

KABYA MITHUN SAHA

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[GitHub](#) | [LinkedIn](#)

Backend / Full-Stack Engineer | Competitive Programmer

Professional Summary

- Backend-focused CS undergraduate with production experience building AI-powered document processing systems and scalable microservices using FastAPI and Next.js. Codeforces Expert (1672) and CTF champion with strong foundations in systems design, security, machine learning, and performance-critical backend architecture.

Education

- University of Dhaka**—Bangladesh

B.Sc. in Computer Science and Engineering

– GPA: **3.62**/4.00

Expected Graduation: January 2027

– **Relevant Coursework:** Algorithms, Operating Systems, Databases, Computer Networks, Software Engineering

Technical Skills

- Backend:** Python (FastAPI), Node.js, SQL, PostgreSQL, RESTful APIs, Docker, Celery, Redis, RabbitMQ
- Machine Learning:** TensorFlow/Keras, PyTorch, YOLOv8, CNNs, model evaluation, RAG, ChromaDB
- Frontend:** Next.js, React, TypeScript, Flutter, Tailwind CSS
- DevOps & Tools:** Docker Compose, Kubernetes, Git, CI/CD, Linux, async task queues, message brokers
- Systems & Security:** Competitive Programming (1500+ problems), CTF (Web, Crypto, Reversing, Forensics)

Achievements

- Competitive Programming, CTF & Datathons**

- [Codeforces Expert \(1672\)](#) | [CodeChef 4 Star](#) | 1500+ problems solved | ICPC Asia Regional (2×)
- **Champion, DUCTF 2024** | **1st Runner-up, CTF, NSU Cybnauts 2026** | **2nd Place, Al Khwarizmi CTF 2025**
- **2nd Runner-up, Datathon (Bengali LLM Hallucination Detection), IUT 12th ICT Fest 2026**
- **Runner-up, Battle of Brains 2023 & 2024** | **4th Place, CUET DevOps Hackathon** | 15+ national contests

- Leadership**

- **General Secretary, CSEDU Informatics Club** — Organized Battle of Brains 2025 (10th edition): 138 registrants, 105 attendees, 10-problem ICPC-style contest across 4 departments; mentoring students in CP
- **Vice President, Josephite Math Club** | **Academic Team Member, BdMO**

Experience

- Backend Developer**—Makebell LTD

October 2025 – Present

- Architected FastAPI microservices for AI-powered legal document processing: clause extraction, template generation, draft review
- Built DOCX comparison engine (redline reports up to 100MB) and OCR microservice (Qwen Vision, PyMuPDF), integrated in an async pipeline for production workloads
- Containerized 3+ services with Docker Compose: health checks, resource limits, dev/prod separation

- Fullstack Developer**—Sociofi Technology

May 2025 – August 2025

- Built and deployed an internal employee management system with role-based access control, used by production teams for daily operations
- Developed backend APIs with request validation and authentication; delivered production-ready features under tight deadlines

- **Programming Annotator**—GenMorphics AI Solutions

Aug 2023 – Present

- Annotated Python and mathematical problems for AI training datasets, ensuring correctness, edge-case coverage, and validation consistency

Projects

- **Hopper – Self-Hosted VM Cloud Platform**—Go, gRPC, FastAPI, Kubernetes, NATS, SvelteKit

[Repo](#)

- Built a VM cloud platform for universities that slices bare-metal compute into isolated, SSH-accessible containers: Go/gRPC orchestrator managing Kubernetes pod lifecycles, FastAPI gateway, and Keycloak OIDC SSO with role-based access
- Implemented credit-based billing on a double-entry PostgreSQL ledger (advisory locks against race conditions), NATS JetStream event pipeline with auto-termination on credit exhaustion, real-time metrics via SSE, and Cilium zero-trust network policies isolating tenant VMs

- **Bangla News Photocard Forgery Detection**—TensorFlow / Keras, PyTorch, YOLOv8

[Live Demo](#)

- Trained and benchmarked CNN and YOLOv8 classifiers that detect fabricated Bengali news photocards directly from pixels (no OCR), reaching 97.4% pooled accuracy under stratified group 5-fold cross-validation
- Designed a leakage-free evaluation harness grouping augmented images back to their source originals; deployed a live verifier on Hugging Face Spaces with a user-feedback loop; authored an IEEE-format paper

- **CodeJudge – Online Programming Platform**—Node.js, Next.js, Docker

[Repo](#)

- Built full-stack online judge with sandboxed multi-language code execution, resource limits, and real-time leaderboards
- Dockerized for scalable deployment with unit, integration, and load testing; includes AI-powered problem generation

- **Text2SQL Analytics System**—FastAPI, PostgreSQL, Google Gemini

[Repo](#)

- Built natural language to SQL conversion system with data normalization (1NF/2NF/3NF), SQL sanitization, and query caching
- Achieved 100% pass rate on core system tests (54/54) with connection pooling and audit trails

- **SecureVault – Encrypted File Storage**—FastAPI, Python, Docker

[Repo](#)

- Designed encrypted cloud storage using AES-256 and RSA hybrid encryption with secure file sharing and access control
- Built audit-ready RESTful APIs with request validation and endpoint documentation

- **Study Helper Pro – AI Study Assistant**—FastAPI, Next.js, ChromaDB, Celery, Redis

[Repo](#)

- Built RAG-powered document Q&A platform: PDF upload, semantic search via ChromaDB embeddings, and context-aware answers using Google Gemini
- Async PDF processing with Celery/Redis workers, Supabase auth with JWT, and multi-user isolated document collections

- **Hill Climb Racing**—C++, SDL2

[Repo](#)

- Physics-based game built from scratch with custom collision detection and game loop optimization