

Nafiz Khan

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Profile

I am a B.Sc. graduate in Computer Science and Engineering from BRAC University with a focus on software engineering and applied machine learning. I am a full-stack developer specializing in the MERN stack, with experience in building scalable, production-ready web applications. I completed undergraduate research on anchor-guided weight repair for stabilizing pretrained language models under quantization and weight noise. With a strong foundation in data structures, algorithms, and system design, I aim to develop robust, efficient systems that bridge modern software engineering and trustworthy AI.

Skills

- **Languages:** Python, C, JavaScript (ES6+), SQL, Solidity, PHP, Assembly, TypeScript
- **Frameworks & Libraries:** MERN, React.js, Next.js, Socket.IO, PyTorch, Scikit-learn, Web3.js, Prisma ORM
- **Tools & Platforms:** Docker, Git, GitHub, Supabase, Hyperledger Fabric, OAuth2, Passport.js, n8n, Puppeteer
- **AI & Processing:** NLP, Groq AI, Compromise.js, pdf-parse, mammoth, Regex
- **Other:** Linux, Figma, Arduino, STM32, Raspberry Pi

Education

- BRAC University** — BSc in Computer Science and Engineering Jan 2022 – Jan 2026
- GPA: 3.64 / 4.00
- Adamjee Cantonment College** — Higher Secondary Certificate (HSC) 2018 – 2020
- GPA: 5.00 / 5.00
- Bangladesh International School and College** — Secondary School Certificate (SSC) 2004 – 2018
- GPA: 5.00 / 5.00

Projects

TrackUp - Job Application Management Platform

- Built a platform for managing job applications with tracking, reminders, analytics, AI chatbot, resume parsing, and job recommendations via NLP.
- Tools Used: React.js, Tailwind CSS, Node.js, Express.js, MongoDB, Socket.IO, Docker, Vercel, Render

ThesisFlow - Thesis Management System

- Developed a web-based platform to streamline thesis submission, progress tracking, and supervision for students and faculty.
- Tools Used: MongoDB, Express.js, React.js, Node.js (MERN stack), HTML, CSS

Due Diligence Questionnaire Agent

- Built an AI-powered full-stack system that automates due diligence questionnaires using document indexing, semantic search, and LLM-based answer generation with citations and human review.
- Tools: Node.js, Express, MongoDB, Redis, ChromaDB, Groq (LLaMA 3.1), HuggingFace, React, TypeScript, Tailwind CSS

Sweet Shop - E-Commerce Platform

- Built a full-stack e-commerce platform for a sweet shop with shopping cart, secure payment processing, order tracking, fraud prevention, and admin panel for product management.
- Tools Used: React.js, TypeScript, Vite, Tailwind CSS, Supabase (PostgreSQL), shadcn-ui

Realtime Collaborative Playlist

- Built a real-time collaborative music playlist application with Server-Sent Events (SSE) for live synchronization, drag-and-drop reordering using fractional indexing, voting system, and now playing simulation.
- Tools Used: Next.js 16, React 19, TypeScript, Prisma ORM, SQLite, Tailwind CSS 4, Framer Motion

Admin Analytics Dashboard

- Developed a production-ready admin analytics dashboard featuring interactive data visualizations with Recharts, KPI metrics with trend indicators, dark/light theme switching, advanced filtering, and CSV export functionality.

- Tools Used: Next.js 16, React 19, TypeScript, Tailwind CSS v4, Recharts, Zustand, Lucide React

Software Course Management System

- Web-based platform for managing university courses, allowing administrators to create courses, assign instructors, enroll students, and track academic progress.
- Tools Used: HTML, CSS, Node.js, React, MongoDB

VaDE - Variational Deep Embedding for Face Clustering

- Implemented Bayesian deep clustering on Olivetti Faces dataset.
- Tools Used: Python, PyTorch, Scikit-learn, NumPy

The Science of Cinema: Predicting Movie Ratings

- Implemented machine learning models to predict movie ratings based on various features, analyzing data from multiple sources.
- Tools Used: Python, Pandas, Scikit-learn

DisasterGuard DApp - Blockchain Disaster Recovery Training Platform

- Built a decentralized application (DApp) for training and awareness in disaster recovery, leveraging blockchain for secure certification and training records.
- Tools Used: Solidity, Ethereum, Web3.js, React.js, Ganache

BlockProperty - Decentralized Property Registry on Hyperledger Fabric

- Blockchain-based property registry system ensuring transparent, secure, and tamper-proof land ownership records.
- Tools Used: Hyperledger Fabric, Node.js, Docker, Smart Contracts (Chaincode)

Experience

IT Instructor, Zentorra — Dhaka, Bangladesh Feb 2025 – Jul 2025

- Delivered recorded classes on Python fundamentals and project-based learning for beginner-level students.

Private Tutor, Self-Employed — Dhaka, Bangladesh Jan 2024 – Apr 2025

- Tutored undergraduates in Python, data structures, and computer graphics.

Research Experience

Undergraduate Researcher, BRAC University, CSE Jan 2025 – Jan 2026

Title: Anchor-Guided Repair: Enhancing Stability of Compromised Pretrained Language Models Against Low-Precision and Weight Noise Attacks

- Developed an anchor-guided weight repair mechanism to stabilize compromised pretrained language models.
- Demonstrated robustness against quantization and weight noise attacks without retraining.

Achievements

- **2nd Runner-up** | BRAC CSE471 Project Showcase (Summer 2025) for **ThesisFlow**
- Completed an **Intermediate ChatGPT** course on DataCamp, focusing on advanced prompt engineering and understanding GPT architecture.
- Completed the **Learn Blockchain and Cryptocurrency from Beginning** course on Udemy, gaining foundational knowledge in blockchain, Bitcoin, crypto exchanges, and DeFi.
- Completed the **Intro to Machine Learning** course on Kaggle, learning practical data science and ML applications.
- Completed the **Introduction to Microsoft 365 Copilot** course on Microsoft Learn, understanding AI integration in productivity tools.
- Completed the **AI Foundation** course on AI Certs, covering core AI concepts, machine learning, ethics, and business applications.
- Completed the **Intermediate SQL** course on DataCamp, mastering aggregate functions, sorting, grouping, and data presentation.