Khaled Saleh — AI Engineer

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Professional Summary

AI Engineer specializing in Retrieval-Augmented Generation (RAG) systems, multi-agent AI architectures, and LLM-powered application development. Experienced in prompt engineering, AI agent orchestration, and building end-to-end intelligent systems using FastAPI, LangGraph, and Google Gemini. Applies vibe-coding and AI-assisted development to rapidly deliver full-stack platforms for government and enterprise clients.

Technical Skills

Programming Languages: Python, SQL, Bash, JS
Machine Learning & AI: PyTorch, Transformers, Scikit-learn, AI Agents, RAG Systems, LangGraph, LangChain, ChromaDB
LLM & Prompt Engineering: Google Gemini (Vertex AI), Qwen, LLaVA, Ollama, Prompt Design, Vibe-Coding
Data Engineering: ETL Pipelines, Apache Kafka, Web Scraping, SQLAlchemy, MySQL
Backend Development: FastAPI, Flask
Frontend Development: HTML, CSS, Streamlit (AI-assisted full-stack via vibe-coding)
Databases: PostgreSQL, MySQL, MongoDB, SQLite, Neo4j / NebulaGraph, Redis
DevOps & Cloud: Docker, Git/Github, AWS, Linux, Shell Scripting, Vercel

Work Experience

Amman, Jordan
HTU-Fellow 9XAI — *2026 – Present*

- Designed and built AI-powered backend systems for Jordanian government clients, focusing on RAG pipelines, LLM agent orchestration, and intelligent document processing
- Applied prompt engineering and vibe-coding to rapidly prototype and deliver full-stack platforms, including dashboards and data interfaces, without deep frontend specialisation
- Integrated multi-agent workflows using LangGraph and Paperclip, connecting vector databases, graph databases, and streaming LLM APIs into production-ready systems
- Collaborated with government decision-makers to translate complex AI capabilities into clear, usable products aligned with Jordan Vision 2033

Projects

FastAPI, LangGraph, Vertex AI, PostgreSQL, Neo4j, Docker
9XAI / HTU — *March – 2026*
Tashri3atukom – Legal Twin Engine (RegTech)

- Built a regulatory intelligence platform for Arabic and English legislation with automated obligation extraction, conflict detection, and change tracking
- Designed an Arabic-aware NLP ingestion pipeline for PDF/DOCX legislation; wrote 73 automated tests covering embeddings, conflict detection, and search reranking
- Set up CI/CD with GitHub Actions and a multi-service Docker Compose environment spanning API, graph DB, vector store, and relational DB
- Deployed to Jordanian government institutions as Tashri3atukom V3, including verbal audit trail and legal-twin comparison studio features

FastAPI, LangChain, LangGraph, PostgreSQL, Docker

9XAI / HTU *Feb – 2026*

AI Government Control Tower

- Architected an AI platform that monitors and analyses public-sector performance across 14+ Jordanian ministries through RAG document scanning
- Built dedicated microservices for auth, ingestion, and RAG-agent orchestration; loaded ministry source datasets covering education, health, finance, energy, justice, and digital economy
- Delivered a production-grade V3 refactor with LangGraph orchestration, Alembic-managed migrations, and automated acceptance tests
- Produced full architecture documentation and a living improvement roadmap for ongoing government use

FastAPI, Python, CesiumJS (vibe-coded), Node.js, Vercel

9XAI / Hackathon *March – 2026*

GPS Earth – Real-Time 3D Geospatial Intelligence Platform

- Built the FastAPI backend that fetches, normalises, and serves live data feeds (flights, satellites, seismic events, wildfires, CCTV cameras, ships, road traffic) via REST
- Vibe-coded the frontend globe UI, tactical HUD components, and a Node.js proxy server for CORS handling and external API token injection using AI-assisted development
- Deployed the production application to Vercel with serverless functions

Paperclip, Multi-Agent AI, Next.js

9XAI Hackathon *Apr – 2026*

Sovereign Intelligence System – Ministerial Digital Twin

- Led the AI architecture for a 36-agent ecosystem simulating the Minister of Public Sector Development, aligned with Jordan Vision 2033, during the 9XAI Digital Twin Hackathon
- Organised agents into five layers: Sensing, Diagnostic & Simulation, Execution, Governance Triple Gate (Ethics · 2033 Guardrail · XAI), and Crisis Resilience
- Engineered 50 automated ministerial workflows and Explainable AI (XAI) reasoning paths; vibe-coded the Next.js 14 real-time monitoring dashboard

