

# Md. Monowarul Amin

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## Summary

Software Engineering student at IUT with hands-on **AI/ML** and **backend development** experience through internships and personal projects. Skilled in developing scalable web/mobile applications using ASP.NET Core, and Python frameworks. Strong problem-solving skills with a passion for innovation and continuous learning.

## EDUCATION

Islamic University of Technology — BSc. in Software Engineering	Jun 2021 – Sept 2025
Notre Dame College, Dhaka — Higher Secondary Certificate (Science)	Aug 2018 – Jun 2020

## PROFESSIONAL EXPERIENCE

AI/ML Intern - OrangeBD	Jun 2024 - Sept 2024
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- Developed a **RAG (Retrieval Augment Generation)**-based chatbot for the National Curriculum Portal using **LangChain**, **OpenAI API**, and **Pinecone** vector database to instantly access specific contents from textbooks.
- Built an **AI-powered semantic search tool** utilizing **sentence embeddings** to deliver most relevant search results.

Junior Backend Developer - DevStationBD	Jan 2023 - Jun 2024
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- Contributed to the development of a web-based and mobile blood donation platform built with **ASP.NET Core**, **Flutter**, and **MySQL**, aimed at connecting donors and recipients efficiently during emergencies.
- Focused on **backend development**, implementing real-time donor search and communication features.

## Programming Skills

- Languages:** C#, Python, C
- Frameworks:** ASP.NET Core, Django REST, FastAPI
- Libraries:** Numpy, Matplotlib, OpenCV
- Database:** MySQL, PostgreSQL
- Problem Solving:** 200+ problems solved ([Codeforces](#), [Leetcode](#))
- Design Principles:** OOP, SOLID, Clean Architecture
- Technical Tools:** Linux, Git, Gnu Debugger (GDB), [LATEX](#), jira

## ACADEMIC PROJECTS

CCTV-Video-Compression-for-Smart-Surveillance	Dec 2024
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- Developed a smart surveillance system that detects entry and exit events using the **YOLO11 object detection model**, and **Python OpenCV** capturing only relevant frames to **significantly reduce video storage**.

mCertiKOS: Educational Operating System Kernel	Aug 2024 - Oct 2024
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- Worked on a learning-focused OS kernel inspired by Yale University's CS422/522 course and the mCertiKOS framework.
- Implemented key components including **physical and virtual memory management**, **process/thread management**, **interrupt handling**, and **system call interface**.

BloodLink	Jun 2023 - Jun 2024
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- Designed and developed a cross-platform mobile application using **Flutter**, **ASP.NET Core**, and **MySQL** to efficiently connect blood donors with seekers.
- The dynamic donor-matching system locates nearby donors in real time and supports flexible donation scheduling.

Auction Bidding Site	Jun 2022 - Jul 2022
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- Developed a feature-rich auction website using Django MVT with real-time bidding, allowing users to list items and sell to the highest bidder after a set time.

## ADDITIONAL

- Certifications and Achievements:** [CS50's](#) Introduction to Artificial Intelligence, Champion in inter-departmental Volleyball Tournament, Higher Secondary Champion in Physics Olympiad Dhaka North 2019's regional
- Extra Curricular Activities:** Current Vice President - IUT Al-Biruni Research and Innovation Society, Former Senior Event Management Executive - IUT Debating Society, Former Assistant General Secretary - NotreDame Nature Study Club
- Language Skills:** English (Fluent), Bengali (Native)

## REFERENCE

- Dr. Muhammad Mahbub Alam**, Professor, Department of Computer Science and Engineering, IUT  
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