

OMAR SALAMA

AI Engineer

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PROFESSIONAL SUMMARY

Computer Science & Artificial Intelligence graduate (dual degree, Ain Shams University & University of East London) passionate about translating cutting-edge AI research into production-ready solutions. Experienced in developing end-to-end machine learning, computer vision, and NLP applications with a focus on real-time inference, deployment, and performance optimization. As part of my graduation project, I engineered a **hybrid real-time epileptic seizure detection system** integrating Vision Transformers, Graph Neural Networks, ONNX Runtime, C++, and Python, delivering **96.69% AUROC, 90.18% F1-score, 37+ FPS**, and pre-clinical seizure alerts through a novel series-gating architecture. Built AI solutions spanning healthcare, medical imaging, autonomous systems, and NLP. Seeking an opportunity to contribute to impactful AI products as an **AI/ML Engineer, Computer Vision Engineer, or Applied AI Engineer**.

TECHNICAL SKILLS

Programming Languages

Python • C++ • Dart • SQL

Computer Vision & NLP

OpenCV • Image Segmentation • Object Detection • Pose Estimation
• Optical Flow • 3D Vision • Transformers • Gemini API

Software Development

Flutter • Next.js • Git • Linux • OOP • Data Structures & Algorithms

AI / Machine Learning

PyTorch • TensorFlow • Scikit-learn • Hugging Face Transformers

Data & Cloud

Pandas • NumPy • AWS (SageMaker, Lambda) • Data Preprocessing
• Streamlit

Soft Skills

Technical Leadership • Cross-functional Collaboration • Public Speaking • Problem Solving

EDUCATION

B.Sc. in Computer Science & Artificial Intelligence (Dual Degree)

09/2022 – 07/2026

Ain Shams University & University of East London • Cairo, Egypt • GPA: 3.3 / 4.0

WORK EXPERIENCE

AI & Automation Intern • Cultiv Bureau • Cairo, Egypt

07/2026 – Present

- Designed AI-powered workflow automations in n8n that embed LLMs into business logic for intent classification, conversation routing, and decision-making, integrated via REST/GraphQL APIs and webhooks with Bitrix24 CRM.
- Built Retrieval-Augmented Generation (RAG) pipelines — document chunking, embedding generation, vector similarity search, and context injection — to ground LLM responses in company knowledge and reduce hallucinations.
- Engineered and tuned prompts (system instructions, structured templates, conversation history limits) to maximize response quality while cutting token usage and API cost across production workflows.
- Automated Bitrix24 CRM operations (lead updates, agent assignment, priority scoring) driven by LLM intent analysis, and built AI-powered WhatsApp Cloud API chatbot workflows for context-aware customer support.
- Improved workflow reliability with API retry logic, JSON validation, and fallback handling, and migrated local tunneling from ngrok to Cloudflare Tunnel for stable, production-grade webhook endpoints.

Data Science Trainee • Digital Egypt Pioneers Initiative (DEPI) • Cairo, Egypt

07/2025 – 01/2026

- Completed an intensive, cohort-based training program covering Python, machine learning, deep learning, data visualization, and AI deployment workflows.
- Applied supervised and unsupervised learning techniques across end-to-end data science projects, collaborating with a cross-functional cohort to solve real-world problems.

Data Scientist Intern • Manipal Academy of Higher Education (MAHE) • Manipal, India

07/2025 – 09/2025

- Built and deployed an interactive news-summarization chatbot using the Google Gemini API with conversational, context-aware question generation.
- Co-authored a research paper under Prof. Ramakrishna on NLP-based text summarization techniques.

NLP Specialist / Operational Lead • Applai – Ain Shams University • Cairo, Egypt

10/2022 – 08/2025

- Progressed from Operational Specialist to Director of Operations to NLP Specialist, leading 12+ strategic meetings and securing 3 venue/partnership contracts.
- Designed and delivered a Deep Learning & NLP curriculum covering Transformers and TensorFlow to 50+ peer students.

