-commerce site with functionalities including a shopping cart, coupons, book displays, and book reviews.
- Tech stack: React, Spring Boot, PostgreSQL

### Simplified C compiler

C compiler which converts source code to x86 machine code

- The basic compiler supports arithmetic operators(+, -, \*, /, %), relational operators(<, <=, >, >=, !=), loops, if-else branching and can be extended for bitwise operators.

- Tech stack: Flex, Bison, C++

## 8 bit computer

*Simplified 8-bit computer with RISC architecture*

- Computer can be used to perform basic functions(addition, shift, store, load). ATMEGA was used to implement memory and alu.

## SaveYouFromYou

*2d game*

- You have to take the astronaut home using the force of gravity but with a twist, you cannot touch the astronaut.
- Tech stack: p5js

## DX Ball

*A clone of classic DX Ball game*

- Implemented DX Ball game using lgraphics (wrapper for OpenGL) without a game engine. Ground-up implementation of menu navigation and physics.
- Tech stack: OpenGL, C

## Player Buy

*Desktop app for real-time player market*

- This app can be used to buy and sell players among different clubs. The updates are shown in real time. Server and Agents are written from the ground.
- Tech stack: Java, JavaFx

## Competitions

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### Champion

*SUST DL Enigma*

*Feb 2024*

- **Road Object Detection:** Images of roads across 9 districts are given as a dataset. Our task was to build a robust model to accurately detect various vehicles and people on the road.
- Finetuned YOLO-v6 model to achieve mAP score of 0.66.
- [Competition link](#), [Solution Paper](#) and [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 (rsfMRI).
- Used SVM along with seed averaging, SMOTE, Feature selection to achieve score of 0.65.
- [Competition link](#) and [Solution Presentation](#)

### 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.
- Finetuned ByT5 to achieve 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
- Proposed 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
- Finetuned Byt5 and achieved Levenshtein Distance of 1.19
- [Competition Link](#), [Solution Paper](#) and [Presentation](#)

## Finalists

Robi Dathathon 3.0

- We need to tackle 3 time series problem in the selection round. We used LSTM as model.

## Participation

- I participated in various competitions throughout my undergraduate life including **Capture The Flag, IUPC, Gamejam, Blockchain Olympiad** etc. I became a finalist in almost all of them.

## Professional Experience

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### Vice President

Apr 2024 – present

Ankur International Students Chapter

### Project Manager

Oct 2020 – present

Onkur Foundation

- Contributed to supplying free oxygen support services during the COVID-19 pandemic.
- Contributed in technical and documentation section

## Awards & Honors

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### Dean's List

2nd and 3rd year

For academic excellence

### Govt. Scholarship

Junior School Certificate

19th position in Dinajpur Board

2014

### Govt. Scholarship

Secondary School Certificate

20th position in Dinajpur Board

2017

### Govt. Scholarship

Higher Secondary School Certificate

10th position in Dinajpur Board

2019

### Math Olympiad

2nd Runner-up in Rangpur region

2017

### Math Olympiad

Champion in Rangpur region

2018

## Others

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**Language:** Bangla (native), English (intermediate)

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