AHMED MOHAMED

AI Solutions Architect | Generative AI, RAG & Agentic Systems | Enterprise AI Delivery

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PROFESSIONAL SUMMARY

AI Solutions Architect with 18+ years spanning enterprise, solution, cloud, and AI architecture, including hands-on production delivery of generative AI, RAG, and agentic systems for large-scale, regulated organizations. Currently embedded within the Saudi Public Investment Fund (PIF) as part of a dedicated AI solutions team, taking GenAI use cases from discovery and ideation through PoC and production on Palantir Foundry and AIP — personally building RAG pipelines with vector, hybrid, and graph-based retrieval, agentic workflows orchestrated with AIP Logic, chatbot applications, and recurring LLM evaluation and regression-testing suites, while leading and mentoring a data engineering team. This flagship engagement caps a multi-sector NEOM consulting portfolio spanning Food, Environment, Energy & Water, Hotels, and the University of NEOM, across digital strategy, data strategy, business capability mapping, procurement, and system design. Skilled at translating ambiguous business problems into scalable, well-governed AI architectures while partnering with executive stakeholders. Recently completed an M.Sc. in Artificial Intelligence (University of Texas at Austin, GPA 3.93). Certified across the full Google Cloud AI/data/platform stack, plus AWS Solutions Architect Professional and Palantir.

CORE COMPETENCIES

Generative AI & Agentic Systems

LLMs, Retrieval-Augmented Generation (vector, hybrid & graph-based retrieval), agentic/autonomous workflows, prompt & context engineering, Palantir AIP Logic orchestration, ASR pipelines

AI Engineering & Evaluation

LLM evaluation datasets & regression testing (retrieval relevance, groundedness, latency, cost), embeddings & vector search, model explainability (Grad-CAM, SHAP), MLOps & model monitoring, cost & latency optimization

System Design & Architecture

Enterprise & Cloud Architecture, Reference Architectures, HLD/LLD, Integration & Data-Flow Design, NFRs, Secure Landing Zones, Cost/Option Analyses

Architecture Governance

Technical Evaluation & Compliance Reviews, RFP Development, Vendor & Solution Assessment, BDAT Domains (Business, Data, Application, Technology)

Platforms & Cloud

Palantir Foundry & AIP, Google Cloud (Vertex AI, BigQuery), AWS, Python/PyTorch/Hugging Face, Docker & Kubernetes

Leadership & Delivery

Engineering Team Leadership & Mentoring, Digital & Data Strategy, Executive Stakeholder Engagement, Procurement Advisory, PoC-to-Production Delivery

PROFESSIONAL EXPERIENCE

AI & Cloud Solutions Architect — Tonomus, NEOM, Riyadh

Oct 2021 – Present

Embedded solutions consultant serving multiple NEOM sector clients across the full engagement lifecycle — from digital & data strategy through business capability mapping, procurement advisory, system design, and technology consulting — culminating in hands-on production AI delivery at PIF.

- **PIF flagship delivery:** architected and hands-on built an end-to-end enterprise GenAI system on Palantir Foundry & AIP — RAG pipelines, ASR ingestion, agentic workflows, RBAC, lineage, and telemetry — designed to production-grade NFRs (security, latency, cost, observability) in a regulated public-sector environment.
- **Hands-on engineering ownership:** personally built and owned production Foundry components — data pipelines, ontology objects, chatbot applications, RAG pipelines, and data visualizations — with agentic orchestration implemented in AIP Logic.
- **Advanced retrieval:** designed and built enterprise RAG pipelines combining vector, hybrid, and graph-based retrieval — source curation, chunking, embeddings, and prompt orchestration — for grounded, source-attributed answers.
- **LLM evaluation & regression testing:** defined evaluation datasets and recurring regression tests covering retrieval relevance, groundedness, latency, and cost, using results to drive continual improvement of retrieval and prompt strategies.
- **Engineering leadership:** led and mentored the data engineering team of Saudi fresh-graduate engineers through design reviews, pair-building, and delivery ownership on production GenAI workstreams.
- Engineered an ASR transcription workflow automating audio ingestion, speech-to-text, transcript cleanup, and routing into the retrieval index.
- Authored NEOM enterprise AI and cloud reference architectures, landing zones, HLD/LLD, integration architectures, data-flow designs, and NFR & cost/option analyses across sector programs.
- Advised on procurement and technology selection — vendor evaluation, TCO modeling, technical due diligence, and RFP support across sector clients (Food, Environment, Energy & Water, Hotels, University of NEOM).

- Facilitated AI discovery workshops, executive presentations, and technology assessments for senior client stakeholders.

Solution Architect — Mobily, Riyadh *Jul 2017 – Sep 2021*

- Partnered with business and IT stakeholders to define, review, and refine requirements, ensuring alignment with project goals and architectural standards.
- Led architecture presentations and workshops with clients and stakeholders to walk through proposed solutions and gather governance feedback.
- Documented solution architecture artifacts — business use cases, data flows, functional/non-functional requirements — and produced system diagrams identifying interdependencies and risks.
- Prepared solution designs across IT, network, and security domains, ensuring systems were secure, scalable, and cost-effective.

Senior Consultant — Ericsson, Sulaymaniyah *Jul 2013 – Jun 2017*

- Provided hands-on architecture support on a large-scale Telecom IT Transformation program for Asiacell Telecom, leading a development team customizing the BSCS iX R3 billing platform.
- Advised management on development estimates, technical risk, and architecture/technology choices; built integration endpoints between BSCS iX and CRBT, online mediation, POS, and CRM platforms.

Consultant — Atos, Rabat *Aug 2012 – Jun 2013*

- Designed and implemented software applications for new products and offers for Maroc Telecom, including a Spring Batch application for tariff-model changes and an end-to-end location-monitoring service.

Software Engineer — Xpress Integration & Ericsson, Cairo *Jul 2008 – Jul 2012*

- Designed and developed the SPT (Smart Promotion Tool) and a SQL query-builder module for customer-eligibility targeting, plus re-rating batch processing; earlier built GSM network-simulation and mass-service-activation tooling at Ericsson.

EDUCATION

M.Sc. in Artificial Intelligence — University of Texas at Austin *Sep 2024 – May 2026*

GPA 3.93/4.00

- **Selected project — Medical Imaging Diagnostic Pipeline:** trained a brain-cancer classification model with structured error analysis and Grad-CAM/SHAP explainability, reducing false positives by 13%.
- **Selected project — Vision-Language Model Fine-Tuning:** fine-tuned a VLM for visual question answering, covering preprocessing, augmentation, experiment tracking, and structured evaluation.

Postgraduate Diploma in Software Engineering — Information Technology Institute (ITI), Cairo *Jul 2007 – Jun 2008*

B.Sc. in Mathematics and Computer Science — Menoufia University, Shebin Elkom *Sep 2001 – May 2005*

CERTIFICATIONS

- **Google Cloud:** Professional Machine Learning Engineer, Professional Data Engineer, Professional Cloud Architect, Generative AI Leader, Associate Cloud Engineer
- **AWS:** Solutions Architect – Professional, DevOps Engineer – Professional, Solutions Architect – Associate, Cloud Practitioner
- **Palantir:** Foundry Data Engineer Associate, Foundry Application Developer Associate, Foundry & AIP Builder

LANGUAGES

- **Arabic:** Native
- **English:** Fluent