

# Mohammad Ninad Mahmud Nobo

Bangladesh University of Engineering and Technology (BUET) | CSE

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## SUMMARY

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- CSE undergraduate at BUET with full-stack software engineering experience across frontend/mobile interfaces, backend systems, and applied AI.
- Actively involved in research on LLM-based software testing, machine learning, and medical AI, with hands-on experience building end-to-end AI-driven systems and datasets.

## EDUCATION

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**Bangladesh University of Engineering and Technology (BUET)** **2022 – Present**

Bachelor of Science in Computer Science and Engineering (CSE)

**CGPA: 3.61 / 4.00**

**Undergraduate Thesis:** Web Testing Using Large Language Models

**Research Interests:** Artificial Intelligence, Machine Learning, Software Testing Automation, Medical AI

**Relevant Coursework:** Data Structures and Algorithms, Operating Systems, Computer Architecture, Database Systems, Software Engineering, Machine Learning, Artificial Intelligence, Compiler Design

## PROJECTS

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- **MindTrace: AI-Powered Dementia Care Application**

*Kotlin • Spring Boot • Spring AI • PostgreSQL • Redis • Firebase • Docker • Azure* 2025

- Engineered an AI-driven mobile and backend system for dementia care, integrating Android frontend with a scalable Spring Boot backend to support real-time caregiver workflows.
- Designed accessibility-first UI/UX tailored for elderly users with cognitive impairments, focusing on usability and clarity.
- **Links:** [GitHub Repository](#) | [Feature Demo](#) | [Infrastructure Demo](#)

- **Gemma VetCare: AI-Assisted Farming Support System**

*Kotlin • Android Studio • Spring Boot • Spring AI • MongoDB* 2025

- Developed an AI-assisted Android application for veterinary and farming decision support.
- Implemented RESTful APIs optimized for low-connectivity environments.
- **Links:** [GitHub Repository](#) | [Feature Demo](#)

- **SKILL HUB: Coaching Management System**

*Node.js • Express.js • SQL • REST APIs* 2023

- Designed a role-based web application with scalable RESTful APIs.
- Implemented relational database schemas for multi-role access control.
- **Links:** [GitHub Repository](#)

- **Remote Gardening System Using Embedded Systems**

*C • ATmega32 • Arduino* 2024

- Developed an embedded system for automated gardening using sensors and actuators.
- **Links:** [GitHub Repository](#) | [Feature Demo](#)

- **CSE310: Compiler Construction (Flex, Bison, 8086 Codegen)**

*C++17, Flex, Bison/Yacc • Linux* 2024

- Built a full compiler for a C-like language covering lexical analysis, parsing, semantic analysis, intermediate representations, and optimized 8086 assembly generation.
- **Links:** [GitHub Repository](#)

## PROJECTS (CONTINUED)

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- **Movie Database: Movie Information Management System**

*Java • JavaFX*

2022

– Developed a desktop-based movie information management system using JavaFX.

– **Links:** GitHub Repository

- **Computer Graphics Pipeline Implementation**

*C++17 • OpenGL/GLUT • Rasterization • Ray Tracing*

2025

– Implemented a full graphics pipeline including transformations, clipping, rasterization with Z-buffering, and ray tracing.

– Developed OpenGL demos with camera systems supporting 6-DOF control.

– **Links:** GitHub Repository

- **TCP Window Scaling Attack and Defense (MITM Lab)**

*Python • Computer Networks • Security • ARP Poisoning*

2025

– Implemented ARP poisoning-based MITM attacks exploiting TCP window scaling.

– Analyzed network traffic using Wireshark and tcpdump and implemented defensive mechanisms.

– **Links:** GitHub Repository

## RESEARCH & PUBLICATIONS

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- **Undergraduate Thesis: Web Testing Using Large Language Models**

*LLMs • Web Automation*

2025 – Present

– Designing and implementing LLM-based pipelines for automated web test generation.

– Creating and curating a dataset of functional descriptions and corresponding test cases for supervised evaluation.

– Investigating coverage improvement and robustness of generated tests.

– **Links:** GitHub Repository

- **MedCAR: Conflict-Aware Medical Reasoning System**

*Python • Deep Learning • Medical AI*

2026 – Present

– Built a multi-model system for chest X-ray analysis integrating heterogeneous AI tools.

– Developed a conflict resolution pipeline to reconcile contradictory outputs using semantic reasoning and confidence calibration.

– Designed trust-aware decision framework with uncertainty-based abstention for reliable predictions.

– **Links:** GitHub Repository

## TECHNICAL SKILLS

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**Languages:** C/C++, Python, Java, Kotlin, JavaScript, SQL

**Backend:** Spring Boot, Spring AI, Node.js, Express.js, REST APIs

**AI/ML:** PyTorch, TensorFlow, Scikit-learn

**Databases:** PostgreSQL, MongoDB, Redis

**Tools:** Linux, Git, Docker, Firebase

**Concepts:** System Design, API Development, Data Processing, Data Analysis

## ADDITIONAL INFORMATION

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**Languages:** Bangla (Native), English (Fluent), Hindi & Urdu (Conversational), Arabic (Reading)

**Programming Profiles:** NeetCode: mninadmnobo LeetCode: mninadmnobo