

Souvik Rahut

souvikrahutofficial@gmail.com | linkedin.com/in/souvikrahut | Kolkata, India

EDUCATION

Guru Nanak Institute of Technology (GNIT), Kolkata

Bachelor of Technology, Information Technology | CGPA: 9.16

Sept 2023 – Sept 2027

Expected 2027

TECHNICAL SKILLS

- **Languages:** Python, TypeScript, JavaScript, SQL, C
- **Frontend:** React.js, Next.js, Tailwind CSS, Zustand, Recharts
- **Backend:** FastAPI, Node.js, Express.js, REST API Design
- **Databases:** PostgreSQL, SQLite, ChromaDB (Vector DB), Prisma ORM
- **AI / Machine Learning:** RAG Pipelines, LLM Applications, Model Context Protocol (MCP), Gemini API, Vector Databases, Multimodal AI Systems, YOLOv5/YOLOv8, Computer Vision
- **Tools & Platforms:** Git, GitHub, Vercel, Cloudflare, VS Code, System Design, Data Structures & Algorithms

EXPERIENCE

Webmaster – ACM Student Chapter, GNIT

Full Stack Developer

- Designed, developed, and deployed the official ACM Student Chapter website, including an administrative dashboard and speaker management workflow.
- Built frontend and backend modules using Next.js, Express.js, PostgreSQL, and Prisma ORM.
- Owned production deployments, database migrations, and ongoing platform maintenance.

PROJECTS

ContextEngine (OptiEngine) – *Python, ChromaDB, MCP, Next.js, TypeScript*

Diversion 2K26

- Built an MCP-based optimization engine that intercepts developer prompts before code generation and automatically injects organizational coding standards and architectural constraints.
- Developed a Python RAG backend on ChromaDB and a VS Code extension rendering live Mermaid.js architecture diagrams, plus a Next.js dashboard for engineering analytics and compliance monitoring.

BotBlocks – *Next.js, FastAPI, ChromaDB, SQLite, Gemini API*

Hack This Fall Demo Day

- Built a no-code SaaS platform that converts documents and websites into AI-powered, RAG-based chatbot knowledge bases.
- Implemented document ingestion/indexing, multilingual support (including Indian languages), hallucination reduction, and embeddable chatbot widgets with an analytics dashboard.

AgentRX – *Next.js, TypeScript, AI Agents*

Hackolution 2K26 – Runner-Up

- Built an agentic AI system for medical drug repurposing with a real-time multi-agent orchestration dashboard.
- Implemented live agent status monitoring, a streaming telemetry terminal, and a human-in-the-loop approval workflow for agent actions.

Multimodal Report Generation System – *Python, LLMs, AI Pipelines*

Minor Project

- Developed a multimodal AI system that processes heterogeneous inputs and automatically generates structured, summarized reports.

LegHouse – *Next.js, TypeScript, Tailwind CSS*

Live: [leghouse.site](#)

- Built and deployed a full-stack eSports tournament management platform for organizing competitive eFootball events, with live scoreboard management and tournament administration tools.

WasteVision 3D – *Python, YOLOv8, Computer Vision*

MetaMorph 2025

- Built an AI-powered waste monitoring platform using YOLOv8 for drone-imagery waste detection, automated mapping, and 3D volume estimation for campus sustainability.

ACHIEVEMENTS

- **Runner-Up, Hackolution 2K26** – Built AgentRX, an agentic AI system for medical drug repurposing, competing against teams from multiple institutions.
- **Selected Team, Hack This Fall Demo Day** – Shortlisted among ~10–11 teams nationwide; represented West Bengal at Zo House, Bengaluru, demonstrating BotBlocks to mentors and judges.
- **Diversion 2K26 Participant** – Built ContextEngine (OptiEngine), an MCP-powered AI developer tooling platform.
- **MetaMorph 2025 Participant** – Built WasteVision, an AI-assisted waste monitoring solution using computer vision.