

RAHUL ROY

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SUMMARY

B.Tech (Honours) CSE graduate (2026) targeting Software Engineer, Backend, Cloud and DevOps roles. Builds and ships tested, containerised Python and TypeScript services with authentication, background jobs, CI and cloud deployment, backed by AWS and Red Hat certifications.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, SQL
Backend & APIs: FastAPI, Node.js/Express, Next.js, REST APIs, Pydantic, Zod, Celery, Redis, JWT auth and RBAC, microservices concepts
Databases: PostgreSQL, MySQL, SQLite, Prisma ORM, query and database optimization
Cloud & DevOps: AWS (EC2, S3, Lambda, RDS), GCP, Docker, Docker Compose, Kubernetes, GitHub Actions CI, Infrastructure as Code, Linux administration
AI & Testing: LLM integration (Groq, Gemini, Vertex AI), pytest, unittest, Jest; network security and Zero Trust fundamentals

PROJECTS

automation_hub | FastAPI, Celery, Redis, Docker, Kubernetes, Gemini API github.com/Rahul03ll/automation_hub
Built a Python service that crawls pages, extracts PDF text and tables, and summarizes PDFs with the Gemini API, exposed through a CLI and a FastAPI app with async upload endpoints and Celery + Redis background jobs.
Secured the API with hashed API-key (SHA-256) middleware and added retries with exponential backoff and model fallback, the reliability habits production backends need.
Shipped it with Docker Compose, Kubernetes manifests and GitHub Actions CI running 68 pytest tests before every image build.

Mini ERP + CRM Operations Portal | Node.js, Express, TypeScript, PostgreSQL, Prisma, React Vercel, Render, Neon
Delivered a full-stack portal within a 26-hour case-study deadline: Zod-validated REST API, JWT auth with 4 role-based access levels, PDF invoices and CI.
Wrapped order and challan confirmation in a single Prisma transaction that rolls back if any line lacks stock, with audited stock movements, to keep inventory data consistent.

FlashAI | Next.js, Prisma, PostgreSQL, Groq LLaMA-3.3, SM-2 flash-ai-topaz.vercel.app
Deployed a flashcard app that turns an uploaded PDF into 15-20 cards via a streamed NDJSON LLM pipeline, with SM-2 spaced repetition, quizzes and XP streaks.
Fixed an XP lost-update race with Prisma atomic increments, moved SQLite to Neon PostgreSQL for Vercel, and added a multi-model fallback after provider deprecations.

CSV Q&A Agent | Python, Groq, pandas, Streamlit github.com/Rahul03ll/csv-qa-agent
Designed an agent where the LLM sees only schema metadata and writes pandas code that runs in a sandbox (AST import blocks, 10s timeout, audit log); covered by 66 unit tests and a live Streamlit demo.

Market Sentiment and Financial Volatility Analyzer | Python, EGARCH, VADER, Random Forest, Streamlit Major project, Sem 8
Team project combining EGARCH(1,1) volatility with news sentiment on Nifty 50, Sensex and Bank Nifty data (2007-2024); sentiment features raised prediction accuracy from 61.7% to 68.3%.

EXPERIENCE & INTERSHIPS

Full-Stack Development Intern, Pantech e Learning Pvt. Ltd. 16 Jan - 15 Apr 2024
3-month programming and full-stack development internship (MSME/IETE-recognized), the base for my React, Node.js and SQL project work.

Virtual Internships, AICTE / EduSkills 2024 - 2025
Generative AI (Google Cloud, Grade O) and Data Analytics (Google Cloud, Grade O), plus Process Mining (Celonis, Grade A), supporting my LLM-integration and data-handling projects.

CERTIFICATIONS

AWS Academy Cloud Architecting (60 hrs, Jul 2025) and Red Hat System Administration I, RH124 (Jul 2025): cloud design and Linux administration for backend and DevOps work.
Cisco Cybersecurity Essentials and Cyber Threat Management (2026, 140-hour program), plus Google Cloud badges in Vertex AI prompt design and Gemini RAG.

EDUCATION

Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar 2022 - 2026
B.Tech (Honours) Computer Science and Engineering | CGPA 7.89, no backlogs | Coursework: Data Structures, Algorithms, OS, DBMS, Computer Networks, Software Engineering, Machine Learning, AI, Network and Cyber Security