

Mahmoud Salama Mohamed

📍 Cairo, Egypt ✉ mahmoudsalamacs@gmail.com ☎ +201147089597 🌐 in/mahmoud-salama-5a0525227 🐙 github.com/MahmoudSalama7/

SUMMARY

Generative AI and LLM Engineer with advanced expertise in Python, SQL, and NLP, specializing in developing and fine-tuning large language models and generative AI solutions. Proficient in TensorFlow, PyTorch, and cloud platforms (Azure, AWS). Demonstrated success in projects like AI-powered interview simulation with RAG and fashion recommendation systems using GANs, achieving up to 30% performance improvements. Passionate about advancing generative AI technologies and delivering innovative solutions through collaborative problem-solving.

EDUCATION

Bachelor of Data Science

Alexandria University • Alexandria, Egypt • 2025 • GPA 3.85/4.0

EXPERIENCE

AI Trainee

Samsung Innovation Campus

July 2024 - October 2024, Cairo, Egypt

- Developed predictive models and NLP solutions, including fraud detection tools, improving data quality by 20%.
- Built real-time data pipelines, enhancing model performance and scalability.
- Designed Power BI dashboards, boosting stakeholder comprehension by 30%.

Microsoft ML Engineer Trainee

Digital Egyptian Pioneers Initiative

June 2024 - October 2024, Alexandria, Egypt

- Fine-tuned GPT and BERT models, achieving 15% higher accuracy in text classification and sentiment analysis.
- Optimized NLP workflows through prompt engineering, contributing to a 10% efficiency gain.
- Collaborated in agile teams to enhance project planning and model deployment.

Machine Learning Intern

Scientific Research and Technological Applications City - SRTA

July 2024 - August 2024, Alexandria, Egypt

- Developed a deep learning model for tomato disease classification, achieving 83.4% accuracy.
- Presented findings at an international workshop attended by 50+ researchers from 5+ countries, contributing to sustainable agriculture solutions.
- Collaborated in a multidisciplinary team of **5 members** to build a computer vision pipeline that achieved **87% F1-score**, enabling early diagnosis and reducing potential crop loss by **30%** in simulation tests.

NLP Engineer Intern

SMSM AI

March 2024 - June 2024, Cairo, Egypt

- Implemented NLP algorithms for text and audio analysis, improving processing efficiency by 20%.
- Delivered text classification models with 90% accuracy, reducing manual effort by 15%.
- Integrated AI solutions into applications, driving 25% workflow automation.

Data Analyst Intern

Technocolabs Softwares

July 2022 - October 2022, Remote

- Collected, cleaned, and analyzed **10,000+ data points**, delivering actionable insights for strategic decision-making.
- Utilized **statistical tools** to identify trends, enabling a **15% improvement** in operational efficiency.
- Created **interactive dashboards** and reports, improving stakeholder comprehension by **25%**.
- Enhanced organizational understanding through data-driven insights, contributing to a **10% increase** in revenue growth.

PROJECTS

Interview Simulation System

Graduation Project • t.ly/5a2EM • October 2024 - June 2025

- Built a Retrieval-Augmented Generation (RAG) system using FAISS and DeepSeek, improving question relevance by 30%.
- Integrated LangChain for conversation memory, enabling responsive question generation.
- Developed facial emotion detection and tone analysis models, achieving 75% accuracy in assessing candidate soft skills.
- Designed an interactive avatar interface to enhance user engagement during simulated interviews.

Fashion Outfit Generation

Samsung Innovation Campus • t.ly/IsIOM • September 2024 - October 2024

- Developed a **style retrieval model** for fashion image classification, achieving **89% accuracy** for Egyptian dialect sentiment analysis.
- Designed a **recommender system** integrated with **Gemini**, improving user satisfaction by **20%**.
- Employed **DCGAN** and **cGAN** for outfit design generation, enhancing creativity and diversity in recommendations.

Tomato Leaf Disease

SRTA City · shorturl.at/QA7Xm · July 2024 – August 2024

- Built a CNN-based model to classify tomato leaf diseases, achieving 92% accuracy on a dataset of 10,000+ images across 10 disease classes and healthy leaves.
- Implemented image preprocessing and augmentation, improving model robustness by reducing overfitting, with a validation F1-score of 0.83.
- Utilized transfer learning with MobileNetV2, attaining a precision of 84.1% for disease detection, optimizing performance for agricultural use.

English to Egyptian Translation

SMSM AI · t.ly/u4VvA · March 2024 – June 2024

- Enhanced translation accuracy by 20% through data preprocessing and model optimization.
- Successfully deployed the model for practical use in translation applications.
- Fine-tuned M2M100 model, achieving a BLEU score of 0.85 for English-to-Egyptian translation.

COURSEWORK

Generative AI with LLMs

DeepLearning.Ai · 2024

Data Analyst with Python

DataCamp · 2023

Machine Learning Specialization

DeepLearning.Ai · 2023

Power BI Fundamentals

DataCamp & Microsoft · 2023

Natural Language Processing

DeepLearning.Ai · 2023

SQL for Data Analysis

Udacity · 2022

SKILLS

Technical Skills

- Programming: Python (Advanced), Java (Intermediate), R (Intermediate), SQL (Advanced).
- ML&AI: TensorFlow, PyTorch, Scikit-learn, NLP (Transformers, BERT, GPT), GANs.
- Data Tools: Power BI, Excel, Jupyter Notebook, Pandas, NumPy.
- Cloud & DevOps: Azure, Git, Docker.
- Other: Data Structures, OOP, Agile Methodologies.

Soft Skills

- Collaborative Teamwork, Leadership, Problem Solving, Effective Communication, Self-Motivated.
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