Ahmad Shekha

Arabic NLP Engineer | RAG, GraphRAG & Knowledge Graphs | Self-Hosted LLMs

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Summary

AI engineer specializing in turning unstructured Arabic text into structured, queryable systems. Builds production RAG, GraphRAG, and knowledge-graph systems deployed self-hosted in fully offline environments. Also a university lecturer in machine learning and cybersecurity.

Experience

AI Engineer
2025 – Present

Government sector, Damascus

- Architected and shipped six production AI systems spanning retrieval, knowledge graphs, NLP enrichment, speech-to-text, and OCR, all running end-to-end in real operational use.
- Built GraphRAG systems from scratch: retrieval that reasons over knowledge graphs, with LLM-assisted query planning to keep answers fast, accurate, and cost-efficient.
- Engineered production RAG pipelines with hybrid semantic and keyword retrieval, reranking, query rewriting, self-correction, and source citation.
- Designed large-scale knowledge graphs, ingesting 180K+ records into 2M+ nodes and relationships in under 15 seconds, with automated integrity checks.
- Built Arabic NLP components: text normalization, entity resolution across noisy and inconsistent name variants, and confidence-scored matching using embeddings and knowledge-base retrieval.
- Fine-tuned transformer models for multi-label text classification, validated on adversarial test sets.
- Deployed self-hosted LLMs in air-gapped environments as one-command installs bundling models, authentication, and monitoring.

Lecturer
Oct 2025 – Present

Syrian Private University (SPU), Damascus

- Teach the machine learning lab, Computer Security Essentials (encryption and cryptography), and Database System Security.
- Supervise and serve on jury/defense committees for graduation projects in the Cybersecurity specialization.
- Member of the three-person panel selecting and training students for the HKCERT CTF competition, covering cryptography and database security.
- Design original coursework and materials end-to-end, including logistic regression from first principles and a knowledge-graph fundamentals module; write and grade exams.

Blockchain Developer
Aug 2024 – Sep 2024

Small Cap AI, United Kingdom (remote)

- Integrated MetaMask wallet connectivity and built the interface for users to link their crypto wallets.

Research Projects

Bitcoin Centralization, Theft Detection & Blockchain Simulation
Undergraduate

Graduation and minor projects, SPU

- Measured Bitcoin mining centralization from BigQuery block data using four published metrics; clustered outlier blocks and extracted interpretable rules from a decision tree.
- Engineered features around a known 2012 Bitcoin theft and compared multiple classifiers for detection.
- Implemented a Bitcoin-style blockchain from scratch as a controlled simulation environment for AI experiments.

Skills

Retrieval & LLMs: RAG, GraphRAG, hybrid retrieval, reranking, embeddings, LLM agents, self-hosted LLM serving

NLP: Arabic NLP, entity resolution, text classification, transformer fine-tuning, speech-to-text, OCR

Data & graphs: Knowledge graphs, graph databases, vector databases, PostgreSQL, MongoDB, message queues

Engineering: Python, TypeScript, Go, JavaScript, Docker, microservices, React, offline/air-gapped deployment

ML & security: Supervised/unsupervised learning, anomaly detection, cryptography, database security

Education & Languages

B.Sc. Information Technology, Syrian Private University
2019 – 2025

Languages: Arabic (native), English (professional)