SOUBHIK ROY

Dhanbad, Jharkhand

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EDUCATION

Vellore Institute of Technology, Bhopal   **Sep 2023 – May 2027**
B.Tech - Computer Science and Engineering - **CGPA - 8.2**   *Bhopal, Madhya Pradesh*

EXPERIENCE

IIT (ISM) Dhanbad   **May 2025 – June 2025**
Summer Research Intern   *Dhanbad, IN*
- Engineered EV-routing algos, cutting TAT **20%** and raising load **30%** on 500 km+ lanes (20-truck fleet).
- Designed 50+ automated test cases, improving coverage to 95% and reducing regression testing time by 40%.

BookNest   **March 2025 – May 2025**
Full-Stack Developer   *Remote*
- Released book e-commerce, 100+ sales in month 1; scored 90+ Lighthouse perf.
- Architected Next.js + Tailwind + Node stack handling 200 SKUs, 50 tx/day.
- Enabled PAN-India shipping to 28 states; led end-to-end SDLC v1.

TECHNICAL PROJECTS

EV Routing & Charging Optimization — Python, Flask, Genetic Algorithms   **May 2025 – July 2025**
- Developed an EV routing algorithm optimizing delivery routes, charging schedules, and cost across 15+ customer nodes.
- Implemented multiple delivery modes (**fastest**, **min_cost**, **balanced**) using graph-based heuristics.
- Built a **Flask REST API** with real-time route visualization and benchmarking dashboards.
- Achieved **23% route efficiency improvement** through partial charging and multi-EV dispatching strategies.

AI Model Benchmarking Tool — Next.js, PostgreSQL   **Feb 2025 – Apr 2025**
- Evaluated over **25 ML models**, focusing on **F1-score optimization (72%)**, achieving **latency <50ms**, **memory usage <100MB**, and **throughput >1,000 req/s**.
- Automated PDF-based eval reports, reducing manual analysis time by **75%** for **200+ users**.
- Deployed with **Supabase**, ensuring **99%+ uptime** under **150+ concurrent user** load.
- Accelerated batch data ops by **65%** using Pandas vectorization (15min → 5.2min).

StudyWise – AI-Powered Exam Prep Platform — Vite, Flask, OpenAI API   **Nov 2024 – Jan 2025**
- Achieved **90%+ accuracy** in question prediction via **NeuraFocus™**, trained on **15-year multi-exam corpus**.
- Devised **TopicRank™** system, optimizing revision flow by **41%** through AI trend mining.
- Built full-stack platform (React + Express) with drag-drop uploads, dashboard UI, and auto-generated PDF kits.
- Implemented JWT-secured freemium access for **teachers (paid)** and **150+ students (free)**.

PUBLICATIONS

AI Meets Load Balancing — Research Lead   **June 2024 – Oct 2024**
- Applied **Reinforcement Learning** in **K8s/Envoy** stack, achieving **99.9% system uptime** and reducing manual ops by **80%**, saving **200+ dev hours/month**.
- Engineered traffic-aware model selector reducing latency by **30%** (210ms → 147ms) across **50+ microservices**, scaling to **5K+ RPS**.
- Formulated dynamic auto-scale policies, improving infra utilization by **40%** and maintaining **<1% request failure rate**.

ACHIEVEMENTS & CERTIFICATIONS

Hackathon: 3× Runner-up
Problem Solving: GeeksforGeeks – 160 Days of DSA (04/2025)
Frontend Dev: Infosys Springboard (9/2024)
Java Certified – Udemy (6/2024)

TECHNICAL SKILLS

Languages: Java (Spring Boot), Python (Pandas, Flask), TypeScript
Frameworks: Next.js, React.js, Node.js, Express.js
ML/AI: TensorFlow, PyTorch, Scikit-learn (Model Optimization, F1-score 72%)
Databases: PostgreSQL, MongoDB (50+ transactions/day)
DevOps/Cloud: AWS (EC2, S3), Docker, CI/CD Pipelines (Jenkins, GitHub Actions)