Layth Ayache

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Education

Rafik Hariri University Meshrif,Lebanon
BE, Computer and Communication Engineering.   (3.2/4) May, 2025
Relevant Coursework: Artificial Intellingence, Machine Learning, Programming

Ecole Des Filles De La Charité – Clémenceau Beirut,Lebanon
General Science

Experience

ORGANIZER | MEA Beirut, Lebanon

AI developer March-2025 -- present
- Developed and deployed AI models for predictive financial analytics, enhancing accuracy of forecasts and anomaly detection in real-time transaction data
- Automated financial reporting using NLP techniques to extract insights from unstructured data and generate summary documents.
- Implemented OCR pipelines for bill and receipt processing, enabling structured data extraction from scanned financial documents
- Built interactive dashboards using React.js and Chart.js to visualize financial trends, KPIs, and model outputs in real time.

OGERO Beirut, Lebanon (Hybrid)
Data Analyst and Web Developer Intern December 2023 – March 2024
- Developed AI-driven predictive analytics models using TensorFlow, improving forecasting accuracy on telecom usage data.
- Engineered interactive dashboards using React.js and JavaScript for real-time visualization of network and user metrics.
- Conducted data preprocessing, feature extraction, and model tuning on large-scale datasets to optimize ML performance.
- Collaborated with cross-functional teams to integrate AI insights into decision-making workflows, enhancing operational efficiency.

Leadership & Activities

Rafik Hariri University
President, AI Club January 2023 – April 2024
- Organized speaker events and hackathons, fostering collaboration between students and industry experts in AI research.
- Led AI-focused workshops and projects on computer vision, NLP, and neural networks for a student community of 100+ members.

Skills & Interests

Technical: Programming Languages (Python, C++); AI & Data Analysis (TensorFlow, OpenCV, Scikit-learn, Pandas, YOLO); Tools (Git, Linux)
Language: Arabic (native), French (B2), English (LCCI level 5)
Laboratory: Embedded Systems Design; Electronics (circuit assembly & PCB prototyping); MATLAB for data processing; Python programming for data analysis
Interests: Developing computer vision & deep-learning models (e.g., sign-language recognition, medical image

Projects

Omnisign – Real-Time LSL Sign Language Translator
Developed a mobile and desktop application to translate Lebanese Sign Language (LSL) into Arabic or English text using TensorFlow and OpenCV. Integrated gesture detection, CNN-based classification, and real-time video processing to enhance accessibility for the hearing impaired.

Omnisign Dataset – LSL Gesture Collection
Curated and annotated a proprietary dataset of over 40,000 LSL gesture samples collected from diverse regions across Lebanon. Ensured balanced class representation and high-quality labeling, establishing a critical resource for local sign language research and training models.

Breast Cancer Detection Model
Created a supervised ML model with TensorFlow to predict breast cancer from diagnostic data. Applied preprocessing, feature engineering, and model tuning to optimize classification accuracy and reliability.

Sign Language Translator (ASL)
Designed a gesture recognition application using TensorFlow and OpenCV. Trained a Convolutional Neural Network (CNN) to interpret American Sign Language gestures in real time, converting them into readable text.

Document OCR for Financial Bills
Built an AI-powered OCR pipeline for Organizer MEA to extract structured data from scanned bills and receipts. Integrated with NLP-based reporting tools to automate financial document processing and improve data accuracy.

Anomaly Detection in Network Traffic
Engineered an AI system to monitor live network traffic and detect anomalies such as unexpected bandwidth surges or unauthorized access. Used unsupervised learning techniques and time-series analysis to identify deviations from normal patterns in real time.

Real-Time Data Visualization Tool
Built a dynamic data visualization web application using React.js, TensorFlow, and JavaScript. Enabled users to interactively analyze live data trends, improving accessibility to actionable insights.

Image Processing & Color Detection
Developed real-time vision tools using OpenCV, including color detection, object tracking, and edge detection. Strengthened core computer vision skills through live video feed experimentation.

Scalable Image Classification Service with AWS
Built a cloud-native image classification service that scales dynamically with demand. Leveraged Amazon EC2 for compute, S3 for storage, Lambda for serverless image processing, SQS for async task handling, and CloudWatch for performance monitoring and alerting.

AI-Powered Environmental Monitoring System
Developed a system to detect pollution via computer vision and sensor data. Used AWS Rekognition for image analysis, SageMaker for training, IoT Core for real-time data ingestion, and QuickSight for reporting and analytics.

Volunteering

Civil Defense   **Beirut,Lebanon**
Emergency Medical Technician, Music   December 2023 - Present

Zaka Ambassador   **Meshref,Lebanon**
Student ambassador at Rafik Hariri University   September 2024 - May 2025