

# Mahmudul Haque

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## 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 ↗]
SonicTheHedgeHog	C++, iGraphics (OpenGL)	[GitHub ↗]
Railway eService	JavaScript, React, C#, ASP.NET	[GitHub ↗]

**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