

Mohammad Ninad Mahmud Nobo

Bangladesh University of Engineering and Technology (BUET) | CSE

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SUMMARY

B.Sc. graduate in Computer Science and Engineering from BUET with experience in building intelligent systems at the intersection of large language models, software automation, and applied machine learning. Hands-on experience developing AI-driven applications across backend and mobile platforms with a strong focus on software engineering and scalable system design. Research interests include LLM-based software testing, AI evaluation, and medical AI, with experience in developing practical AI-powered solutions.

EDUCATION

Bangladesh University of Engineering and Technology (BUET)

2022 – 2026

Bachelor of Science in Computer Science and Engineering (CSE)

CGPA: 3.60 / 4.00

Relevant Coursework: Data Structures and Algorithms, Digital Logic Design, Database Systems, Operating Systems, Computer Architecture, Computer Networks, Computer Graphics, Algorithm Engineering, Artificial Intelligence, Machine Learning

Research Interests: LLM Systems, Software Testing Automation, Applied Machine Learning, Medical AI, Computer Networks

RESEARCH EXPERIENCE

• AutoTestGenX: Multi-Agent LLM Framework for End-to-End Web Testing [[GitHub](#)]

Python • LLM Engineering • Multi-Agent Systems • Web Testing • Browser Automation

2025 – 2026

- Developed a multi-agent LLM framework for automated web test generation and execution from natural-language requirements.
- Built benchmark datasets and evaluated generated test suites against engineer-validated ground-truth test suites.
- Achieved 84.0% test scenario coverage and 90% error detection, outperforming zero-shot and few-shot prompting approaches.

• MedCAR: Conflict-Aware Medical Reasoning System (Under Review) [[GitHub](#)]

Python • Deep Learning • Medical AI

2026

- 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.

• Bengali-Loop: Community Benchmarks for Long-Form Bangla ASR and Speaker Diarization [[arXiv: 2602.14291](#)]

Python • Speech Processing • Machine Learning

2026

- Contributed to building a large-scale benchmark dataset for long-form Bangla ASR and speaker diarization in a multi-institution collaboration, developing data collection and annotation pipelines for real-world speech data.
- Designed subtitle extraction and annotation workflows enabling evaluation with WER and DER.

PROJECTS

• MindTrace: AI-Powered Dementia Care Application [[GitHub](#) | [Feature](#) | [Infrastructure](#)]

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

2025

- Engineered an AI-driven mobile-backend system for dementia care with an Android frontend and scalable Spring Boot architecture, enabling real-time caregiver workflows and seamless system integration.
- Designed accessibility-first UI/UX for cognitively impaired users, focusing on clarity, simplified interactions, and usability to enhance engagement and reduce cognitive load.

• Gemma VetCare: AI-Assisted Farming Support System [[GitHub](#) | [Feature](#)]

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

2025

- Built an AI-assisted Android application for veterinary decision support, integrating backend services to deliver real-time recommendations for diagnosis and treatment workflows.
- Designed RESTful APIs optimized for low-connectivity environments with efficient request handling and streamlined data flow.

• Compiler Construction (Flex, Bison, 8086 Codegen) [[GitHub](#)]

C++17 • Flex • Bison/Yacc • Linux

2024

- Designed and implemented a full compiler pipeline for a C-like language, encompassing lexical analysis, parsing, semantic analysis, and intermediate code generation.
- Generated optimized 8086 assembly code with symbol table management and basic optimizations.

• Computer Graphics Pipeline Implementation [[GitHub](#)]

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

2025

- Implemented a complete graphics pipeline including transformations, clipping, rasterization with Z-buffering, and ray tracing.
- Developed OpenGL-based rendering demos with camera systems supporting 6-DOF control and real-time interaction.

TECHNICAL SKILLS

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

Frontend: React, Embedded JavaScript (EJS), HTML, CSS3

Backend & APIs: Spring Boot, Spring AI, Node.js, Express.js, REST APIs, Secure API Design

AI/ML: PyTorch, TensorFlow, Scikit-learn, Large Language Models (LLMs), Prompt Engineering, Multi-Agent Systems

Mobile Development: Android, Kotlin, Android Studio

Databases: PostgreSQL, MongoDB, Redis

DevOps & Tools: Linux, Git, Docker, Docker Compose, GitHub Actions, Firebase

ADDITIONAL INFORMATION

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

Programming Profiles: NeetCode: [mninadmnobo](#) LeetCode: [mninadmnobo](#)

Research Profiles: ORCID: 0009-0006-2781-6693 ResearchGate: Mohammad Ninad Mahmud Nobo