Thilak R

Bengaluru | yadavthilak30@gmail.com | 8123143248 | linkedin/Thilak R | github.com/Thilak30

Experience

Software Engineer Trainee, IQVIA – Bengaluru July 2025 – Present

- Engineered a **Dynamic RAG Pipeline** using **LangChain** and **LangGraph**, creating an agentic workflow that autonomously falls back to web search tools (Tavily, Brave) when Vector DB context is insufficient, dynamically enriching the knowledge base.
- Developed a **Reactive Agent** for the existing application, implementing **Human-in-the-Loop (HITL)** mechanisms and advanced prompt engineering to handle complex customer interactions and ensure high-accuracy responses.
- Optimized agent performance using **LangSmith Studio** to visualize node/edge execution flows and utilized **RAGAS** scoring to evaluate and improve retrieval quality and generation metrics.
- Built interactive chatbots using **Streamlit** and **LCEL (LangChain Expression Language)**, integrating vector databases for efficient semantic search and retrieval.

AI/ML Engineer Intern, SISA Information Security – Bengaluru Oct 2024 – Jun 2025

- Engineered a sensitive data classification ML model, achieving a 25% increase in accuracy by optimizing feature selection and model parameters.
- Architected a high-performance OCR model pipeline to extract text from scanned files, attaining 95% accuracy and reducing runtime by 30%.
- Streamlined team workflows by integrating Agile methodologies (Sprint Planning, Retrospectives), resulting in a 20% improvement in delivery efficiency.

Projects

PPE Detection using YOLOv8 | Python, YOLOv8, OpenCV Link

- Designed a computer vision pipeline using YOLOv8 and OpenCV by training two separate models—one for person detection and another for PPE detection. Implemented a sequential approach where detected persons were cropped and passed to the PPE model, followed by annotation on the original image. This method improved detection accuracy by 15% compared to the existing solution, based on offline testing and validation.

Chennai Weather Forecast using Time Series | Python, Statsmodels (SARIMAX) Link

- Conducted time series analysis on Chennai weather forecast data by performing preprocessing, exploratory data analysis (EDA), and applying SARIMAX and LSTM models. Achieved a forecasting accuracy improvement of 18% over baseline models(Naive, Moving Averages), enabling more reliable weather trend predictions.

Education

Dayananda Sagar University (Bengaluru), B.Tech. in Computer Science and Engineering (Data Science) Dec 2021 – June 2025

- CGPA: 9.06/10.00
- **Relevant Coursework:** Machine Learning, Data Analytics, SQL, Python Programming, Data Science

Jawahar Navodaya Vidyalaya, Bengaluru Urban – Class XII (CBSE) Jun 2020 – Mar 2021

- Percentage: 95.4%

Technologies

Languages: Python, SQL, C
GenAI & LLMs: LangChain, LangGraph, RAG, Agents, OpenAI/LLMs, Vector Databases, LangSmith, Streamlit
Techstack Frameworks: TensorFlow, Scikit-learn, TesseractOCR, PaddleOCR
Tools and Platforms: Git/GitHub, GitLab CI/CD, Linux, VS Code, Google Colab, Groq, Ollama
Cloud/DevOps: AWS (S3, EC2, Lambda), Docker, Kubernetes, Azure DevOps