

MOSTAFA GAMAL

+201156899934 ◇ Cairo, Egypt

mostafa.gamal2002@gmail.com ◇ [linkedin.com/Mostafa-Gamal](https://www.linkedin.com/Mostafa-Gamal) ◇ github.com/Mostafa-Gamal

Data Scientist

PROFESSIONAL SUMMARY

Data Scientist with 2+ years of production experience in machine learning, NLP, and generative AI, specializing in LLM-powered chatbots, Retrieval-Augmented Generation (RAG) systems, and end-to-end model deployment. Skilled in feature engineering, statistical analysis, and MLOps pipelines. Proven track record building and delivering AI solutions at scale across Egypt, UAE, and KSA, working cross-functionally to identify business requirements and design analytical approaches that drive measurable impact. Passionate about emerging AI technologies, prompt engineering, and data-driven decision-making in Agile environments.

EDUCATION

BSc of Computer Science, Helwan University

2024

Grade: Excellent with honors degree with GPA **3.65**.

EXPERIENCE

Data Scientist L2

Jan 2026 - Present

Paymob

Cairo, Egypt

- Architected and launched a multi-region AI chatbot on the Paymob platform across Egypt, UAE, and KSA, enabling real-time merchant account actions, performance benchmarking, and integration support — deployed at scale across thousands of active merchants.
- Engineered and deployed an OCR pipeline for automated extraction and verification of legal documents (commercial registrations, national IDs, tax cards), cutting merchant onboarding time by 75% — from 7–14 days to 2–3 days.
- Spearheading a Financial Advisor Copilot that applies statistical analysis to proactively detect failure patterns, triggering automated alerts and leveraging LLMs to generate evidence-backed justifications — targeting a 60%+ reduction in mean time to incident resolution.

Data Scientist

Oct 2024 - Dec 2025

Paymob

Cairo, Egypt

- Built and scaled a production AI chatbot serving merchants and internal support teams, applying A/B testing and iterative prompt engineering to achieve a 70% resolution rate — handling thousands of monthly interactions without human escalation
- Deployed an internal RAG-powered support chatbot that reduced ticket escalation time from 2–3 days to under 5 minutes, enabling support teams to resolve merchant issues in real time without developer intervention.
- Automated a weekly ETL pipeline in Python and Prefect to perform data analysis, aggregate chatbot KPIs across all channels, and deliver actionable KPI dashboards to business and engineering stakeholders — eliminating manual reporting and cutting effort by 5 hours/week.
- Built a CrewAI multi-agent semantic analysis layer to classify topics and detect sentiment across bot-merchant conversations at scale, achieving 87% topic detection accuracy and 89% enabling automated quality monitoring.

Data Scientist Intern

Jul 2024 - Sep 2024

Paymob

Cairo, Egypt

- Performed analysis and evaluation of embedding models and LLMs to optimize chatbot performance, focusing on balancing effectiveness and cost-efficiency.
- Developed and refined prompts for LLMs to enhance response quality, applying practical knowledge of natural language processing techniques

- Conducted research on AI agents, LLMs, RAG, and CI/CD, presenting findings to the teams with learning and gaining experience with AWS foundations

NLP Engineer Intern
OMOTO.ai

Feb 2024 - Jun 2024
Cairo, Egypt

- Developed NLP models for text processing and analysis, contributing to projects like RAG model, PDF-mining, and fine-tuning LLM.
- Created Arabic datasets for fine-tuning and langchain applications, enhancing model performance in the Arabic language context.

Machine Learning Contributor
Unify.ai

Jan 2024 - Mar 2024
London, England

- Contributed to the Ivy open-source framework, enhancing interoperability between different ML frameworks.

