

# Mahmudul Haque

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🌐 mhtafhim

## Education

**Ahsanullah University of Science and Technology**

**CGPA : 3.719/4.00**

*BSc in Computer Science and Engineering*

*Jun 2021 – Jun 2025*

**Courseworks:** Data Structure, Algorithms, Discrete Math, Information System Design and Software Engineering, Data Analytics, Cloud Computing etc

## Technologies and Skills

- **Languages:** C/C++, Java, Python, JavaScript
- **Databases:** MySQL, MSSQL, Firebase
- **Development Tools:** Postman, Git
- **Cloud:** AWS EC2, AWS S3
- **AI/ML:** ML Algorithms, Neural Networks, NumPy, Pandas, Scikit-learn, PyTorch, Keras, PySpark
- **Others:** OOP, Data Structures, Algorithms, Linux CLI, REST APIs, SSH

## Problem Solving

- Codeforces: Max Rating: 1263 (Pupil) [\[kiddo\]](#)
- CodeChef: Max Rating: 1542 (3 Star) [\[mhtafhim\]](#)
- LeetCode: (120+ solves) [\[mahmudulhoquetafhim\]](#)
- Problem-Solving: 700+ (problems solved at various online judges - CSES, LeetCode etc) [\[GitHub\]](#)

## Projects

**EasyMart** | *Java, Java Swing, Apache Derby*

| [\[GitHub\]](#)

- Implemented inventory control and sales tracking with dual interfaces for management and sales executives following OOP principles.

**SonicTheHedgeHog** | *C++, iGraphics (OpenGL)*

| [\[GitHub\]](#)

- Designed a 2D platformer featuring obstacle detection, enemy avoidance, and jump mechanics for engaging gameplay.

**Railway eService** | *JavaScript, React, C#, ASP.NET*

| [\[GitHub\]](#)

- Developed a full-stack railway ticketing service with RESTful ASP.NET backend and React frontend for real-time train tracking.
- Integrated C#/.NET for business logic and database operations, enhancing reliability and user authentication.

## Achievements

- **1st** - Intra AUST Programming Contest - Fall 2022 (among more than 100 teams)
- **1st** - Intra AUST Programming Contest - Spring 2023 (among more than 100 teams)
- **Participated** in National Undergraduate Mathematics Olympiad (NUMO 2023)
- Khondaker Ahmed Muktadir and Mosammat Khodeza Begum **Scholarship**(only 2 students get this)
- Got **Full Funded 100% Scholarship** for Undergrad(only 3% students get this scholarship)

## Research and Thesis

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### Deep Reinforcement Learning for Intelligent Transportation Systems

- Developed an intelligent traffic management system using Deep Reinforcement Learning (DRL) to mitigate urban traffic congestion by dynamically optimizing vehicle speed limits.
- Implemented and benchmarked Deep Q-Network (DQN) and Deep Transformer Q-Network (DTQN) agents within the SUMO (Simulation of Urban Mobility) environment.
- Demonstrated that the DTQN model consistently outperformed traditional algorithms and the baseline DQN by leveraging temporal data to make more adaptive and efficient routing decisions.

### Others Experiences

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- Organized AUST CSE Carnival 4.0
- Executive Member at AUST Programming and Informatics Club
- Head of Organizing Panel at AUST Inter University Programming Contest 2025