

VELLAICHAMY UTHIRASENAN

Agentic AI Solution Architect / AI Engineer / Cloud Architect

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PROFILE SUMMARY

Accomplished AI Platform Architect and Enterprise Solution Architect with **18+ years** of experience in enterprise software engineering, cloud architecture, and AI/ML platforms, including **3+ years** specialising in Generative AI and Agentic AI. Proven track record designing, governing, and delivering enterprise-scale AI solutions across **Azure, AWS, and hybrid cloud** environments for regulated, high-availability platforms.

Deep expertise in Azure AI Foundry, Azure OpenAI, Azure Machine Learning, AWS Bedrock, and Microsoft Copilot Studio, with hands-on delivery of RAG pipelines, multi-agent orchestration (LangGraph, Semantic Kernel, AutoGen, MCP), MLOps, API strategy, DevSecOps, and Responsible AI governance.

CORE COMPETENCIES

- Generative AI & LLMs:** GPT, Claude, Mistral, Falcon, Titan, Phi-2, Agentic AI
- RAG & Vector Databases:** OpenSearch, Pinecone, Weaviate, FAISS, chunking/embedding strategies
- Agent Orchestration:** LangGraph, Semantic Kernel, AutoGen, CrewAI, Model Context Protocol (MCP)
- Cloud & AI Platforms:** Azure AI Foundry, Azure OpenAI, Azure ML, Azure Cognitive Search, AWS Bedrock, Microsoft Copilot Studio
- MLOps & DevSecOps:** CI/CD for ML/GenAI, MLflow, Kubeflow, SageMaker, Airflow, Docker, Kubernetes (AKS/EKS)
- Security & Governance:** IAM/RBAC, Keycloak, OAuth2, JWT, Responsible AI, explainability & compliance frameworks
- Data Engineering:** Azure Databricks, Microsoft Fabric, Snowflake, PySpark, Azure Data Factory, Synapse
- Languages & APIs:** Python, JavaScript, TypeScript, Node.js, FastAPI, REST, microservices

TECHNICAL EXPERTISE

GenAI & LLMs	GPT, Claude, Mistral, Titan, Falcon, Phi-2, AWS Bedrock, Azure OpenAI, Agentic AI
Frameworks	LangChain, LangGraph, Semantic Kernel, CrewAI, AWS Agent Framework, AutoGen
Vector DBs	OpenSearch, Pinecone, Weaviate, FAISS
MLOps	SageMaker, Kubeflow, MLflow, Airflow
Cloud	AWS (EKS, Lambda, DynamoDB, OpenSearch), Azure (AKS, Cognitive Search, ML Studio)
Languages	Python, JavaScript, TypeScript, Node.js
Security	IAM, RBAC, Keycloak, OAuth2, JWT

CI/CD	GitHub Actions, Jenkins, Docker, Kubernetes
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PROFESSIONAL EXPERIENCE

Agentic AI Solution Architect / AI Engineer

Feb 2024 – Present

TeamLease — ALCS NG SaaS Platform / Remote, India

- Designed and implemented enterprise-grade LLM customisation pipelines for HR and workforce-automation use cases, using **PEFT, QLoRA, and LoRA adapters** for low-cost domain adaptation.
- Built response-grounding techniques combining **RAG with fine-tuned adapters**, cutting hallucination rates and improving answer reliability, validated through HELM and custom benchmarks.
- Established **Responsible AI and governance frameworks** covering explainability, compliance, and data protection across the platform.
- Automated **model CI/CD pipelines**, versioning, and model registry in collaboration with DevOps.
- Delivered AI observability dashboards (Grafana, Prometheus) for model drift and performance monitoring.
- **Tech stack:** Python, FastAPI, LangGraph, CrewAI, AWS Bedrock, Claude, Llama 2/3, Mistral, OpenSearch, Pinecone, Weaviate, Kafka, Kubernetes, MLflow, ReactJS.

AI/ML Solution Architect / AI Engineer

Feb 2022 – Feb 2024

BuddyBet / Australia

- Architected **enterprise-grade GenAI platforms** on Azure for large-scale, regulated SaaS workloads using Microsoft Copilot Studio.
- Designed **RAG pipelines** using Weaviate and Pinecone, enabling secure, low-latency knowledge retrieval.
- Built **production-ready GenAI workflows** on Azure OpenAI, including prompt orchestration, safety controls, and evaluation.
- Led **MLOps architecture** (Kubeflow, MLflow) covering CI/CD, monitoring, and retraining for production models.
- Deployed AI services on **AKS** with event-driven architectures using Kafka, Redis, and RabbitMQ.
- Defined Responsible AI and governance frameworks aligned with enterprise and regulatory requirements.
- **Tech stack:** Azure OpenAI, AWS Bedrock, LangChain, Semantic Kernel, Kubeflow, MLflow, AKS, Kafka, RabbitMQ, FAISS, Pinecone.

AI/ML Architect / AI Engineer / Cloud Architect

Apr 2016 – Feb 2022

Encora Pvt Ltd — Client: Armor Complete / Secure Cloud Hosting Platform

- Designed **AI-driven analytics platforms** using Azure ML services for risk prediction, fraud detection, and behavioural analytics.
- Integrated **Azure Cognitive Services and GenAI capabilities** into customer-facing applications.
- Built secure, compliant cloud hosting solutions for sensitive and regulated enterprise workloads using microservices, AWS, Docker, RabbitMQ, Redis, and Elasticsearch.

- Established CI/CD pipelines and cloud-native deployment strategies; led distributed teams delivering production AI systems against strict uptime and performance SLAs.
- Developed front-end systems using Python, React, TypeScript, and Redux, integrated with cloud services.

EARLIER CAREER (2004 – 2016)

Progressed from front-end/UI development into full-stack and solution architecture roles across banking, insurance, and enterprise data platforms.

- **Senior Consultant**, EVRY — Payment Client | Aug 2015 – Apr 2016 — Front-end architecture (React, Redux, SASS) for a multi-channel banking payment platform.
- **Senior UI Consultant**, Talent Recruit, Bangalore | Feb 2015 – Aug 2015 — Front-end development and wireframing (Angular.js, HTML5/CSS3).
- **Design Consultant**, Trigent Software — Client: Honeywell Technology Solutions Lab | Feb 2014 – Feb 2015 — UI architecture and localisation for the MAXPRO® VMS video management system.
- **Developer**, Princeton Data Solutions — Project *Dazzle* | Dec 2010 – Feb 2014 — .NET 4.0/WCF application development using MVVM and n-hibernate.
- **Developer**, J.P. Morgan — Project *Trade Anywhere*, Wilmington, DE, USA | Feb 2008 – Jun 2010 — WCF/SOA services for an order-routing and risk-management trading platform; supervised up to 12 developers.
- **Developer**, Enzen Tech, Bangalore | May 2007 – Jan 2008 — Front-end prototyping for a Clinical Trial Management System.
- **Developer**, Asian CERC — Project *MF-IPO Anywhere* | Nov 2005 – Apr 2007 — ASP.NET/C# web application development for mutual fund transaction processing.

EDUCATION

Master of Computer Applications (MCA) — Madurai Kamaraj University | 2004