

# MOHAMED ISHAK K

**AI/ML Engineer & Tech Lead - Agentic AI | Voice Agents | RAG Pipelines | ML/LLMOps**

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## PROFILE

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AI/ML Engineer with 2.5 years of experience building and shipping production-grade AI systems - spanning Multi-Agent orchestration, low-latency Voice Agents, RAG pipelines, and LLM-powered document intelligence. Proven track record leading cross-functional teams through full agile delivery cycles, from architecture to deployment. Deep hands-on expertise across the modern AI stack: Python, PyTorch, LangChain, LangGraph, CrewAI, Pipecat, vector databases, and knowledge graph engineering (Neo4j/Cypher). Delivers cloud-native, security-hardened systems via Azure AKS, ArgoCD, and CI/CD pipelines - with strong practices in RBAC, audit logging, and agent governance.

## HIGHLIGHTS

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- Drove high-impact AI initiatives from zero to production - leading cross-functional teams with sharp agile discipline, stakeholder clarity, and hands-on architectural ownership at every stage of delivery.
- Architected production-scale Multi-Agent systems with advanced orchestration (LangChain, LangGraph, CrewAI) - delivering autonomous, coordinated AI workflows end-to-end.
- Engineered low-latency Voice Agent solutions via the Pipecat framework, wiring TTS/STT/LLM pipelines across OpenAI, Deepgram, ElevenLabs, and Cartesia for sub-second conversational experiences.
- Built end-to-end RAG pipelines with hybrid retrieval across Weaviate, OpenSearch, FAISS, and Pinecone - grounding LLM responses on complex, document-heavy corpora.
- Designed Neo4j knowledge graphs with Cypher-based traversal and hybrid graph+vector search, enabling precision compliance and regulatory navigation
- Delivered cloud-native CI/CD pipelines via Azure DevOps, GitHub Actions, ArgoCD, and Azure AKS - ensuring zero-downtime deployments and continuous delivery at scale.
- Governed polyglot database environments (MySQL, PostgreSQL, SQL Server, MongoDB, DynamoDB) with enterprise-grade security, RBAC, and audit logging

## EXPERIENCE

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### **Engineering Manager & AI Developer - LuMay AI Inc. (Remote, United States)**

*Feb 2025 – Apr 2026*

- Spearheaded cross-functional teams through agile delivery cycles - driving project milestones with structured sprint planning, stakeholder alignment, and hands-on technical leadership.
- Architected and deployed scalable Multi-Agent systems with advanced orchestration techniques, enabling autonomous, coordinated AI workflows at production scale.
- Engineered production-grade low-latency Voice Agent solutions using the Pipecat framework, integrating TTS/STT/LLM pipelines with real-time models and multi-provider support (OpenAI, Deepgram, ElevenLabs, Cartesia) for sub-second conversational AI experiences.
- Engineered and fine-tuned AI/ML applications using Python, PyTorch, Prompt Engineering, and RAG techniques - translating research-grade models into reliable production systems.
- Built end-to-end RAG pipelines with LangChain using Weaviate/OpenSearch/FAISS for grounded natural-language querying of compliance documents.

- Delivered robust cloud-native architectures via Azure DevOps, GitHub Actions, ArgoCD, and Azure AKS - enabling zero-downtime deployments and continuous delivery pipelines.
- Governed multi-model database environments (MySQL, SQL Server, PostgreSQL, MongoDB) with a focus on scalability, data integrity, and security hardening.

### **Lead System Architect - SoftSpark Inc. (Tiruchirappalli, India)**

*Oct 2023 – Jan 2025*

- Lead architecture and end-to-end development for web and mobile apps, backend APIs, database management, and CI/CD for rapid deployment.
- Led backend engineering and deployments using Spring Boot, MERN stack, and AWS ECS for scalable services.
- Established DevOps workflows with Jenkins and Git-based CI/CD; supported data operations using SQL/NoSQL systems for ML-ready pipelines.
- Implemented API-first integrations and production hardening patterns (caching, error handling, observability) to support ML workloads at scale.

### **SKILLS**

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Languages: Python, Javascript, Java, Kotlin, C, C++, Go, Dart

Knowledge Graphs: Neo4j, Cypher, Schema/Ontology Design, Graph Traversal Retrieval

AI/ML & NLP: Hugging Face Transformers, OpenAI API, SpaCy, Scikit-learn, PyTorch

App Development: Android(Kotlin), iOS(Swift), React Native, Flutter

Agent Engineering: Multi-Agentic Orchestration, Context Engineering, RAG Techniques, Prompt Engineering

MLOps: MLflow, Docker, Azure DevOps, AW DevOps, Jenkins, Azure AKS, AWS ECS, CI/CD, monitoring/drift, Model Versioning

RAG & Retrieval: LangChain/Langgraph/CrewAI, Hybrid retrieval, FAISS, OpenSearch, Weaviate, Pinecone

Security: Agent Governance, PII redaction, RBAC, Audit Logging

Frameworks: FastAPI, Flask, React.js, Angular.js, Node.js, Spring Boot

Databases: MySQL, PostgreSQL, SQLServer, MongoDB, DynamoDB

### **EDUCATION**

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**B.E. - Anna University (Dhanalakshmi Srinivasan Engineering College, Perambalur)**

*2019 – 2023*