

Kazi Ababil Azam

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Work Experience

Software Engineer I , Synesis IT PLC	<i>Software Development, React, Go, TypeScript</i>	Jun 2024 to present Dhaka, Bangladesh
Contributed to the development of "Convay", a video conferencing and collaborative web application. Notable codebases include the meeting panel, desktop application (Convay Desktop), implementation of in-meeting annotation over shared screen, and offline file sync for Convay Drive.		
Project Intern , ERA InfoTech Limited	<i>Natural Language Processing, Data Analysis, Python</i>	May 2023 to Jun 2023 Dhaka, Bangladesh
Worked on a month-long internship project focused on analysis of real-life business data applying natural language processing techniques.		

Education

Bachelor of Science (B.Sc.) in Computer Science & Engineering , Bangladesh University of Engineering & Technology (BUET)	<i>CGPA: 3.67/4.00</i>	Apr 2019 to Jul 2024 Transcript
Notable Courses: Machine Learning, Microprocessor, Microcontroller & Embedded Systems, Computer Networking, Software Engineering, Computer Architecture, Operating System, Simulation & Modelling, Computer Security, Artificial Intelligence		

Research Experience

Towards Intelligent Traffic Signaling in Dhaka City Based on Vehicle Detection and Congestion Optimization		Jun 2023 to Jun 2024 NSysS 2024 , 2023 arXiv
<i>Undergraduate thesis under the supervision of Dr. A. B. M. Alim Al Islam.</i> <i>Posters presented at NSysS 2023, NSysS 2024. Manuscript pre-print archived.</i> Devised a system architecture for traffic signal scheduling that incorporates successive implementations of vehicle detection and multi-objective optimization in limited-resource environments, specifically focused on the non-lane-based, heterogeneous traffic of Dhaka. Implemented the proposed system architecture in a cost-effective manner and tested in a simulated environment and at a single five-road intersection, validating its feasibility. Prepared the NHT-1071 (Non-lane-based and Heterogeneous Traffic) dataset, consisting of images of Dhaka City traffic which involves the procurement of the images, the labeling of the vehicles, and benchmarking against state-of-the-art models. Applied in the context of traffic signaling for heterogeneous traffic observed in developing countries.		
Evaluation of Data Privacy in AI Chatbots		May 2025 to present
<i>Under the supervision of Dr. Dipto Das and Dr. Imtiaz Karim.</i> Collection and analysis of anonymous user reviews in online communities to detect analyze specific privacy concerns relevant to romantic or emotional AI chatbots.		
Evaluation Metrics for Generative Pedestrian Crossing Models in Simulation		Jun 2024 to present
<i>Under the supervision of Dr. Golam Md Muktadir, Dr. A. B. M. Alim Al Islam, and Dr. Mahmuda Naznin.</i> Analysis of real-life pedestrian trajectories from datasets in order to formulate metrics for generative trajectory models in autonomous vehicle simulations. Categorizing structures of trajectories found in public pedestrian trajectory datasets. Extracting statistical metrics corresponding to realistic behavior from the same datasets.		
Evaluation of Reasoning in Large Language Models		Jun 2025 to Aug 2025
<i>Under the supervision of Dr. Golam Md Muktadir</i> Analysis of thinking capability in large language models (LLMs) and testing the thinking capability in LLM for solving difficult problems in absurd language		

Academic Projects

Contradictory, My Dear Watson: Extended

ML, Natural Language Inference

[Github](#)

A project extended from a Kaggle competition to detect contradictions in multilingual text data, including Bangla text, through rigorous preprocessing and fine-tuning.

Implementation of a Congestion Control Algorithm for TCP Flows in ns-2

ns-2

[Github](#)

Implementation of a research paper on congestion control in ns-2 codebase, specifically in TCP to achieve improved throughput in wired and wireless networks.

SyncInc

Django, React, MUI, PostgreSQL

[Github](#)

A web-based project and task delegation management software designed for organizations. Stack includes PostgreSQL as the database, Django for the backend, ReactJS with Material UI for the frontend, Django REST framework for API development, and Django Channels for real-time notifications.

Laser Security System With Arduino

Arduino, Cyber Physical Systems

[Github](#) | [YouTube](#)

A project to control a laser security system with microcontrollers, where the ATmega32 unit manages the laser and the Arduino unit controls the alarm system and overall coordination.

Ray Tracing and Illumination Using OpenGL

C++, OpenGL

[Github](#)

Implementation of an image generation pipeline using ray tracing and illumination techniques to create realistic images of geometric shapes (sphere, pyramid, cube) and a 2D plane using OpenGL.

Compiler

Bison, Flex

[Github](#)

Built a compiler from scratch including steps for creating a symbol table, comprising a lexical analyzer, semantic analyzer, and generating intermediate code.

Technical Skills

Languages: C/C++, Python, Java, JavaScript, x86 Assembly, MySQL, Bison, Flex, Bash, Go, TypeScript

Frameworks: React, Bootstrap, Django, Express.js, Next.js, Electron.js, Wails, FastAPI

Technologies: LaTeX, Docker, Oracle DBMS, PostgreSQL, Git, Wireshark, Postman, OpenGL, ns-2

Libraries: OpenCV, PyAV, PyTorch, Keras, Pandas, Scikit-learn, SciPy, NLTK, Matplotlib, Seaborn, p5.js

Competitions

5th Place, IEEE CS, BUET presents "GameJam 2023"

p5.js

[Github](#)

5th position developing "Asteroids", a short, level based game using p5.js.

Jan 2023

Leadership

Director of Events, BUET Cyber Security Club

[Link](#)

Promotion and organization of cybersecurity related events, seminars and both intra and inter-university Capture The Flag (CTF) competitions multiple times throughout the tenure.

Jun 2023 to Apr 2024

Test Scores

TOEFL: 113/120 (Reading: 29/30, Listening: 30/30, Speaking: 27/30, Writing: 27/30)

GRE: 326.0/346.0 (Verbal: 157/170, Quantitative: 165/170, AWA: 4.0/6.0)

References

Dr. A. B. M. Alim Al Islam

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