Arijit Roy

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 Portfolio   LinkedIn   GitHub

Education

East Delta University   *Sept 2022 – Sept 2026*
BSc, Computer Science and Engineering   **CGPA: 3.72 / 4.00**
Recipient of the Chairman's Distinguished Scholarship for excellence in merit.

Govt. Hazi Mohammad Mohsin College   *2020 – 2021*
Higher Secondary Certificate (HSC) – Science   **GPA: 5.00 / 5.00**

St. Placid's School & College   *2009 – 2019*
Secondary School Certificate (SSC) – Science   **GPA: 5.00 / 5.00**

Projects

ML Study Buddy ⤴   Next.js, FastAPI, Python   Live

- **Engineered** a **Retrieval-Augmented Generation (RAG)** system combining Next.js frontend and FastAPI backend to deliver **intelligent document retrieval** and AI-powered machine learning tutoring.
- **Integrated** fine-tuned embeddings using sentence-transformers, achieving **15–25% improvement** in retrieval metrics (**Recall@5, MRR, NDCG**) through contrastive learning and synthetic query generation.
- **Implemented** voice interaction features with **Whisper STT** and **SpeechT5 TTS**, enabling hands-free learning; deployed on Vercel with scalable FastAPI backend supporting PDF, OCR (TrOCR), and web content processing.

FloodGuard Aid Network ⤴   React, Node.js, MongoDB   Live

- **Built** a disaster relief web application connecting flood victims with volunteers for a **national hackathon**.
- **Integrated** geolocation, mapping, and image upload features to facilitate **efficient aid distribution**.
- **Ensured** seamless data handling using **React**, **Node.js**, and **MongoDB** with responsive UI design.

AcademiaConnect ⤴   MERN Stack

- **Developed** a university social platform enabling students to share posts, comment, build connections, and view dynamic class schedules.
- **Implemented** user authentication, profile management, and friend request functionality using the **MERN stack**.

AcademiaConnectApp ⤴   React Native, Supabase

- **Developed** a React Native + Supabase mobile app for university students and faculty to connect and manage academics.
- **Delivered** key features including posts, comments, profiles, friend requests, **real-time notifications**, and schedule viewer.

Achievements

- **ICPC** (International Collegiate Programming Contest) **Regional Contestant** (Dhaka Site, 2024) – solved **3 problems** in 5 hours.
- Participated in a **National Hackathon** organized by Programming Hero.
- **UIU CSE Fest Programming Contest** – solved **3 problems** in 5 hours.
- **BUET CSE Fest Programming Contest** – solved **4 problems** in 5 hours.

Extracurricular Activities

Executive Board Member, EDU Computer Club *2023 – Present*

- **Led and coordinated** club activities empowering **250+ members** with technological skills; fostered collaboration among executives and organized coding workshops by **Phitron** and **Programming Hero**.
- Organized **EDU HackFest 2025**, an intra-university hackathon – contributed to problem statements and coordinated event logistics for smooth operations and strong student engagement.
- Secured approximately **80,000 BDT** in funding through sponsorships, university allowances, and member contributions.

Technical Skills

Languages	JavaScript, Python, HTML/CSS
Frontend	React, Next.js, React Native, Tailwind CSS
Backend & DB	Node.js, Express.js, FastAPI, MongoDB, Supabase, REST APIs
AI / ML	Machine Learning, Deep Learning, RAG, sentence-transformers, Federated Learning
Tools	Git, Arduino, Vercel

References

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