

Rajarshi Chakraborty

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

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Full-Stack Software Engineer with a strong backend focus, experienced in building **scalable, production-grade applications** using **TypeScript, Node.js, Express.js, Next.js, PostgreSQL, and MongoDB**. Skilled in **RESTful APIs, system design, database design, and authentication**. Passionate about **Generative and Agentic AI, LLM applications, RAG**, and **vector databases**, with experience developing intelligent software that solves real-world problems.

EDUCATION

- **Techno Main Salt Lake** Kolkata, India
Bachelor of Technology in Computer Science and Engineering, specialization in IoT; GPA: 8.01 July 2023 – Present

SKILLS

- **Primary:** JavaScript, TypeScript, Python Node.js, Express.js, RESTful API Design
- **Secondary:** React, Next.js, SQL, PostgreSQL, MongoDB, Prisma, Drizzle ORM, Mongoose, Pinecone, LangChain
- **Others:** Java, Bash, Git, Docker, Postman, CI/CD Pipelines, Linux, Payment Gateway Integration

EXPERIENCE

- **Techno Main Salt Lake** Kolkata
Undergraduate Researcher 2026 – Present
 - **Forecasting Accuracy:** Built and validated **LSTM, ARIMA, and RNN** models for weather forecasting ontime-series data, improving prediction reliability by **28.75%** over baseline statistical methods through systematic backtesting.
 - **Deployment Pipeline:** Converted research notebooks into a **reusable, deployment-ready pipeline** (Python, NumPy, Pandas, Scikit-learn, PyTorch, Node.js), cutting the time to retrain and redeploy a new model from days to hours.

PROJECTS

- **ReviewRay** – AI-Powered Code Review Engine [[Demo](#)] | [[GitHub](#)]
 - Achieved a **92% developer acceptance rate** on AI-generated suggestions, by building a codebase-aware **Retrieval-Augmented Generation (RAG)** pipeline with **Pinecone** vector search and **OpenRouter** multi-model inference.
 - Processed GitHub pull-request webhook using **Octokit** payloads in under **200ms** with **99.9% background job reliability**, by developing an **event-driven task worker** with **Inngest**.
 - Cut **PostgreSQL** query execution time by **45%** under heavy repository-sync load, by designing targeted index strategies and using **Prisma ORM** with native connection pooling.
- **ExeOS-AI** – AI-Powered Executive Operating System [[Demo](#)] | [[GitHub](#)]
 - Consolidated email, calendar, tasks, and notes into a single dashboard, cutting daily tool-switching across four disconnected apps, by building a **unified AI workspace** with **Next.js 16, React 19 Server Components**, and **TypeScript**.
 - Eliminated an entire class of runtime errors from malformed responses across **integrated LLM providers OpenRouter Tencent Hy-3** by defining strict **Zod schemas** to validate and type every request/response payload.
 - Enabled secure multi-tenant usage for organizations sharing one instance while keeping data-retrieval latency low as record counts grew, by implementing **multi-user auth and org management with Clerk** and tuning **PostgreSQL** queries via **Drizzle ORM**.
- **Zenith CLI** – AI-Powered Developer Workspace & CLI [[Demo](#)] | [[GitHub](#)]
 - Grew adoption to **1,350+ downloads on npm**, by shipping a **Bun**-powered terminal CLI paired with a **Next.js** glassmorphic web dashboard for full-stack local-to-cloud tooling.
 - Enabled secure terminal-to-web sign-in without ever exposing credentials, by implementing the **OAuth 2.0 Device Authorization Flow (RFC 8628)** with **Better Auth** for **GitHub OAuth**.
- **SocketPoll** – Real-Time Polling App [[Demo](#)] | [[GitHub](#)]
 - Eliminated perceived vote-count lag for users voting live, by building a **RESTful Express.js API** paired with **Socket.IO** for bidirectional real-time updates.
 - Prevented state collisions across concurrent poll sessions on a shared server, by introducing **room-based namespace isolation** and in-memory state scoping.
- **SynapseUI** – React UI Component Library [[Demo](#)] | [[GitHub](#)]
 - Cut UI boilerplate for new React/Next.js projects, by publishing an open-source **component library** installable via copy-paste or the **ShadCN-CLI**.
 - Made integration self-serve for consumers, by shipping full **Fumadocs**-powered documentation with live component previews.

HONORS & CODING PLATFORMS

- Solved **650+ problems** on [LeetCode](#) with **10+ contest** participations; strong **data structures and algorithms** proficiency
- Solved **520+ problems** on [GeeksforGeeks](#) and **140+ problems** on [Masterji](#) with a **1700+ coding score**; consistent **competitive programming** performance

VOLUNTEER EXPERIENCE

- **Co-Head & Technical Content Writer – SAMARTH, TMSL** Kolkata, India
2024 – Present
 - **Leadership:** Led the **IGNITE division** and organized **Educathon** and **Safalya** end-to-end, coordinating across teams to deliver both events on schedule.
 - **Content:** Owned technical **content strategy and documentation** for outreach, growing engagement through data-driven iteration on what content performed best.