

Sadik Mahmud

COMPUTER SCIENCE GRADUATE · SOFTWARE ENGINEER · FULL-STACK & AI SYSTEMS

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S U M M A R Y

Computer Science graduate (Data Science major) from United International University with a CGPA of 3.75 and a consistent merit scholarship. Focused on backend engineering for AI systems — designing and shipping multi-agent LLM architectures, RAG pipelines with vector databases, and real-time backend infrastructure using FastAPI, Django, and Node.js. Built three production-grade systems covering autonomous coding agents, intelligent tutoring platforms, and large-scale full-stack ecosystems, each with authentication, caching, and containerized deployment. Seeking an entry-level Software Engineer / AI Backend Engineer role where I can apply these skills from day one.

[3 Production AI/Backend Systems](#) · [Multi-Agent LLM Architectures \(LangGraph\)](#) · [RAG & Vector Search \(Pinecone\)](#)

E D U C A T I O N

B.Sc. in Computer Science — Major: Data Science

Feb 2022 – Jun 2026

United International University · Dhaka, Bangladesh

CGPA: 3.75 / 4.00 · Merit Scholarship: 25%–50% awarded across all trimesters

P R O J E C T S

Archon — AI-Powered Autonomous Coding Agent

2025

[Live Demo](#) (archon-1vsa.onrender.com) · [GitHub](#) (github.com/IamSadik/Archon-Frontend)

- Built a full-stack autonomous coding agent comparable in scope to GitHub Copilot and Cursor, featuring a multi-agent architecture with a Master Orchestrator coordinating independent planning and execution agents
- Designed a hierarchical project planning system that decomposes user prompts into structured feature trees and actionable task breakdowns before generating any code
- Implemented extended memory management via RAG with Pinecone vector embeddings for semantic code search, file indexing, and cross-session context retention across project codebases
- Delivered real-time agent status updates to the frontend using WebSockets via Django Channels; managed caching with Redis and persistent storage via Supabase (PostgreSQL)
- Containerised the full application with Docker; integrated Supabase OTP for secure password recovery

Stack: Django · Next.js · OpenAI API · Pinecone · Redis · Supabase · Docker · WebSockets · JWT

COSMOS-ITS — Intelligent Tutoring System

2024 – 2025

[Live Demo](#) (cosmos-its-amber.vercel.app) · Capstone / Research Project

- Architected a full-stack AI-powered learning platform for university students featuring course-specific intelligent agents built with LangGraph, each equipped with domain tools for contextual assistance
- Implemented personalised learning paths, student progress tracking, adaptive quiz sessions targeting weak topics, and an AI study planner with exam routine and trimester outline features
- Developed a grade prediction model trained on synthetic student data using Scikit-learn, evaluating multiple regression approaches to identify at-risk students for the AI study planner
- Presented the platform in a live showcase to faculty and peers, with the supervising professor expressing interest in piloting it with real institutional course data
- Secured data integrity and user sessions using JWT authentication; integrated OpenAI API for LLM capabilities and Pinecone as the vector database for semantic retrieval
- Conducted load testing with Locust, validating stable response times under 100+ concurrent simulated users to inform scaling decisions

Khadok — Full-Stack Food Ordering Platform

2023 – 2024

[Live Demo](#) (khadok2-0.onrender.com) · [GitHub](#) (github.com/iamsadik/Khadok2.0)

- Engineered a multi-role food delivery ecosystem for the Bangladesh market serving Consumers, Restaurant Owners, Riders, and Admins — supporting delivery, pickup, and dine-in booking workflows
- Integrated MapTiler and Leaflet.js for custom map-based restaurant discovery with proximity clustering, OSRM for real-world routing and ETA calculation, and geofencing to trigger automated rider notifications
- Built real-time order status tracking and a two-way consumer-rider chat using Socket.IO; implemented browser push notifications via Service Workers for background delivery alerts
- Developed immersive 3D dine-in features using Panolens.js for 360° restaurant interior previews and Three.js for interactive table selection models
- Integrated bKash Checkout API for mobile wallet payments with webhook support for transaction confirmation and logging; managed relational data with Supabase PostgreSQL

Stack: Node.js · JavaScript · Supabase · Socket.IO · Leaflet.js · OSRM · Three.js · bKash API

T E C H N I C A L S K I L L S

Backend & Frameworks: Node.js · Express.js · FastAPI · Django

Concepts & Practices: REST API Design · Multi-Agent Systems · RAG Pipelines · Authentication & Authorization (JWT/OAuth) · Microservices · System Design · Load Testing · CI/CD

Frontend: Next.js · JavaScript · HTML5 · CSS3

Databases & Cloud: PostgreSQL · MongoDB · MySQL · Pinecone · Supabase · Redis

AI & Machine Learning: Python · LangGraph · LangChain · PyTorch · Scikit-learn · Pandas · TensorFlow · OpenAI API

Languages & Tools: C · C++ · C# · Java · JavaScript · Docker · Git · Postman · Figma · VS Code · Google Colab

Currently learning: ASP.NET Core (enterprise .NET backend development)

S O F T S K I L L S

Communication, Collaboration, Problem Solving, Time Management

C E R T I F I C A T I O N S & A C H I E V E M E N T S

- Graphic Design Certificate — Shikhbe Shobai (2022)
- Merit Scholarship recipient — United International University (2022–2026), awarded 25%–50% scholarship every trimester for consistently ranking in the top academic tier