

Shashank Chakraborty

 [GitHub \(github.com/Shashank0701-byte\)](https://github.com/Shashank0701-byte)  [LinkedIn](#)  [Portfolio](#)
 shashankchakraborty712005@gmail.com  +91 8982410234

Campus Involvement

Backend Developer – Vertex Club

2025 – Present

Dayananda Sagar College of Engineering

- Designed and deployed RESTful APIs powering event registration workflows and admin dashboard; integrated Google OAuth via NextAuth.
- Enforced role-based access control (RBAC) separating student and admin operations across a live, actively used platform.

Projects

Interview Prep AI – Full-Stack AI-Powered Interview Coaching Platform

[Live](#) | [GitHub](#)

- Built full-stack **MERN** platform generating custom interview flashcard decks from pasted job descriptions via **Google Gemini API**.
- Implemented spaced-repetition scheduling engine (SM-2 algorithm) to optimize review timing based on user recall performance.
- Engineered defensive JSON-extraction parsing layer on the backend to reliably recover structured AI output from inconsistent LLM responses, preventing frontend failures.
- Built voice-based practice mode with AI-generated feedback on content, clarity, and delivery, plus a progress dashboard visualizing user growth; **React/Tailwind CSS** frontend on **Express/MongoDB** backend, deployed on **Vercel/Render**.

Shadow Permission Analyzer – Graph-Based AWS IAM Privilege Escalation Detector

[GitHub](#)

- Engineered graph-based AWS IAM security tool modeling identity relationships as nodes/edges in **Neo4j**.
- Implemented **BFS/DFS graph traversal engine** to detect multi-hop privilege escalation chains (e.g. Intern → DevRole → AdminRole → AdministratorAccess).
- Developed risk scoring algorithm weighing privilege level, escalation path count, and chain depth; extracted live IAM data via **boto3** and built FastAPI backend with React graph visualization.
- Wrote **pytest** suite covering 10+ escalation scenarios and risk scoring edge cases with mocked AWS responses.

SystemCraft – Real-Time System Design Simulation Platform

[Live](#) — [GitHub](#)

- Architected backend managing 4-state interview sessions (in progress, evaluating, submitted, evaluated) with 2s debounce auto-save, **AbortController** race condition prevention, and deep canvas + dialogue persistence via **MongoDB**.
- Integrated **Gemini 2.0 Flash** via OpenRouter with schema-validated structured JSON output and **AbortController** timeout handling preventing race conditions on concurrent AI calls.
- Authored **Kubernetes** manifests (Deployment, Service, Ingress, HPA) scaling 3–10 replicas at 70% CPU threshold; built 6-stage **GitHub Actions** pipeline – lint, **Playwright** E2E tests, Docker build with **Trivy** CVE scanning, K8s manifest validation, and automated deploy.

DocuFlow – Intelligent Invoice Ingestion Pipeline

[GitHub](#)

- Developed containerized, event-driven pipeline using **Docker**, **Celery**, **Redis**, and **PostgreSQL**, cutting document processing time by **40%** via asynchronous worker orchestration.
- Structured microservice architecture separating OCR parsing and structured data extraction into independently scalable workers; wrote **pytest** unit tests covering OCR parsing and invoice field extraction.

Open Source Contributions

- Engineered **Redis**-backed API rate limiting middleware merged into production codebase; refactored ML notebooks into modular Python classes with **Flask** API integration for reproducibility.

Skills

Languages	Python, JavaScript, TypeScript
Backend	FastAPI, Flask, Node.js, Express, Next.js
Databases	PostgreSQL, MongoDB, MySQL, Redis, Neo4j
Cloud & DevOps	Docker, Kubernetes, AWS, GitHub Actions, Nginx, Celery, boto3
Tools	Git, Postman, pytest, Playwright
Core CS	Data Structures & Algorithms, Operating Systems, Computer Networks

Certifications

[Cloud Computing](#) – NPTEL, IIT Kharagpur

Jul – Oct 2025

Education

B.Tech – Electronics and Telecommunication

2023 – Expected May 2027

Dayananda Sagar College of Engineering

CGPA: 8.38