

# Shashank Chakraborty

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

## Experience

### Backend Developer – Vertex Club

2025 – Present

*Dayananda Sagar College of Engineering*

- Built and shipped production backend for [vertex.dsce.club](#), serving 200+ student members across event registrations and club operations.
- 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

### 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 to surface highest-risk identities first.
- Extracted live IAM data via **boto3**; 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 5-stage **GitHub Actions** pipeline – lint, Docker build with **Trivy** CVE scanning, K8s manifest validation, and automated deploy.
- Configured **MongoDB**-backed session architecture with auto-save snapshots, preventing data loss on disconnection.

### DocuFlow – Intelligent Invoice Ingestion Pipeline

[GitHub](#)

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

## 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. (2024)

## Skills

<b>Languages</b>	Python, JavaScript, Typescript
<b>Backend</b>	FastAPI, Flask, Node.js, Express, Next.js
<b>Databases</b>	PostgreSQL, MongoDB, MySQL, Redis, Neo4j
<b>Cloud &amp; DevOps</b>	Docker, Kubernetes, AWS, GitHub Actions, Nginx, Celery, boto3
<b>Tools</b>	Git, Postman, pytest
<b>Core CS</b>	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*