CHAPALA NAVEEN KUMAR

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GitHub — Portfolio — LinkedIn

PROFESSIONAL SUMMARY

AI/ML Engineer with hands-on experience in building end-to-end Machine Learning and Generative AI applications. Skilled in developing LLM-based systems, Retrieval-Augmented Generation (RAG) pipelines, and agentic AI workflows. Proficient in Python, TensorFlow, Scikit-learn, FastAPI, and Flask for model development and deployment. Experienced in integrating vector databases, APIs, and cloud platforms to deliver production-ready AI solutions.

EDUCATION

SIMATS Engineering College, Chennai Jul 2024 – Jul 2028
B.Tech in Computer Science (AI & ML) CGPA: 8.8/10

Relevant Coursework: Machine Learning (Supervised & Unsupervised Learning, Model Evaluation), Deep Learning (Neural Networks), Natural Language Processing (Text Processing, Embeddings), Generative AI & Large Language Models, Data Structures and Algorithms, Database Management Systems (SQL), Probability and Statistics for Machine Learning

SKILLS

Programming Languages: Python, C
Machine Learning & AI: Machine Learning, Deep Learning, NLP, Generative AI, RAG, LLM Agents, Transformers
Frameworks & Libraries: TensorFlow, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, NLTK
LLM & Agent Frameworks: LangChain, LangGraph, LangSmith
Backend & APIs: FastAPI, Flask, REST APIs, Streamlit
Cloud & MLOps: Azure, Docker, GitHub Actions, MLflow, BentoML, Gunicorn
Databases: SQL, SQLite
Vector Databases: Pinecone, FAISS,chromadb
Tools: Git, Postman, VS Code, Linux, Hugging Face

PROJECTS

Diabetes Risk Prediction System — Live Web App
Tech Stack: Python, Scikit-learn, XGBoost, Flask, Azure, Groq LLM, Hugging Face

- Developed a machine learning–based diabetes risk prediction system achieving 87% accuracy using Scikit-learn.
- Built a Flask-based web application with probability scoring dashboards for clinical insights.
- Integrated Groq LLM to generate structured medical interpretations.
- Deployed the application on cloud infrastructure for real-time usage.

AI Stock Price Forecasting Platform — Live Web App
Tech Stack: LSTM, TensorFlow, Flask, Finnhub API, Twelve Data API

- Implemented an LSTM-based stock price forecasting model for 1–30 days predictions achieving 94% accuracy.
- Engineered technical indicators including RSI, MACD, EMA, and SMA for enhanced predictions.
- Designed real-time visualizations with auto-refresh trading signals.
- Deployed the system as a Flask-based web application.

Perplexity Clone — Multi-Mode AI Search Assistant (Live Web App)
Tech Stack: LangChain, LangGraph, FastAPI, Groq LLMs, Hugging Face Embeddings, Streamlit

- Developed a multi-mode AI search assistant supporting web search, RAG-based retrieval, agentic reasoning, and deep research workflows.
- Implemented retrieval pipelines using Hugging Face embeddings and vector search.
- Added contextual grounding, citations, and persistent chat memory.
- Built a responsive Streamlit interface with optimized user workflows.

HONORS & CERTIFICATIONS

- Oracle OCI — Generative AI Professional (2025)
- Best Student Award — Wisdom Path Foundation (2025)
- Participant — India's Biggest GenAI Buildathon (NxtWave)
- Completed Machine Learning, Deep Learning, and NLP Bootcamp (Udemy)