

KARAN MISHRA

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TECHNICAL SKILLS

Languages: Python, JavaScript

Frameworks/Libraries: React.js, Node.js, FastAPI, LangChain, LangGraph, Streamlit, Tailwind CSS

Databases: MySQL, MongoDB, OpenSearch, Vector Databases

LLMs/AI: OpenAI GPT-4, Google Gemini, Groq, Llama Models, Ollama, DeepSeek, Pydantic

Tools/Technologies: Docker, Kubernetes, GitOps, CI/CD, Git, Github, Power BI, SharePoint

EXPERIENCE

Kellogg Brown & Root

July 2024 – Sept 2024

Data Analyst Intern

Gurugram, India

- Created Complaint Dashboard using Power BI and Excel, reducing complaint resolution time by 20% through automated data handling and actionable insights
- Managed, analyzed, and visualized data to support critical business decisions
- Redesigned chat file format and implemented backward compatibility for search functionality

PROJECTS

SearchMind AI | *Next.js, FastAPI, LangGraph, Gemini, Tavily API, TypeScript, Python*

- Designed and implemented a LangGraph-powered conversational AI system with dynamic tool routing, enabling intelligent web search integration and real-time response streaming via FastAPI and Server-Sent Events
- Built scalable backend architecture using FastAPI with CORS middleware, memory-based checkpointing for session persistence, and asynchronous event streaming, supporting concurrent user sessions with conversation context retention
- Developed responsive React frontend with TypeScript, featuring real-time search stage visualization, message streaming with loading states, and clean UI components optimized for desktop and mobile experiences

QuizGenius | *Python, LangChain, Groq LLM, Streamlit, Pydantic, Docker, Kubernetes*

- Engineered an enterprise-grade adaptive quiz generation system leveraging Groq's Llama-3.1-8B model with LangChain framework, implementing dynamic prompt engineering and structured output parsing via Pydantic schemas
- Architected robust LLM pipeline with retry mechanisms, custom exception handling, and structured logging, achieving 95% successful question generation rate across diverse academic topics with configurable difficulty levels
- Developed scalable containerized deployment using Docker and Kubernetes with GitOps CI/CD pipeline, supporting concurrent user sessions with session state management and cloud-native architecture for educational institutions

DocuMind | *Python, OpenSearch, Gemini, Ollama, Docker, Gradio, LangChain*

- Architected a production-ready multimodal RAG system processing both text and image data from technical PDFs, implementing hybrid search (keyword + semantic + cosine similarity) achieving 40% better retrieval accuracy
- Engineered advanced document processing pipeline with Unstructured.io for PDF parsing, automatic image captioning via Gemini API, and semantic chunking, reducing manual preprocessing time by 85%
- Built scalable OpenSearch vector database with KNN indexing and 768-dimensional embeddings, supporting real-time semantic search with sub-200ms query response times and containerized deployment

EDUCATION

Maharaja Surajmal Institute of Technology

New Delhi, India

Bachelor of Technology in Information Technology, CGPA: 8.279

2022 - 2026

Rajkiya Sarvodaya Bal Vidyalaya

CBSE Board

Class XII: 83%, Class X: 79%

New Delhi, India

CERTIFICATIONS & ACHIEVEMENTS

Microsoft Power BI Desktop – Completed training from KBR, focused on Power BI application and its usage for data analytics

Founder of Hacker's Hideout – Built and nurtured a tech-focused community for collaboration and knowledge sharing
Certificate completed – LLMOps & AIOps Bootcamp (Krish Naik)