KARUPPASAMY V

AI/ML Engineer

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SUMMARY

I'm an AI/ML Engineer with 4+ years of experience building LLM applications, RAG systems, and automation workflows. I've worked with GPT, Gemini, LangChain, Qdrant, MongoDB, and Google ADK to create intelligent bots and multi-agent solutions. I'm looking for a role where I can apply my GenAI skills to build effective AI products and improve business processes.

EXPERIENCE

AI/ML Engineer
Acabes International

📅 2024 - Present

- Built **AILAMA** bot using GPT-4o-mini, LangChain and RAG with Qdrant. enabled automated employee query and timesheet assistance.Generated **d**ynamic JQL queries with LLMs for Jira automation and improved internal productivity workflows.
- Developed a **Court Order Multi-Agent** system using Google ADK and FastMCP to automate manual account-related processes via external APIs.Performed ongoing **R&D in GenAI** (LLMs, OCR, vector DBs, guardrails, frameworks) to improve AI capability.
- Designed end-to-end LLM pipelines including prompt engineering, retrieval systems, and evaluation workflows.
- Collaborated with cross-functional teams to deploy AI features using Docker, GitLab CI/CD, and GCP Kubernetes.

Traniee
IGT Solutions pvt ltd

📅 01/2023 - 10/2024

- Gained hands-on experience in building conversational AI bots using LLMs, enabling seamless and context-aware interactions.
- Data preprocessing, feature engineering, and feature selection to ensure optimal input for the model
- Designed and implemented Retrieval-Augmented Generation (RAG) pipelines leveraging LLM frameworks like LangChain for efficient document querying and knowledge retrieval.
- Acquired expertise in utilizing LangChain to integrate LLMs with external tools, databases, and APIs for scalable and intelligent applications.

Associate Software Engineer
UST Global

📅 10/2021 - 01/2023

- Initiated career journey at UST Global, acquiring foundational IT knowledge and Python coding expertise.
- Started career at UST Global, gaining comprehensive skills in IT environment, teamwork, and Python coding. Assisted senior data science team in developing innovative machine learning models to drive business growth.

GENERATIVE AI PROJECT

AILAMA-Bot

- Developed an AI-driven bot application using **GPT-4o-mini** and LangChain, enabling intelligent query handling and automated employee assistance
- Implemented a complete **RAG pipeline** with **Qdrant** for vector storage and **MongoDB** for conversation history and context tracking.
- Designed LLM workflows to generate and execute JQL queries in Jira, returning accurate results through the bot
- Integrated retrieval, LLM reasoning, and Jira automation into a scalable workflow that reduced manual effort for internal teams.
- **Tech: LangChain,gpt-4o-mini,Qdrant,MongoDB,FastAPI,Docker,GCP,Guardrails**

Court Order Multi-Agent System

- Automated the manual court-order process by building a multi-agent workflow using **Google ADK**, enabling the system to read and understand emails such as account-tranfer or verification requests.
- Implemented multimodal extraction to pull key information from court emails and created sub-agents to validate customer and account details.
- Integrated **FastMCP** to let agents call external APIs for real-time verification and included a **Human-in-the-Loop (HITL)** step for reviewer/approver approval.
- Combined extraction, validation, and approval workflows into a unified pipeline backed by **MongoDB** and **Qdrant**, significantly reducing manual review time.
- **Google ADK**, **Gemini-2.5-Flash**, **FastMCP**, **MongoDB**, **Qdrant**, **Python**, **FastAPI**

CERTIFICATION

Azure AZ-900, Azure AI-900

LANGUAGES

English
Proficient

●●●●○

Tamil
Native

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SKILLS

Programming

Python

Frameworks/ Libraries

LangChain Python Google -ADK LangGraph

FastMCP FastAPI HuggingFace FineTuning

Guardrails

Microsoft Presidio NeMo Guardrails

LLM/VectorDB

Knowledge graph Qdrant OpenAI/Gemini

Neo4J Reranker Transformer GPT/BERT

RAG

DevelopmentTools

VSCode Jupyter Notebook Postman

CI/CD & DevOps

GitLab CI/CD Docker GCP

ADDITIONAL SKILLS

Machine Learning

Data Preprocessing Model Training

Model Building Regression Classification

Clustering Boosting XGBoost

Gradient Boosting NLP Supervised Learning

Unsupervised Learning

RESEARCH & DEVELOPEMENT

Generative AI
Acabes International

Regularly explore new developments in the GenAI space and build small POCs to understand how they can be used in real projects. I work on R&D topics such as the MongoDB MCP server, DeepWiki, DeepAgent, multimodal models, and other emerging AI tools. I also test new LLMs, frameworks, and vector search techniques to evaluate their practical value. This continuous R&D helps us stay updated and integrate the latest AI capabilities into our solutions.

EDUCATION

Master of Computer Application
Mepco Schlenk Engineering College

📅 2018 - 2020

GPA
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