FastAPI, Google Gemini, ChromaDB, LangChain, SQLite, Docker

9XAI / HTU *Feb – 2026*

Jordan Vision RAG Chatbot

- Built a RAG system enabling natural-language querying of Jordan's national vision documents across 6 Arabic PDFs and 217 semantic chunks
- Implemented Arabic text cleaning via Gemini, cosine-similarity semantic search, Human-in-the-Loop (HITL) flagging for low-confidence answers, and a persistent user teaching system
- Vibe-coded a ChatGPT-style chat interface with JWT authentication, conversation history sidebar, auto-titled sessions, and multilingual guardrails (Arabic / English)

FastAPI, Docker, Qwen 2.5, EasyOCR, Hugging Face

Personal Project *Jan – 2026*

AI Document Assistant (DWT)

- Developed a local, privacy-first AI document assistant integrating Large Language Models (LLM) and Optical Character Recognition (OCR) for secure data processing
- Engineered a context-aware chat system using Qwen 2.5 (1.5B) to enable natural language querying and analysis of user-provided text content
- Implemented intelligent identity card data extraction using EasyOCR (25M), capable of parsing mixed Arabic/English text into structured JSON format
- Containerized the full-stack application using Docker and NVIDIA Container Toolkit to ensure consistent GPU-accelerated performance across different Linux environments

Gemini API, LangGraph, FastAPI, Docker, PostgreSQL, Streamlit

Personal Project *Aug – 2025*

Medical Understanding Multi-Agent System

- Architected a multi-agent medical consultation system featuring 5 specialized AI experts (English/Arabic Medical Doctors, AI Researcher, General Expert) using Google Gemini and LangGraph
- Engineered multilingual support with automatic language detection for Arabic and English, incorporating cultural sensitivity and Islamic medical ethics considerations
- Implemented persistent conversation memory using PostgreSQL with session management and real-time web search via Tavily API integration
- Built emergency detection system with automatic identification of critical medical situations and appropriate escalation protocols

Transformers, Apache Kafka, Flask, MongoDB, NewsAPI

Team Project *Mar – 2025*

Real-Time Financial News Sentiment Analysis Dashboard

- Developed real-time financial news aggregator and sentiment analysis system using finance-specific FinBERT model for accurate sentiment classification
- Architected distributed streaming system with Apache Kafka for message processing between scraper, analyzer, and storage components
- Implemented automated news scraping from NewsAPI with duplicate detection based on URL and title matching
- Built Flask-based web dashboard presenting analyzed news with sentiment indicators (Positive, Neutral, Negative)

Apache Airflow, Python, Pandas, Scikit-learn, MySQL

Team Project *Jan – 2025*

Automated ETL Pipeline with Apache Airflow

- Designed and automated an end-to-end ETL pipeline using Apache Airflow with workflow orchestration through DAGs
- Integrated machine learning model for diabetes prediction using Scikit-learn classification algorithms
- Implemented automated data extraction, transformation, and loading processes ensuring data quality and consistency

Python, BeautifulSoup, Selenium, Pandas, MySQL, SQLAlchemy

Team Project *Dec – 2024*

IMDb Top 250 Movies ETL Pipeline

- Built comprehensive ETL pipeline to scrape, clean, and store IMDb's Top 250 Movies dataset
- Developed web scraping solution using BeautifulSoup and Selenium for automated data collection
- Performed data cleaning and transformation using regex patterns and Pandas operations
- Designed relational database schema and implemented querying functionality with MySQL and SQLAlchemy ORM

Education

Hashemite University **Zarqa, Jordan**

Bachelor of Science in Data Science and Artificial Intelligence *Oct 2022 — Jan 2026*

Speaking & Recognition

HTU – Al-Hussein Technical University

TEDx Speaker *2026*

- Delivered a TEDx talk titled *"How I Turned My Weaknesses into Strength"* — a personal narrative of career setbacks, self-directed AI learning, and building real production systems

Certifications & Professional Development

View Complete Certifications

Languages

Arabic: Native proficiency

English: Full professional proficiency