**Vivek Ananthan M.S**  
AI Architect | Sr. Machine Learning & MLOps Engineer | LLM & GenAI Specialist | Azure Certified  
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Visa : B1B2

**Professional Summary**

AI Architect with 11 years of experience in building scalable ML systems and LLM-based agent workflows. Expertise in full ML lifecycle—training, deployment, tracing, observability, and drift detection—ensuring secure, compliant, and production-grade delivery using modern cloud-native and AI-native architectures.

**Education**

* **PG Diploma in Data Science** — UpGrad & IIIT-Bangalore (2017–2018)
* **M.Tech (CS Engineering)** — Anna University, Tirunelveli (2009–2014)

**Technical Skills**

| **Category** | **Tools & Technologies** |
| --- | --- |
| Languages & Scripting | Python, PySpark, C++, SQL, JavaScript (NextJs, Node.js) |
| Machine Learning & AI | PyTorch,Tensorflow, Transformers, Scikit-learn, Spacy, SHAP, LIME, OpenCV, YOLO |
| LLMs & Agents | LangChain, CrewAI, FastAgents, Semantic Kernel, VectorDBs |
| MLOps & AI Monitoring | MLflow, Langfuse, LLM Observability & Traceability |
| Cloud & Infrastructure | Azure (Certified), AWS, GCP, Docker, Kubernetes, Bicep |

**Experience**

**Fortive — *Sr. ML Engineer***

**Jul 2023 – Present**

* Architected and **fine-tuned Mistral model** **(LLM LORA FineTuning, unsloth**) on custom oscilloscope command sets, enabling natural language interaction for device operations and significantly enhancing user productivity.
* Led the design and development of GenAI based **Multi-Agent RAG** system to process structured and unstructured data using Azure OpenAI, CrewAI, and FastAgents, streamlining knowledge access for internal teams.
* Architected and deployed **YOLO**-based medical instrument detection models to edge environments, enabling real-time inference and enhanced device intelligence.
* Developed an internal platform to enable and mentor organization-wide Kaizen activities, driving a culture of continuous improvement. Currently used by 14000+ employees.
* Designed and built knowledge engines with semantic and vector search capabilities, leveraging VectorDBs and SQL Server to optimize **efficient data retrieval.**
* Implemented robust data pipelines with Azure Data Factory and Container App Jobs for efficient chunking, ingestion, and orchestration of the knowledge engine workflows.

**Happiest Minds Technologies — *Lead Data Scientist***

**Jan 2019 – Jul 2023**

* Created multiple internal intellectual properties (IPs) with end-to-end deployment.
* Managed internal ML team for all Vision based projects.
* **Loan Default & Conversion Analysis (Banking Client)**
  + **Decreased loan default rates from 34% to 18%,** improving client revenue.
  + Built user conversion models to reduce marketing expenditure.
  + Integrated model drift detection and CML (Continuous ML) pipelines using MLFlow and DVC.
* **Product Image Validation & Demand Forecasting (OEM Client)**
  + Developed segmentation model (**U-Net, MobileNetV2**) for verifying product images—**reduced manual effort significantly.**
  + Built demand forecasting models using **PySpark** on Databricks; increased throughput and shelf-time optimization.
  + Implemented the MLOps via MLFlow with data drift detections in Azure.
* **Image-based Search Engine (Energy Client)**
  + Curated a content pipeline with object detection + OCR and built a vector-based search engine using ResNet, EasyOCR, and OpenCV.

**Aagnaa Software Labs — *Product Solutions Engineer***

**Feb 2016 – Dec 2018**

* Designed and deployed AR-based virtual try-on system used by retailers like PN-RAO and Raymonds stores and impacted the conversion by 30%.
* Built **3D hand gesture recognition models** using depth camera feeds (Kinect/RealSense).
* Created recommender systems for retail clients using collaborative filtering.

**Cognizant Technology Solutions — *Programmer Analyst***

**Jun 2014 – Feb 2016**

* Streamlined data validation with custom rule engines.
* Built and deployed sentiment extraction modules for customer review comments.
* Built a query classification NLP module and created data exploration dashboards.

**Achievements**

* 3rd place – Analytics Vidhya Dataverse Hackathon (2022)
* 1st Runner-up – Annual Happiest Minds Hackathon
* 4th place – "You Hack the Virus" by HackerEarth
* Multiple Annual and Quarterly Excellence Awards

**Certifications**

* Azure AI Engineering Associate
* Deep Learning Specialization – Coursera
* TensorFlow Developer Certificate – Deeplearning.ai

I hereby declare that the above-mentioned details are true to my knowledge.

Vivek Ananthan