

EDUCATION

- North South University** Dhaka, Bangladesh
B.Sc. in Computer Science and Engineering; CGPA: 3.86 Sept. 2021 – Dec 2025

EXPERIENCE

- Obby LLC** USA (Remote)
Product Engineer May 2025 – Present
 - Leadership & Product:** Led cross-functional work across engineering, operations, and product while shipping B2B SaaS systems for review automation and AI-powered communications.
 - Growth Automation:** Designed acquisition tracking, inbound lead flows, and workflow automations to scale repeatable operations.
 - Agentic AI:** Built production multi-agent workflows with tool orchestration, MCP-powered automation, and decision loops.
 - Voice AI:** Currently building production-grade AI voice agents and Agentic Council frameworks for multi-tenant SaaS use cases. Blog.
- NSU MI Lab x RobotBulls** Dhaka & Luxembourg (Hybrid)
Research Assistant - AI/ML Engineer Apr 2025 – Nov 2025
 - Talking Avatars:** Led R&D for real-time audio-driven facial animation, lip-sync, gestures, and avatar systems for robotic and digital applications.
 - Generative Lip-Sync:** Designed diffusion- and GAN-based video generation pipelines with customizable avatars, idle motion, latent interpolation, and spatio-temporal realism metrics.
 - 3D Audio-to-Face:** Built morph-target and blendshape pipelines, including vertex-to-blendshape conversion for NVIDIA Audio2Face outputs.
 - Low-Latency Serving:** Architected GPU-accelerated inference and streaming with multi-GPU orchestration, WebRTC/RTMP deployment, FastAPI, PyTorch, Triton, CUDA, and FFmpeg. Demo.
- AGT Software Partners** Dhaka & USA (Remote)
Software Engineering Intern Aug 2024 – Jun 2025
 - Employee Platform:** Developed secure standups, project and time tracking app with Next.js, TS, Socket.IO.
 - AI & Analytics:** Integrated Hugging Face chatbot, LLM summaries, ticket categorization, dashboards, anomaly alerts, and PDF/CSV exports.
 - Security & Impact:** Implemented email notifications, token revocation, rate limiting, and session management; co-developed a foster care platform for AGT social initiatives.

PROJECTS

- Athena: Autonomous Competitive Intelligence Platform:** Built a **LangGraph/LangChain** multi-agent research system with planner approval, parallel scraper/analyst fan-out, ChromaDB **RAG**, critic retry loops, WebSocket progress, and a Next.js UI. [GitHub]
- RAG Medical Chatbot:** Built an end-to-end medical PDF chatbot with **RAG**, Hugging Face embeddings, a vector store, Flask UI, chat history, and session-based conversation state. [GitHub]
- Algolume:** Built a local-first DSA learning platform with **React, Vite, TypeScript, Tailwind**, frame-based algorithm visualizers, Pyodide Python execution, hidden-test grading, notes, and optional Supabase sync. [Live]
- DynApex: Dynamic Parallelization Tool:** Built a **C++/OpenMP** tool for dependency analysis, profiling visualization, and dynamic CPU/GPU execution-mode dispatch; compared normal, CPU, and GPU modes for parallelization impact. [GitHub]
- Realtime Chat Application:** Built with **Socket.IO, React, Node.js, Zustand**. Features include real-time sync, typing indicators, and MongoDB session persistence. [GitHub]
- Fitness App:** Built a cross-platform fitness app with **React Native**, featuring authentication, workout tracking, progress visualization, and fitness API integration. [GitHub]

THESIS

- PNEUMA: Perceptual Noesis for Episodic Universal Memory Architecture:** B.Sc. thesis under Dr. Nabeel Mohammed; designed a model-agnostic long-term video memory system for egocentric QA using **SQL, vector databases**, and **knowledge graphs**. Added week-clustered indices and adaptive query planning, reaching **72.8%** NextQA zero-shot accuracy and **98% recall** on temporal BETWEEN queries.

TECHNICAL SKILLS

Languages: Python, C++, C, Java, JavaScript, TypeScript, SQL

Technologies: FastAPI, REST APIs, LangChain, LangGraph, RAG, ChromaDB, PyTorch, TensorFlow, NVIDIA Triton, CUDA, WebRTC, Socket.IO, Next.js, MERN, n8n, OpenCV, FFmpeg, Git

PROGRAMMING ACHIEVEMENTS

- **Team Achievements:**

18th/130 – AUST IUPC 2025 (*NSU_PyramicSchemers*);

20th/100 – CUET IUPC 2024 (*NSU_MinimumStonkingTriple*);

29th/196 – JU NCPC 2024 (*NSU_OneLastTime*);

67th/300 – ICPC Asia Dhaka Regional 2024 (*NSU_PyramicSchemers*)

53rd/313 – ICPC Asia Dhaka Regional 2025 (*NSU_EktaNaamDaoFast*)

- **Individual Achievements:** Codeforces **Expert** (Max: 1650) (Profile);

REFERENCES

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