SKILLS

Programming Languages: Python, SQL, PostgreSQL, Redis

NLP: Transformers, LangChain, RAG, Prompt Engineering, Chatbots

Computer Vision: OpenCV, Image Recognition, Object Detection, Image Classification

Libraries and Frameworks: TensorFlow, Keras, PyTorch, Scikit-learn, NumPy, Pandas, Ragas, Giskard, Crewai, LangGraph, LlamaIndex, OpenAI Agents, MCP, Microsoft Agent framework

Data Visualization: Power BI, Matplotlib, Seaborn, plotly

Cloud Platforms: AWS, DBT, Airflow

Version Control: Git, GitHub

Platforms: Colab, Kaggle, Hugging Face, Grafana, Prometheus, Sentry, Freshchat , Loki, Tempo, RabbitMQ , Celery

PROJECTS

Mini-RAG

- Modular RAG System: Lightweight and scalable RAG architecture built with FastAPI, supporting document indexing, retrieval, and LLM-powered QA
- Multi-Provider Support: Easily integrates with OpenAI, Cohere, pgvector, and Qdrant for LLM and vector DB flexibility.
- Containerized & Monitorable: Ships with Docker Compose setup and built-in Prometheus + Grafana for easy deployment and monitoring
- API-First & Scalable: Offers RESTful endpoints and a modular design using provider factories for future expansion. ([Github](#))

Graduation Project: AI-Mufassir - Question Answering System on the Quran.

- Quran QA System: Built a Question Answering system using transformer models fine-tuned on a Quran-specific dataset.
- Accuracy Boost: Increased model accuracy from 65% to over 83% by integrating LangChain with a Retrieval-Augmented Generation (RAG) approach.
- User-Friendly: Delivered highly accurate and context-aware answers through an intuitive interface suitable for users of all technical levels.
- RAG-Powered: Leveraged LangChain and vector databases to enhance retrieval quality and ensure relevant Quranic passages are referenced. ([Github](#))

IELTS/TOEFL Coach Agent

- AI Exam Prep Assistant: Built an AI-powered educational tool for IELTS/TOEFL preparation using the CrewAI framework.

- Personalized Study Plans: Generates tailored 4-week study plans across Reading, Writing, Listening, and Speaking skills.
- Smart Feedback System: Evaluates writing samples with official band descriptors and gives grammar corrections with explanations.
- Interactive UI: Developed a Streamlit-based chat interface with downloadable chat history for user convenience. ([Github](#))

Face Recognition System.

- Facial Recognition System: Developed a facial recognition pipeline using Convolutional Neural Networks (CNNs).
- High Accuracy: Achieved 97% baseline accuracy, further improved to 98% with regularization techniques like dropout and data augmentation.
- Deep Learning Optimizations: Tuned hyperparameters and applied model refinement strategies for enhanced performance. ([Github](#))

CERTIFICATIONS

Machine Learning - [Coursera](#)

Neural Networks and Deep Learning - [Coursera](#)

Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization - [Coursera](#)

Structuring Machine Learning Projects - [Coursera](#)

Convolutional Neural Networks - [Coursera](#)

Deep Learning For Natural Language Processing - [Mahara-Tech](#)

Database Fundamentals - [Mahara-Tech](#)

Cleaning Data in Python - [DataCamp](#)

Data Manipulation with pandas - [DataCamp](#)

Exploratory Data Analysis in Python - [DataCamp](#)

Introduction to Data Visualization with Seaborn - [DataCamp](#)

Prompt Engineering - [YouTube](#)

Practical GenAI - [Coursatai](#)

AWS Certified Cloud Practitioner - [Udemy](#)

Docker Foundations Professional Certificate - [LinkedinLearning](#)

Introducing Generative AI with AWS - [Udacity](#)

MCP Course - [HuggingFace](#)

Practical Machine Learning for Data Scientists - [Udemy](#)

Mastering Chatbots with Botpress, Transformers, RAG & LLMs - [Udemy](#)

Generative AI: Learn about the next AI frontier & LLMs - [Udemy](#)

PUBLICATIONS

Aqrag: Advanced Quranic Retrieval-Augmented Generation For Low-Resource Question Answering [Springer](#) 2026