

ROYAL SACHAN

Final Year Undergraduate at IIIT Senapati

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Education

Indian Institute of Information Technology, Manipur

B-Tech in Computer Science and Engineering

Sep 2023 – Aug 2027

Manipur, India

Professional Experience

Backend Developer Intern

Atal Innovation Centre

June 2024 – Jan 2025

Node.js | Express.js | PostgreSQL | JWT | REST API

- Designed and deployed a secure **authentication and authorization system** for Point of Sale (POS) application using Node.js, JSON Web Token (JWT), and bcrypt, cutting unauthorized access attempts by **80%**
- Enhanced API security by integrating **rate limiting, CORS, and Helmet.js middleware**; optimized RESTful endpoints to boost transaction processing speed by **30%**

Technical Projects

FinSight AI: Intelligent Financial News Research Platform (Python | RAG | LangChain | Gemini API) [Github Link](#)

- Built an AI-powered financial news research platform leveraging **Retrieval-Augmented Generation (RAG)** and semantic search to extract actionable insights from diverse media sources, achieving **85%+ query accuracy**.
- Engineered an end-to-end **NLP pipeline** using **LangChain** and **Google Gemini LLM** for document ingestion, chunking, and contextual querying, reducing repeated query response time by **3×** via intelligent caching.
- Designed a **persistent vector store** using **FAISS** and Pickle for offline semantic search over unstructured financial data, enabling efficient and scalable querying without reprocessing source documents.

URL Shortener (ReactJS | NodeJS | ExpressJS | MongoDB)

[Github Link](#)

- Architected a **URL Shortener** service with **Node.js** and **MongoDB**, exposing RESTful APIs for URL encoding and resolution with low-latency redirection.
- Implemented **JWT-based authentication** with **BcryptJS** password hashing alongside analytics tracking to monitor usage metrics and user engagement.

Interactive Video Learning Platform (React.js | Node.js | MongoDB | JWT | OAuth 2.0)

[Github Link](#)

- Built a production-ready **MERN stack** platform with enterprise-grade authentication via **OAuth 2.0** (Google/GitHub), JWT sessions, SendGrid email verification, and bcrypt password hashing, designed to scale for **1,000+ concurrent users**
- Engineered a scalable **Express.js** backend with MVC architecture, MongoDB TTL-indexed verification codes, RESTful API validation, custom auth middleware, and centralized error logging

Coding Profiles

- LeetCode:** [lazy-royal](#)
- Codechef:** [royalsachan](#)
- Codeforces:** [royalsachan](#)

Technical Skills

Programming Languages: Java, Python, SQL, JavaScript

Technologies and Framework: React.js, Node.js, Express.js, REST APIs, JWT, Tailwind CSS

Databases: PostgreSQL, MongoDB, Vector

DevOps and Tools: AWS, Docker, Git, GitHub, Pandas, NumPy, LangChain, Postman

Coursework: DSA, OOP, DBMS, Operating Systems, Computer Networks, Machine Learning, NLP, Data Science

Achievements & Certifications

- Qualified **GATE CS 2026** with AIR **14800** out of **200,000+** candidates.
- Ranked **5204** globally in **Meta Hacker Cup 2025**, clearing Round 1 among hundreds of thousands of competitors worldwide.
- Selected among **top 3 proposals** from my college at **5G Innovation Hackathon 2025** by **DoT, Government of India**.
- Secured **AIR-2** in **Engineer's Ring of Honour (EROH) 2025** by **Naukri.com** among **IIT, IIIT, and NIT** participants; awarded scholarship and featured in *Times of India*.
- Solved **500+ DSA problems** on LeetCode, Codeforce, CodeChef, and GeeksforGeeks, demonstrating strong algorithmic problem-solving skills.