

ANKUR KUMAR

+91 8789179032

ankur7250084800@gmail.com

LinkedIn

GitHub

Education

National Institute of Technology, Patna

B.Tech in Electronics and Communication Engineering

2020 – 2024

8.95/10 CGPA

Work Experience

Texas Instruments (ITS)

Jan 2024 – present

Software Development Engineer

On site

- Developed and led the frontend of **AI Assistant** (**Next.js, TypeScript, NextAuth**) with modular components for agent chat, persona management, and admin dashboards. Built an **MCP** registry enabling teams to register servers and expose tools that the AI Assistant can dynamically use based on user requests. Integrated **AD/LDAP + TI SSO** for **5k+ users** and **13k+ logins** in the first week, optimizing UX at scale.
- Developed the **chat route** in **Backend (FastAPI)** handling **encrypted JWT validation**, conversation trimming, guardrails, citations from **Vectara**, **LLM calls via LiteLLM**, **SSE streaming**, system prompt caching, and enhanced response re-ranking. Enabled generation of all code/markdown types without errors.
- Engineered a **document ingestion and RAG pipeline** microservice for user-uploaded files. Designed end-to-end flow: files uploaded to **S3** trigger asynchronous processing notifications, converted into **LangChain Document** objects, enriched with metadata, chunked with consistent metadata, embedded into high-dimensional vectors via an embedding model, and stored in **Vectara (on-prem vector DB)** for fast, scalable AI querying.
- Enhanced **WFS Orchestrator** and **Ask TI Agents (ADK)** to support multiple models per agent, A2A calls, after-model callbacks, and custom response transformations for cloud models (**AWS/GCP**). Implemented feedback loops (Re Ranking), **Webex bot integration**, code/markdown highlighting, and interactive **UI**. Deployed on **Kubernetes** with **CI/CD (Jenkins, Docker, Argo CD)** ensuring zero downtime releases.
- Engineered a secure **full-stack architecture** using **Spring Boot + Next.js 13**, integrating **SSO (OAuth2)**, **JWT/session authentication**, **RBAC**, and custom security filters. Resolved **500+ vulnerabilities**, enhancing platform resilience.
- Developed **Start Rate Default**, a high-performance **full-stack application** (**Next.js, Tailwind CSS, Material UI, NextAuth**) with debounced search, lazy loading, caching, pagination, and automated **300+ offer generations**. Containerized with **Docker**, integrated **CI/CD (Jenkins)**, and deployed via **Kubernetes + Argo CD**.
- Developed **AMPT finance workflow** using **Spring Boot, React, MyBatis, PL/SQL, Tomcat, Docker**, automating processes from PR to WEBCAP, consolidating fragmented workflows, and increasing transparency.
- Built **RPA bots** and web-based applications including **TDS automation** and **HelpBot ingestion pipelines**. Migrated legacy **JavaScript-PL/SQL** apps to scalable **Spring Boot-React** stacks, improved code quality and performance, and streamlined deployments from **CentOS** to **Kubernetes**. Mentored 5+ interns through full **SDLC**.

Personal Projects

Real-time Cryptocurrency Tracker

[Source Code](#)

- Built a real-time cryptocurrency tracker with live pricing, interactive charts, and news updates using **Next.js**. Integrated CoinGecko/CoinMarketCap APIs for efficient real-time data fetching and visualization.
- Tech:** Next.js, Three.js, Axios, CoinMarketCap API, Chart.js, Tailwind CSS

Technical Skills

Languages: Python, Java, C++, JavaScript (ES6+), TypeScript

Backend: Spring Boot, Spring MVC, Next.js, FastAPI, Node.js

Frontend: React.js, Next.js, Tailwind CSS, HTML5, CSS3, Three.js

Cloud & Databases: Oracle DB, MySQL, PostgreSQL, YugabyteDB, PL/SQL

Web & DevOps: Docker, Kubernetes, Argo CD, Jenkins, Tomcat, SSE, CI/CD pipelines

Developer Tools: Git, GitHub, Bitbucket, Postman, Insomnia, Jira, Confluence, VS Code, Linux

AI / LLM Tools: LiteLLM, LangChain, RAG Pipelines, ADK, VectorDB, OpenAI API

Algorithmic Competitions / Achievements

- Solved **4000+** DSA problems across different coding platforms, building problem-solving skills.
- ACM ICPC Regionalist 2024**
- Rated **Guardian** on Leetcode with Rating 2324 (Top 500 in India).
- Rated **5 Stars** on Codechef with Rating 2013 (Top 800 in India).
- Secured **Rank 92/16000+** participants in the Leetcode Biweekly 117 Contest
- Ranked in **top 1 percentile** in 30+ coding contests on Leetcode.
- Rated **Expert** on Codeforces with Rating 1695.