# Omar Khaled

## Artificial Intelligence Engineer

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## Profile

Artificial Intelligence Engineer with 3+ years of experience at the intersection of research and development. Skilled in LLM fine-tuning, reinforcement learning, RAG systems, voice AI agents, and AI automation. Hands-on contributions include improving reasoning accuracy, optimizing efficiency, and deploying enterprise-ready solutions such as real-time conversational agents, automation platforms, and scalable retrieval systems. Passionate about roles that combine research exploration with practical engineering to advance impactful AI innovations.

## Education

**Benha University**    Sep 2019 – Jun 2024
*Bachelor of Computer Engineering*    Egypt
- **Final grade:** 82.29% (Very Good with Honours)
- **Graduation project Grade:** A+

## Professional Experience

**AICOM**    Oct 2024 – Sep 2025
*Artificial Intelligence Engineer*    Riyadh, Saudi Arabia
- Engineered an enterprise RAG system using OpenAI, Qdrant, and FastAPI, reducing response times from 30s to <3s for 100+ concurrent users.
- Architected a document processing pipeline for PDF/CSV/Excel, improving Arabic document QA accuracy by 50% via SQL extraction and query optimization.
- Implemented caching and similarity search optimizations, achieving <250ms retrieval latency for frequent queries.

**Epsilon AI**    Jun 2024 – Nov 2024
*Machine Learning Engineer*    Cairo, Egypt
- Trained 100+ students in AI/ML technologies including Python, Machine Learning, and Deep Learning, achieving 95% satisfaction.
- Authored hands-on curriculum and labs for for Machine Learning and Deep Learning, directly contributing to student project success.

**Illuminate AI**    Dec 2022 – Jul 2023
*Machine Learning Engineer*
- **Mentored** international cohorts (Jordan, Palestine, Algeria, Morocco, Ukraine), delivering a project-based ML curriculum and **1:1 coaching** to **10+ students.**•
- **Designed**, trained, and deployed **5+ client-facing ML solutions** (data preprocessing, feature engineering, model training, evaluation, deployment), delivering production-ready model files (.h5, .pkl) with scikit-learn, TensorFlow, Keras, and PyTorch.

## Projects

**Arabic Voice AI Agent**
*Python, FastAPI, Whisper, Nile-Chat-4B, SpeechT5, RAG*
- **Built** a real-time Arabic voice AI agent by integrating speech-to-text (Whisper-large-v3), a RAG-augmented LLM (Nile-Chat-4B), and text-to-speech (SpeechT5).
- **Optimized** the pipeline with Silero-VAD and a scalable FastAPI backend, cutting average response time from **7–12s to under 3s**, enabling fluent real-time Arabic conversational AI.

### Intelligent ODOO CRM Automation
*Python, GPT-4o-mini, Playwright, Function Calling*
- **Architected** an AI automation system for ODOO CRM using GPT-4o-mini with function calling to parse natural language and execute key operations (create, update, delete opportunities, manage stages).
- **Automated** browser workflows via Playwright to handle dynamic forms and data loading, cutting manual CRM task time by **85%** and enabling record management through simple text prompts.

### AI-Powered Hiring Automation System
*Python, FastAPI, OpenAI API, PostgreSQL, Qdrant, n8n, VAPI*
- **Automated** the hiring pipeline by generating AI-driven job descriptions, scoring CVs via vector similarity (Qdrant), and orchestrating personalized email workflows with n8n, PostgreSQL, and FastAPI.
- **Integrated** a voice interview agent using VAPI and OpenAI for dynamic candidate evaluation, cutting recruiter workload by **70%** and improving matching accuracy with AI-assisted scheduling and offer generation.

### Intelligent Real Estate Chat Agent
*Python, FastAPI, OpenAI API, PostgreSQL, Qdrant, n8n, Telegram API*
- **Developed** an AI real estate agent that indexes property listings (PostgreSQL, Qdrant) for semantic search and delivers personalized recommendations via Telegram and web dashboards using OpenAI NLP.
- **Automated** customer follow-ups and agent routing with n8n, cutting missed inquiries to zero and boosting inquiry-to-showing conversions by **40%** through real-time engagement.

### Reasoning Fine-tuning of Gemma 3 with GRPO
*Enhancing Mathematical Reasoning in Gemma 3 via GRPO (Independent Study)*
- Implemented GRPO reinforcement learning to enhance Gemma 3's mathematical reasoning on GSM8K dataset using LoRA for efficiency.
- Designed custom reward functions for logical coherence, improving step-by-step reasoning accuracy by 22% over baseline supervised fine-tuning.
- Reduced GPU memory usage by 30% via gradient checkpointing, enabling cost-effective experimentation on limited hardware.

## Technical Skills

**AI/ML frameworks:** TensorFlow, PyTorch, PyTorch Lightning, Timm, Scikit-Learn, Numpy, Pandas, HuggingFace Transformers

**NLP/LLM frameworks:** NLTK, spaCy, Haystack, LlamaIndex, Langchain, vLLM, CrewAI, MCP (Model Context Protocol)

**MLOps & Infrastructure:** Docker, Kubernetes, Git/GitHub, AWS, Kafka, LangSmith, Weights & Biases

**Model Optimization:** ONNX Runtime, Quantization, Pruning, Knowledge Distillation

**Databases:** MySQL, PostgreSQL, MongoDB, Weaviate, DeepLake, PGVector, Qdrant, FAISS, ChromaDB

## Languages

**Arabic**  ● ● ● ● ●
Native

**English**  ● ● ● ● ○
IELTS: 7.0

**German**  ● ○ ○ ○ ○