Ziyad Fouda

AI Engineer | Computer Engineering Graduate

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SUMMARY

AI Engineer and Computer Engineering graduate with hands-on experience in machine learning, deep learning, Generative AI, and LLM application development. Experienced in building AI-powered applications and agentic workflows using Python, LangChain, LangGraph, Azure OpenAI, and RAG. Seeking an entry-level AI Engineering opportunity to build and deploy scalable AI solutions for real-world problems.

EDUCATION

Computer and Control Systems Engineering — June 2026
Mansoura University — GPA: 3.7/4.0

SKILLS

Languages & Tools
- Python
- JavaScript
- SQL
- Docker

Frameworks/Libraries
- scikit-learn
- pyTorch
- Langchain
- LangGraph
- OpenAI SDK

Soft Skills
- Creativity
- Problem-Solving
- Time Management

PROFESSIONAL EXPERIENCE

AI Engineer Intern — 09/2026 – present
Zawolf — Mansoura, Egypt
- Explore AI integration opportunities across agriculture, manufacturing, real estate, and e-commerce.
- Contribute to developing AI-powered solutions tailored to industry-specific problems and business needs.

AI & Large Language Models Intern — 12/2025 – 02/2026
Tips Hindawi — remote
- Developed AI-powered applications including chatbots and intelligent assistants using LLMs and prompt engineering techniques.
- Implemented RAG pipelines using embeddings, LangChain, and vector databases to enable context-aware responses from external knowledge.
- Experimented with Mistral and LLM fine-tuning fundamentals, applying model optimization techniques to practical AI use cases.

AI & Data Science - Microsoft Machine Learning Engineer Intern — 06/2025 – 12/2025
Digital Egypt Pioneers Program — remote
- Applied machine learning algorithms for regression, classification, clustering, dimensionality reduction, and model evaluation using real-world datasets.
- Implemented deep learning models covering neural networks, optimization techniques, CNNs, and transfer learning for computer vision tasks.

AI Internship Trainee — 01/2025 – 02/2025
National Telecommunication Institute — Mansoura, Egypt
- **Applied 4 core machine learning techniques**—Regression, Classification, Clustering, and PCA—for supervised and unsupervised learning tasks.
- **Implemented foundational deep learning and computer vision concepts**, including Neural Networks, optimization techniques, CNNs, and Transfer Learning.
- **Prepared and analyzed structured and image datasets** through data cleaning, preprocessing, visualization, and image preprocessing to support AI model development

CERTIFICATES

AI Engineering Specialization – Scrimba
Machine Learning Specialization – deeplearning.AI
Python Data Association – DataCamp
LLM applications with prompt engineering – NVIDIA
SQL for Data Science – UCDAVIS
Agentic AI with LangChain and LangGraph – IBM

PROJECTS

GenLearn

AI-powered learning platform that converts user documents into structured courses, lecture videos, quizzes, and interactive AI assistance.

- Engineered a 4-stage AI generation pipeline using LangChain and Azure AI Foundry to transform user documents into structured courses, lecture content, and video-ready materials.
- Implemented multi-format document processing for PDF, DOCX, PPTX, and images using Azure Content Understanding for OCR, layout analysis, figure detection, and text extraction.
- Developed automated lecture and assessment generation, producing narration scripts, 8-question lecture quizzes, and 3-question section quizzes per lecture with multiple difficulty levels.
- Integrated Azure Text-to-Speech, video rendering, and RAG-based chatbot capabilities, enabling narrated course videos and grounded Q&A over generated course content.

Research Agent with LangGraph

Agentic Research Workflow | LangGraph | LangChain | Azure OpenAI | Tavily

- Engineered an agentic research workflow with LangGraph that decomposes topics into research plans, generates drafts, and performs multi-stage LLM evaluation.
- Implemented a Planner - Writer - Reviewer workflow with conditional routing, allowing the reviewer to send drafts back to the writer for iterative improvement.
- Integrated Tavily as a web search tool for the research writer and Azure OpenAI for planning, content generation, and structured review.
- Designed a typed shared state to manage research plans, drafts, review feedback, retry attempts, and workflow control across LangGraph nodes

PopChoice

RAG-based recommendation application using embeddings and Large Language Models

- Delivered a production-grade movie recommendation system that suggests personalized movies based on users' preferences and motivations.
- Implemented Retrieval-Augmented Generation (RAG) by embedding user inputs and matching them against a vector database of movie embeddings stored in Supabase.
- Built and deployed the backend using Cloudflare Workers to provide scalable, low latency recommendations.
- Designed and hosted a responsive frontend using HTML, CSS, JavaScript, and GitHub Pages

Study Tracker App

Full-Stack Web Application | FastAPI | PostgreSQL | Docker

- Developed a full-stack study tracking application for recording study sessions, organizing users, and analyzing study-time statistics.
- Built a RESTful backend with FastAPI, Pydantic, and psycopg2, including user management, study-session tracking, date-range queries, and statistics endpoints.
- Designed and integrated a PostgreSQL database with relational constraints, initialization scripts, sample data, and persistent Docker volumes.
- Containerized the Frontend, Backend, and PostgreSQL services using Docker Compose with service health checks and inter-service networking.