

Gayathri G

Machine Learning Engineer -2

[Mail-ID](#) - [LinkedIn](#) - [Github](#) - [Phone](#)

PROFESSIONAL SUMMARY

Generative AI Engineer with 2+ years of experience in AI agent development, workflow automation, and intelligent document processing. Skilled in Azure, AWS, LLM integration, agent orchestration, and memory-augmented reasoning to deliver scalable, secure, and cost-efficient AI solutions. Proven ability to reduce delivery time and operational costs for B2B and B2C applications.

WORK EXPERIENCE

ML Engineer - 2

Apr 2025 - Present

Optisol Business Solutions - [Link](#)

- Led a team of AI engineers to develop an AI ecosystem, including Python packages for agent development, data source integration via MCP, and advanced document parsing.
- Implemented multiple OCR methods (including handwritten and digital formats) achieving 93% extraction accuracy.
- Designed and maintained chunking strategies, vector database management, web research capabilities, and retrieval from structured/unstructured data.
- Built and deployed B2B and B2C AI agents, reducing delivery time by 60% through workflow automation and optimization.
- Developed monitoring and traceability platforms for AI agents to ensure reliability and performance tracking.
- Optimized real-time API latency for question-answering systems, improving response times for production use cases.
- Built inbound and outbound call automation solutions for various B2C companies.
- Collaborated directly with the CEO to deliver the company's first AI-driven product in a service-based environment.
- Deployed scalable and secure AI solutions across AWS and Azure, ensuring cost efficiency and high availability.

Technologies: OCR, Langchain, LLM, Azure, AWS, Prompt Engineering, AI Agents

ML Engineer - 1

Jun 2024 - Apr 2025

Optisol Business Solutions

- Developed a Request for Proposal (RFP) generation system leveraging Large Language Models (LLMs) for intelligent content creation.
- Achieved 60% reduction in proposal preparation time by analyzing factors to emphasize or minimize, enabling vendors to adapt proposals with minimal edits based on AI recommendations.
- Increased win rates by providing AI-driven suggestions tailored to client needs and competitive positioning.
- Collaborated closely with the CTO to align system capabilities with organizational goals and strategic direction.

Technologies: Multimodal OCR, serverless, Azure, Pinecone, Prompt Manager, Langchain, Langgraph

Generative AI/ ML Engineer Intern

Dec 2023 - Jun 2024

Optisol Business Solutions

- Spearheaded the design and deployment of multiple LLM-powered applications, including document/CSV/Excel question answering, invoice summarization, blog generation, image/video description and tagging, and data extraction systems.
- Improved document parsing accuracy in multi-document question answering through hybrid retriever methods and local LLM models.

Technologies: Langchain, Whisper, OpenAI, Langchain, ChromDB, SQL agent, Multimodal LLM

Computer Vision Engineer

July 2022 - Dec 2022

Cognitica AI (Optisol Business Solutions)

- Implemented Forklift Automation utilizing Computer Vision, an innovative AI system was developed to enhance warehouse safety by mitigating accidents involving forklifts.
- The system integrates four cameras mounted on the forklifts, employing Computer Vision to detect potential collisions with people and other vehicles. In case of a threat, the system triggers an alarm, providing real-time alerts to forklift operators.
- The hardware backbone for this solution is the Intel NUC, while the software toolkit leverages the capabilities of OpenVino.

Technologies: Intel NUC, OpenVino, Yolo model, Finetuning, Data Annotions

PROJECT PORTFOLIO

Shoe Shopping – Image to Image Retrieval ([Link](#)) :

Technology: OpenAI CLIP, Python, Streamlit

- Developed a streamlit application which ensures fast and responsive matching between user-uploaded shoe images and the store's collections.
- Integrated CLIP (Contrastive Language image pre-training) embeddings into streamlit app, leveraging its capabilities to understand images for accurate image retrieval.

Voice Clone Assistant ([Link](#)):

Technology: Python, Voice Cloning (Deep learning), Deep fake voice, speech Recognition

- Implemented voice cloning technology using the SV2TTS pre-trained model to customize the voice of the assistant.
- Integrated deep fake voice generation for a tailored and natural user interaction experience.
- Developed and fine-tuned speech recognition algorithms to accurately interpret user commands and interact.

Rust Detection using OpenCV ([Link](#)):

Technology: Python, Image processing

- Implemented an OpenCV-based solution for capturing images from a camera, specifically focusing on rusted iron objects.
- Leveraged image processing techniques to detect and quantify rust within the captured images, providing valuable insights into the extent of rust through pixel point analysis.

EDUCATIONAL QUALIFICATION

M.Sc Data Science

Coimbatore Institute of Technology

CGPA - 9.18

2019-2024

PUBLICATIONS

- Cryptocurrency survey analysis, IRJMETS Journal · May 3, 2021 ([Link](#))
 - Cotton Price Prediction, IRJMETS Journal, Apr 21, 2021 ([Link](#))
-

SKILLS

- Languages: Python, C++
 - Database: MySQL, SQL, PostgreSQL, Cosmos DB, DynamoDB, MongoDB
 - Data visualization: Power BI, Tableau
 - API Framework: Flask, Fast API
 - Cloud Services: Azure, AWS
 - Libraries: TensorFlow, keras
 - Deep Learning: CNN, RNN, LSTM, GPT3, BERT
 - LLM Framework : LangChain ,Llama Index
 - Context Engineering : Memory, Caching, Prompt Engineering
 - Machine Learning: ML algorithms, Data Analysis, NER
 - Agentic Frameworks: Langgraph, CrewAI, Google ADK, OpenAI Agents SDK
 - Vector DB: Pinecone, ChromaDB, Fasiss, Azure AI search, Weaviate
-

GUEST LECTURE

- Hands-on-AI , PSG College of Technology, Coimbatore
- Introduction to Generative AI , Coimbatore Institute of Technology, Coimbatore
- Prompt Engineering, PSG College of Technology, Coimbatore