IT Specialist • Dispute – Ain Shams University • Cairo, Egypt

10/2024 – 08/2025

- Managed DNS infrastructure and executed large-scale email automation campaigns, improving system reliability and streamlining communication pipelines organization-wide.

Path Planning Specialist • ASU Racing Team – Shell Eco-marathon • Cairo, Egypt

10/2024 – 07/2025

- Developed a path-planning system for an autonomous vehicle, implementing optimization algorithms from scratch for a competitive racing team.

GRADUATION PROJECT

Shifaa — AI-Based Patient Monitoring Platform

10/2025 – 07/2026

Ain Shams University

- Production-grade, privacy-first hospital monitoring platform that unifies a grounded medical AI assistant with three real-time detection systems (cardiac arrhythmia, patient falls, and epileptic seizures) behind a single role-aware interface — all running fully on-premises.
- Real-time seizure detection pipeline achieving **96.69% AUROC, 90.18% F1-score, and 37+ FPS**.

Technologies: PyTorch, OpenCV, ONNX Runtime, C++, Python, ViViT, Graph Neural Networks, OpenPose

[Repo](#) • [Demo](#) • [Paper](#)

PROJECTS

Fruit & Food Segmentation and Calorie Estimation — 1st Place, CV Course Competition

12/2025 – 01/2026

Ain Shams University

- Built an AI-powered food and fruit analysis platform integrating segmentation, classification, few-shot recognition, and calorie estimation. Developed an EfficientNet-B4 + DeepLabV3+ model achieving **97.69% Validation IoU**.

Technologies: PyTorch, OpenCV, Streamlit

[Repo](#) • [Live Demo](#)

Liver Tumor AI — Real-Time Detection & Segmentation

12/2025

DEPI Data Science Track

- Developed a PyTorch + U-Net liver tumor segmentation pipeline achieving **95% accuracy and 91.7% Dice score**.

Technologies: PyTorch, U-Net

[Repo](#) • [Live Demo](#)

ExoNet

10/2025

NASA Space Apps Challenge

- Built a residual MLP classifier for exoplanet detection with SHAP explainability, achieving **95.28% accuracy**.

[Repo](#)

Article Summarizer Chatbot

09/2025

MAHE — Prof. Ramakrishna

- Developed a conversational summarization and question-generation chatbot using Gemini 2.5 Flash API.

[Repo](#) • [Live Demo](#) • [Paper](#)

LEADERSHIP & VOLUNTEER EXPERIENCE

Head of Department • Resala Charity – Farz Masr El-Gdida • Cairo, Egypt

03/2023 – Present

- **Directed** 50+ volunteers and organized 10+ charity events, including the El-Adha Clothing Campaign 2023, delivering aid to families in need across 30+ social initiatives.

Exchange Administrator • IAESTE – Cairo University • Cairo, Egypt

09/2025 – 04/2026

- **Managed** the international internship exchange program for the 2025–2026 cycle, coordinating student placements across multiple countries.

Finance & B2B Specialist • AIESEC – Ain Shams University • Cairo, Egypt

01/2025 – 11/2025

- **Conducted** market research and closed 2 strategic partnership deals while optimizing financial workflows across multiple university entities.

CERTIFICATIONS & AWARDS

AWS Certified Machine Learning – Specialty

Amazon Web Services, 05/2024

AI Professional Training (120h)

National Telecommunications Institute (NTI), 11/2023

ICPC ECPC Qualification

ICPC, 06/2023

HCIA-AI V3.5

Huawei, 11/2023

Computer Vision Professional Training

ApplAi, 07/2023

NASA Space Apps Challenge 2025 — Participant

NASA, 09/2025

ACHIEVEMENTS & ACTIVITIES

- Selected to present the Shifaa AI-Based Patient Monitoring System at the FCIS Ain Shams University Graduation Project Expo, showcasing the project to faculty, industry professionals, and recruiters.
- 1st Place, Computer Vision Course Competition — Ain Shams University (Food/Fruit Recognition & Calorie Estimation), 2025–2026.
- Represented the Ain Shams University FCIS team as a finalist at ArabCAB 2026.

LANGUAGES

Arabic (Native) English (C1 Advanced — EF SET)