FRANCIS RAMANADHULA

AI Engineer

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Portfolio | GitHub | LinkedIn

PROFILE SUMMARY

Results-driven Software Engineer transitioning into AI Engineering, building and deploying production-ready intelligent systems. Combines enterprise development experience with expertise in **LangChain**, **LangGraph**, **Model Context Protocol**, multi-agent architectures, **RAG pipelines**, vector databases, and AWS. Delivers end-to-end AI applications-from agent design to containerized cloud deployment with **CI/CD automation**-focused on scalable, real-world LLM solutions.

SKILLS

- **AI/LLMs:** LangChain | LangGraph | CrewAI | OpenAI API | Groq | Google Gemini | MCP Protocol | AWS Bedrock AgentCore | Sentence Transformers | RAG
- **Backend:** Python | FastAPI | Pydantic | REST API | WebSockets | C# | .NET WinForms | ADO.NET
- **Cloud / DevOps:** AWS EC2 | ECS Fargate | App Runner | Bedrock AgentCore | Docker | GitHub Actions | ECR | S3 | Secrets Manager | CloudWatch
- **Frontend:** HTML | CSS | JavaScript | Responsive Design
- **Tools & DBs:** Git | VS Code | Postman | Chroma DB | MySQL | SQL Server | FAISS

WORK EXPERIENCE

Capgemini - *Associate I*   **February 2022 - Present**

Bengaluru, Karnataka, India

- Built a custom Content Management System using C#, VB, and .NET to automate the parsing and processing of unstructured data in PowerPoint presentations.
- Developed a keyword-driven extraction engine to dynamically compile relevant slide content into new presentations, reducing manual effort.
- Integrated SQL Server to optimize data retrieval and keyword tracking, reducing manual slide processing time by **60%**.
- Managed the full Software Development Lifecycle, driving features from requirement gathering and system design through to coding, deployment, and performance optimization.

PROJECTS

OmniChat | Multi-Modal AI Chatbot

- Built a unified AI interface supporting vision, TTS, image generation, and web search across **6 LLM providers**; deployed on AWS App Runner with CI/CD.
  [FastAPI / Groq / Gemini / Stable Diffusion / OpenAI]

RAG ReAct Agent | Document Search System

- Developed a semantic PDF search system using **ReAct agent orchestration** with persistent FAISS vector store and Tavily fallback; deployed on ECS Fargate with ALB.
  [LangChain / LangGraph / FAISS / OpenAI]

AI Code Review Crew | Multi-Agent Analyzer

- Designed a **5-agent system** to analyze Python code for bugs, OWASP Top 10 vulnerabilities, performance issues, and documentation quality with severity scoring.
  [CrewAI / FastAPI / OpenAI]

Study Tools MCP | AI Study Assistant

- Built a Claude Desktop-integrated study assistant via **MCP** to generate quizzes, flashcards, and explanations from PDFs; deployed on EC2.
  [MCP / FastAPI / OpenAI / AWS EC2 / S3]

Lauki FAQ Agent | Conversational Support AI

- Built a customer support agent with persistent conversation memory via **AWS Bedrock AgentCore**, semantic FAQ search using FAISS + sentence-transformers, and fully automated CI/CD.
  [LangGraph / FAISS / AWS Bedrock AgentCore / Docker]

EDUCATION

KSRM College of Engineering   06/2016 - 07/2020

B.Tech in Computer Science and Engineering

Kadapa, Andhra Pradesh, India

CERTIFICATES

- **Gen AI & Data Science Bootcamp**, Code Basics