





<div><div>Mahmoud Yahia Ahmed</div><div>AI & Machine Learning Engineer Generative AI, RAG Systems & Scalable ML Solutions</div><div><div><div><div></div></div><div>Cairo, Egypt</div></div><div><div><div></div></div><div>01284135879</div></div><div><div><div></div></div><div>mahmoudyahia372@gmail.com</div></div></div></div>				
Profiles	 MahmoudYahia	 MahmoudYahia	 MahmoudYahia	 MahmoudYahia
Summary	AI / Machine Learning Engineer with proven experience building and deploying production-grade ML and Generative AI systems across NLP, computer vision, and RAG-based architectures. Delivered scalable solutions used in real business environments, improving automation, decision-making, and operational efficiency through cloud-native AI systems on AWS and Azure.			
Experience	Advansys -ForteCloud [Oct 2023 - Present] Cairo,Egypt		Machine Learning Engineer	
	<ul style="list-style-type: none">Developed AI-powered solutions across NLP, computer vision, and Generative AI, delivering scalable applications in HR tech and enterprise automation.Designed and deployed end-to-end ML pipelines, from data preprocessing to production-level deployment using AWS services (Bedrock, OpenSearch, Lambda, S3, DynamoDB).Spearheaded the creation of a document-based chatbot using Retrieval-Augmented Generation (RAG), integrated with Microsoft Teams to enhance internal knowledge management.Developed image compliance systems for passport photo validation, incorporating blur detection, pixelation checks, face alignment, and white background verification using OpenCV, Dlib, and Mediapipe.			
	Route Training Center [July 2023 - Jan 2025] Head of Ai & Instructor			
	<ul style="list-style-type: none">Designed and led a market-aligned AI curriculum focused on applied ML, NLP, computer vision, and LLM-based systems.Mentored and supervised 150+ students and junior engineers, enabling delivery of real-world AI projects and improving job-readiness.Guided capstone projects emphasizing problem formulation, model deployment, and business impact.			
	Microsoft [Sep 2022 - Feb 2023] Cairo, Egypt		Applied NLP	
	<ul style="list-style-type: none">Developed a Named Entity Recognition (NER) system for Egyptian Arabic dialects using deep learning.Built data labeling, augmentation, and training pipelines using Hugging Face Transformers and spaCy.Improved entity extraction accuracy from noisy transcriptions using phonetic similarity and post-processing heuristics.			
	Up Work [Feb 2021 - Jan 2022]		Freelancer	
	<ul style="list-style-type: none">Delivered over 10 successful ML projects in computer vision, time-series forecasting, and NLP for global clients.Built custom image classification models, OCR pipelines, and sentiment analysis systems tailored to client business needs.Collaborated across time zones to deploy models using Flask, FastAPI, and Docker on cloud platforms (AWS, GCP).			
Projects	Passport & Government ID Image Validation System			
	High-Scale AI System ~15K Requests/Day			
	<ul style="list-style-type: none">Built a computer vision system handling ~15K requests/day to validate passport and ID images against ICAO standards.Automated checks for face alignment, white background, shadows, sharpness, pixelation, and cropping.Deployed on AWS EC2 using MediaPipe and OpenCV.			
	AWS EC2, Streamlit, Mediapipe			
	Complaint Analysis & Sentiment Intelligence Platform			
	<ul style="list-style-type: none">Engineered an end-to-end system to classify, cluster, and summarize customer complaints at scale.Applied AWS Comprehend for sentiment analysis and AWS Bedrock for generative summaries.Delivered actionable insights for customer support teams.			
	Streamlit, AWS Comprehend, AWS BedRock			
	Enterprise RAG Chatbot (HR & Policy Assistant)			
	<ul style="list-style-type: none">Developed a domain-specific RAG chatbot using AWS Bedrock and OpenSearch.Enabled semantic document retrieval and question answering inside Microsoft Teams.Improved employee self-service and reduced HR operational load.			
	AWS Bedrock, AWS OpenSearch, Microsoft Teams Toolkit			
	NER on contemporary spoken Egyptian Arabic			
	<ul style="list-style-type: none">Built and fine-tuned BERT-based NER models for noisy spoken Arabic data.Contributed to NLP resources for underrepresented dialects.Used spaCy, Stanza, and transformer-based architectures.			
	NER, Spacy, Stanza, NLP, BERT, Pretrained models			
Education	Ottawa University of Canada [Feb 2022 - Feb 2023] Professional Master of Electrical and Computer Engineering Grade : 9.7		AlAhram Canadian University [Sep 2016 - July 2020] B.Sc. in Computer Science Grade : 3.27	
Certifications	Azure AI Engineer Associate Microsoft	May 2025	AWS Certified AI Practitioner AWS	July 2025
	Azure Data Scientist Associate Microsoft	April 2025	Artificial Intelligence Analyst IBM	April 2022
	Big Data IBM	March 2022	Predictive Analytics Modeler IBM	Feb 2022
	Business Acumen Dale Carnegie	July 2022		
Skills	Programming Java, Python, SQL, C, C++	Data Science Machine/Deep learning, Sklearn, Keras, TF, Data Visualization, Data Analysis, Pandas, Numpy, Numba, Streamlit, Flask		Software Engineering DS, Algorithm, Problem solving, SW design, SQL, Sprints
	Hands On AWS Services, GCP, Docker, Azure Machine Learning, GitHub, Deployments, Developing	AI/ML Frameworks LangChain, LangGraph, Autogen		Cloud & DevOps AWS (Bedrock, ECS), Docker, CI/CD Pipelines, Cloud Deployment & Management
	LLM			
	Model Evaluation, Fine-tuning (LoRA, QLoRA, PEFT), Model Optimization (Quantization, Distillation), Data Scraping, Data Annotation, Named Entity Recognition (NER), Text Analysis, Computer Vision, Conversational AI Chatbots, Custom AI Tools, Agent-based Automation, RAG with Vector Databases, Vector Databases (Pinecone, ObjectBox, ChromaDB, Weaviate)			
Languages	English		Arabic	