Ayush Abad

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EDUCATION

Indian Institute of Technology Jodhpur 2020 – 2024
Bachelor of Technology

WORK EXPERIENCE

Ingenious e-Brain Aug 2024 – Present
Software Development Engineer - Full Stack *Gurugram, India*
- Built and deployed **5+ AI/RAG applications** using FastAPI microservices, Elasticsearch, and Databricks for **10M+ biomedical datasets**.
- Developed scalable **LLM workflows** with OpenAI, Anthropic, DeepSeek, and Vertex AI for pharma/biotech automation.
- Created high-volume ETL pipelines for PubMed and clinical-trial datasets; automated knowledge graph ingestion.
- Deployed full-stack and inference workloads on **Azure VMs, AWS EC2, S3**, optimizing performance + cost.
- Delivered rapid MVPs enabling acquisition of **3+ enterprise clients**.

Willings, Inc Jun 2023 – Nov 2023
Software Engineering Intern *Remote*
- Built matchmaking app backend (1K+ DAUs) integrating secure profiles, Firebase storage, and recommendation flows.
- Integrated Google Maps APIs for geolocation, distance computation, and spatial search.
- Developed React + Node.js admin dashboard, reducing manual operations by **40%**.

PROJECTS

TCP-to-HTTP Proxy Server | *Go, net, Concurrency* 2024 – Present
- Built a custom **TCP → HTTP server** with raw socket handling, manual HTTP/1.1 parsing, and routing logic.
- Implemented concurrency using **goroutines + channels** with optimized connection pooling.
- Improved performance and stability using Go profiling + sync primitives; deep understanding of TCP/IP internals.

Journal Writing Platform | *Next.js, NextAuth, FastAPI, PostgreSQL* 2023 – Present
- Developed full-stack journaling app with **Next.js + NextUI**, OAuth login via **NextAuth**, and rich text editing.
- Built FastAPI backend with async REST APIs, Pydantic validation, and SQLAlchemy + PostgreSQL storage.
- Deployed frontend on Vercel and backend via Docker with secure CRUD + optimized API communication.

Autonomous Research RAG Engine | *LangGraph, LangChain, FastAPI, Qdrant, MLflow, AWS* 2024
- Engineered a **self-improving RAG system** that autonomously ingests scientific PDFs, generates hypotheses, evaluates answers, and retrains its own retrieval pipeline using LangGraph nodes.
- Implemented an **agentic workflow engine** with planner, retriever, verifier, and critic LLM agents collaborating to refine outputs and improve accuracy over time.
- Built full MLOps pipeline with **MLflow**, automated embedding updates, retrieval evaluation, CI/CD, and deployment on AWS with FastAPI + Docker.

TECHNICAL SKILLS

Languages: C/C++, Go, Python, JavaScript, TypeScript, SQL
Frameworks: React, Next.js, Node.js, Express, Flask, FastAPI, Django
Databases: PostgreSQL, MySQL, MongoDB
Cloud/DevOps: Docker, Kubernetes, AWS (EC2, S3, Lambda), Azure, Git, CI/CD, Elasticsearch
AI/Tools: LangChain, LangGraph, REST/gRPC, WebSockets, Bash, Linux, Emacs