

NADAMALURU SAMPATH KUMAR

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SUMMARY

AI/ML undergraduate specializing in production-ready Generative AI applications — Retrieval-Augmented Generation (RAG), LLM orchestration, and agentic systems using Python, LangChain, LangGraph, FastAPI, and vector databases. Experienced building end-to-end pipelines from data ingestion and embeddings to deployment, with a strong foundation in DSA, machine learning, and backend systems engineering.

TECHNICAL SKILLS

AI / ML: LangChain, LangGraph, RAG Pipelines, Vector Databases, Embeddings, Prompt Engineering, Machine Learning

Languages: Python, JavaScript, SQL

Frameworks: FastAPI, React, Streamlit, Node.js/Express

Databases: MongoDB, MySQL, Vector DBs (FAISS/Chroma)

Tools & Cloud: Git, GitHub, AWS, Vercel, Postman, Power BI

Core CS: Data Structures & Algorithms, Computer Networks, Operating Systems

PROFESSIONAL EXPERIENCE

CDAC — Software Engineering Intern

Internship

- Designed and implemented efficient telecom traffic data storage using Berkeley DB, optimizing query performance for large-scale network topology and traffic matrices.
- Built structured retrieval mechanisms improving data access efficiency for enterprise-scale datasets.

TEDx VVIT — Event Operations Coordinator

- Coordinated with speakers and managed on-ground logistics, ensuring smooth execution of the event and strong audience engagement.
- Worked within a cross-functional team to manage audience engagement and ensure smooth event execution.

PROJECTS

PDFChatBot — RAG-Powered Knowledge Assistant

[\(LINK\)](#)

- Built a Retrieval-Augmented Generation chatbot using LangChain and vector databases to answer questions grounded in uploaded documents.
- Indexed multi-document collections with semantic chunking and embeddings, enabling accurate context-aware retrieval and reduced hallucinations.

NEUROASSIST

[\(production rag\)](#) - Currently Working

- Built a production-grade, enterprise-level RAG system using LangGraph, enabling agentic workflows with multi-step reasoning, conversation memory, and history-aware query planning.
- Implemented NeMo Guardrails to detect and block off-topic queries, prompt injection, and jailbreak attempts, ensuring secure AI interactions.
- Integrated **Portkey** LLM Gateway with automatic fallback across multiple Groq API keys, improving reliability and high availability of LLM inference.
- Developed a high-performance retrieval pipeline using Qdrant Cloud, Gemini Embeddings (3072-dim), and FlashRank semantic re-ranking to distinguish relevant "True Data" from noisy documents and improve retrieval accuracy.

Rukus — Real-Time Chat Platform

[\(Link\)](#)

- Developed a scalable full-stack messaging platform using React, Node.js/Express, and MongoDB with real-time communication.
- Implemented disappearing messages, reducing storage consumption by approximately 40%, plus secure authentication.

EDUCATION

B.Tech, Computer Science (AI & ML) — VVIT, Nambur

2023 – 2027

- CGPA: 8.63 / 10

Higher Secondary (Class XII) — Narayana College

2021 – 2023

- Percentage: 94.2%

CERTIFICATIONS

- Generative AI — Google Cloud
- DSA in Python & Introduction to LLM — NPTEL
- Data Analytics and Visualization Job Simulation — Accenture
- AWS Academy Graduate — Cloud Foundations