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Abishek Velavan

Senior AI Engineer

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Professional Summary

A results-driven Senior AI Engineer with more than 4.5 years of experience specializing in the integration of Generative AI into enterprise-grade applications. Deeply proficient in AI, serverless, web technologies, and cloud-native AI services (Azure/AWS), with a focus on building intuitive, AI-powered user experiences. Proven track record in optimizing model inference and managing the full lifecycle of AI deployment at the production level. Adept at leading cross-functional teams and translating business requirements into AI-driven technical solutions. Committed to staying at the forefront of AI research while maintaining clean code and architecture.

SKILLS & TOOLS

- Programming Languages: Python, JavaScript, typescript
- AI: LangChain, Langgraph, Autogen, A2A Protocol, MCP, Prompt Engineering, LLM, RAG, Deepgram, OpenCV, Crew AI, Ollama, NLP, SpaCy, OCR, Magentic One, Agentic AI, Agentcore
- Cloud Platforms: Azure - CLU, Logic Apps, App service, Azure functions, Service Bus, Openai, Azure Devops
  - AWS - S3, Lambda, API Gateway, Opensearch, Bedrock, Quicksight
- Frontend Technologies: React.js, Redux, Next JS, HTML , CSS, Bootstrap, Streamlit
- Backend Technologies: Node.js, Express jS, Sequelize, Liquibase, Fast API, Pydantic
- Databases: Vector databases - FAISS, Opensearch, MySQL, MongoDB, Cosmos DB, Azure Redis Cache DB
- Observabality & Version Control: Langsmith, MLFlow, Git, Application Insights, CloudWatch

Work Experience Highlights

CES IT Pvt Ltd — **Senior Software Engineer** — **Sep 2021 – Present**

- **Visual Anomaly Detection & Self-Healing:** Spearheaded development effort of an LLM orchestrated solution that leverages SLM, RAG, Langchain, ML Flow, Fast API, Playwright to identify visual discrepancies on Lovable AI generated webpages and perform fixes retaining product tech constraints with 90% accuracy.
- **LLM Powered Verification:** Architected and implemented a multi agent system using Autogen, Langsmith, MagenticOne & OpenAI to verify and classify legitimate applications for a pharmaceutical onboarding Workflow to reduce verification time down to 10% of manual effort.
- **Voice AI Agent Accelerator:** Architected and built a Voice AI accelerator using Deepgram, Plivo, websockets, NoiseReduce, Open AI, Fast API and Azure that can be easily configured and deployed for new use-case with just a single prompt change.
- **MCP Research:** led the efforts to research MCP Servers for a client Project, explored multiple external MCP server Integration, built several MCP clients / servers and deployed them in Azure with authentication.
- **AI Insurance Claims Automation:** Developed a Proof of concept to automate 50% of Health and Auto Insurance claims workflow. Leveraged Agentic RAG, Langgraph, Fast API, Flask, LangExtract to extract, validate and help agents process claims faster.
- **Precheck Chatbot:** Engineered a chatbot using Azure language understanding (CLU) and OpenAI to optimize truck waiting time by 60% than existing flow for 50+ plants across the US. Worked on IOT API integrations to assign and open dock doors automatically once workflow is passed.

- **Document Extractor:** Built a multi-agent powered document extractor using Langgraph, LangExtract, Vision LLMs to extract complex data and structure it for API, Database and MCP Interpretation.
- **Teleprompter & Scriptwriter:** Built an LLM powered scriptwriter and teleprompter using foundational models to dynamically generate video script based o scenarios.
- **AI Sales Chatbot:** Built a RAG based chatbot that scrapes and self ingests a website's data updates into its vector Databases and answers questions about the company. Being tested for productionalization.
- **Generative BI**: Designed a PowerBI Dashboard with Python scripts to generate automated summaries using LLM and generate chart powered insights from custom user queries
- **Agentic Pipeline Builder:** Proof of concepts that generates CI-CD pipelines from project documentation or pre existing pipelines.
- **Cart Abandonment Assistant:** An AI assistant that triggers voice and text based followups for abandoned carts and wishlists and upsells the product and gathers user feedback to regain lost customers.
- **Checkout Chatbot:** Programmed an AI assistant using Autogen, multi agentic RAG system that will recommend products and provide checkout links based on user preferences and past history to help purchase clothing apparels.
- **Deepfake POC:** Researched on deepfake in 2023, leveraged multiple Machine learning models like Tacotron, WavGan, DeepFaceLab to clone face and voice for real estate Sales video generation.

Achievements

- **Best Tomorrow's Engineer** 2020 – KPRIET
- **Aatmanirbhar Ideathon** 2020 Finalist
- **Employee of the Month** – August 2023 – CES IT
- **Rising Star** 2023 – CES IT annual award
- **Brand Ambassador** 2024 – CES IT annual award
- **System Samurai** 2024 - CES IT Tech Leadership Summit Award
- **Trailblazer** 2025 - CES IT annual award
- **Patent Published** - Social Primer IN 202041021952
- TEDx License Holder - 2021

Education

KPRIET, Coimbatore

- **Major:** Bachelor of Engineering in Computer Science - 8.44 (CGPA)

Certifications

- AWS Bedrock - AWS
- Planning a Generative AI org - AWS
- Generative AI - Udemy
- Building RAG workflow with opensearch - AWS
- Prompt Engineering - AWS
- Generative BI with Quicksight - AWS
- Deep Learning - Guvi
- ML 101 - Guvi
- React JS - Udemy
- Deep Agents - Langchain Academy
- Gen AI Solution Design - AWS
- Autogen - Udemy
- Python - Hackerrank
- Javascript - Hackerrank
- React - Hackerrank
- MERN fullstack Guide - Udemy
- problem solving - Hackerrank
- LangSmith - Langchain Academy