Nikhil Kumar

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Technical Skills

Languages: Java, Python, SQL, JavaScript (Next.js)
Core Concepts: Backend-for-Frontend (BFF), System Design, Multithreading, REST APIs, Geo-fencing
Databases: MongoDB (Aggregation Framework), MySQL, Vector Databases (Qdrant)
Tools & Cloud: Docker, Git, Linux, Postman, AWS S3, Azure AI
Libraries: LangChain, Selenium, Scrapy, OpenAI API, Sharp (Image Processing)

Experience

KloudGin Inc. Hyderabad, India
Software Engineer (Trainee/Intern) *Aug 2024 – Present*

- **Strategic R&D:** Solely architected the **311 Portal** Proof-of-Concept (PoC). This prototype successfully validated the Next.js/BFF architecture for the company and is currently deployed as the demo asset for enterprise clients.
- **Performance Optimization:** Designed a multithreaded execution strategy for data ingestion, increasing system throughput by **70%** and resolving critical race conditions in the legacy Java backend.
- **API Architecture:** Implemented LRU caching to eliminate **300,000+** redundant API requests per cycle, reducing batch execution time from hours to minutes.
- **Cloud-Native Development:** Engineered scalable SaaS modules using **Java and MongoDB**, optimizing complex aggregation queries to handle high-volume datasets (200K+ records).

PwC Acceleration Centers Remote
Cloud & Digital Trainee *Feb 2024 – Jul 2024*

- **Digital Transformation Training:** Completed an intensive technical curriculum focused on **Cloud Architecture** and **Enterprise Security**, gaining proficiency in modern digital workflows.
- **Industry Mentorship:** Engaged with global industry experts to solve simulated enterprise challenges, enhancing technical problem-solving abilities and adherence to global quality standards.

Projects

311 Service Portal | *Next.js, AWS (S3, SNS, SES), OpenAI, Leaflet*

- **Full-Stack Architecture:** Developed a Next.js application using a **Backend-for-Frontend (BFF)** pattern to proxy requests, securely managing Auth tokens and bypassing CORS restrictions for the legacy ERP.
- **Secure Cloud Storage:** Architected an **AWS S3** image pipeline using **Presigned URLs** for secure, temporary access, integrating server-side image compression via the **Sharp** library.
- **Automated Notification Pipeline:** Integrated **Amazon SNS** and **SES** to architect a multi-channel alert system, triggering real-time SMS and Email updates with dynamic tracking links upon case creation.
- **Geospatial Engine:** Implemented **Turf.js** for client-side geofencing to validate service requests against municipal boundaries, integrated with Leaflet and MapQuest for precise reverse geocoding.
- **AI Integration:** Engineered a chatbot using **OpenAI API** that parses natural language complaints into structured JSON payloads for automated case creation.

JalDristi - Multi-Modal AI Analytics | *Python, Azure CV, OpenAI, Selenium*

- **Automated Social Listening:** Engineered a Selenium-based pipeline to scrape and aggregate real-time crisis data from social media platforms, filtering for high-priority keywords (e.g., Flood, Scarcity).
- **Multi-Modal Analysis:** Integrated **Azure Computer Vision** to extract dense captions from user-uploaded images and fed them into **OpenAI** to generate context-aware crisis summaries.
- **Risk Scoring Algorithm:** Developed a Pandas-based weighted scoring system that classifies incidents based on keyword severity and visual evidence, prioritizing actionable alerts.

PDFSol - RAG Document Search | *Python, LangChain, Qdrant, Streamlit*

- Built an intelligent Q&A system using **Retrieval-Augmented Generation (RAG)** to extract insights from complex PDFs.
- Implemented **Vector Embeddings** using Qdrant for high-accuracy semantic search and context retrieval.
- Optimized chunking strategies within LangChain to improve answer relevance and reduce token usage.

Education

Siksha 'O' Anusandhan University Bhubaneswar, India
B.Tech in Computer Science Engineering (CGPA: 8.5) *2021 – 2025*

Licenses & certifications

Google Cybersecurity Specialization | *Google*

- Completed Google Cybersecurity Professional Certificate (8-course specialization) with average score of 94%+, including hands-on training in Linux, SQL, Threat Detection, Incident Response, Network Security, Risk Management, and Python-based automation.

Microsoft Certified: AI Fundamentals | *Microsoft*

- Learned core AI and ML concepts, responsible AI, and Azure-based implementation strategies.

Microsoft Certified: Security, Compliance, and Identity Fundamentals | *Microsoft*

- Understood SCI principles and identity protection using Microsoft 365 and Azure environments.