Khodor El-Rifaii

AI Engineer

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SUMMARY

AI Engineer with a B.S. in Computer Science (LIU, 2026) and hands-on work in computer vision, natural language processing (NLP), and reinforcement learning. Built a real-time sign language recognizer with 99.13% test accuracy and a research paper, trained multi-agent PPO policies for 45M steps, and deployed two AI web apps that are live today. Currently an AI Intern at ELITE.Org; also builds Flutter mobile apps and full-stack web projects.

TECHNICAL SKILLS

Programming Languages: Python, SQL, C, Dart

Machine Learning & AI: Deep Learning, Computer Vision, Natural Language Processing (NLP), Reinforcement Learning (PPO), Transformers, Large Language Models (LLMs), AI Agents, Prompt Engineering, CNNs, Clustering, Exploratory Data Analysis (EDA), Feature Engineering

Frameworks & Libraries: PyTorch, Hugging Face Transformers, scikit-learn, OpenCV, MediaPipe, Unity ML-Agents, pandas, NumPy, Matplotlib, Streamlit, FastAPI, Flutter

Tools & Platforms: Git, GitHub, Docker, Jupyter, Kaggle, Supabase (PostgreSQL), Vercel, Cloudflare Workers, WebSockets, Android Studio

Spoken Languages: Arabic (Native), English (Fluent)

EXPERIENCE

AI Intern | ELITE.Org (Remote) Nov 2026 - Present

- Building a customer segmentation pipeline on 540K+ online retail transactions: cleaning missing values and duplicates, running exploratory data analysis, and engineering customer-level features for clustering.

Freelance Developer | Self-Employed (Remote) May 2025 - Present

- Built a bilingual English/Arabic business website with a custom admin panel on a Supabase (PostgreSQL) database.
- Set up automatic redeployment whenever content changes, so the owner can update the site without a developer.
- Improved Google search visibility with structured data, prerendered pages, and an XML sitemap.

Mobile Developer Intern | XpertBot (Beirut, Lebanon) Nov 2023 - May 2024

- Built and tested screens and features for a production Flutter (Dart) app in Android Studio.
- Fixed bugs, improved app performance and responsiveness, and collaborated with the team through Git.

PROJECTS

Real-Time ASL Recognition | Python, CNN, MediaPipe, OpenCV Research Paper

- Trained a convolutional neural network (CNN) that recognizes American Sign Language from a live webcam feed with 99.13% test accuracy, aimed at easier communication for deaf and hard-of-hearing people.
- Built the real-time pipeline with MediaPipe hand landmarks and OpenCV video capture, adding confidence thresholds and temporal smoothing so predictions stay stable. Published the work as a research paper on Academia.edu.

Star Rebellion | Unity ML-Agents, PyTorch, Reinforcement Learning

- Team project: trained shooter agents to aim, take cover, and survive from rewards alone, with no scripted behavior.
- Trained 4 agents in parallel for ~45M steps on one laptop GPU, tuning PPO hyperparameters (learning rate, beta, epsilon, lambda).
- Fixed one-sided matches by redesigning rewards, penalties, and agent stats until both teams were even.

Bot or Not | Python, BERT, Transformers, NLP botornot7.vercel.app

- Fine-tuned a BERT-based transformer to tell AI-generated text from human writing; deployed as a public web app.

MedGuide | Python, Machine Learning medguidex.vercel.app

- Deployed a web app that maps user-reported symptoms to likely conditions as a first check before a doctor.

NFL Big Data Bowl 2027 (Kaggle) | Python, pandas, Data Analysis GitHub

- Tested whether NFL Combine sensor speed predicts how fast rookie receivers run routes in real games; adding it cut prediction error by 12% (0.408 to 0.358 yd/s) across 54 players.

EDUCATION

B.S. in Computer Science | Lebanese International University (LIU), Beirut, Lebanon | GPA: 3.09/4.0 Oct 2023 - Aug 2026

Piscine (Intensive C Programming Bootcamp) | 42 Beirut, Beirut, Lebanon Feb 2023 - Mar 2023

CERTIFICATIONS

Agentic AI in Practice, American University of Beirut (2026); Build a Machine Learning Model and Machine Learning: Introduction with Regression, Codecademy (2025)