Elias Dargham

Software Engineer | AI / ML / DL Engineer | Masters in Artificial Intelligence Student

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Professional Summary

Passionate software engineer with expertise in machine learning, deep learning, and computer vision. Known for quickly learning concepts and efficiently connecting ideas to solve complex problems. Experienced in developing large-scale integrations, neural network classifiers, and detection models with a focus on contributing meaningfully to the field of computing.

Experience

AI Engineer | Systeminence S.A.L. | Feb 2025 – Present

- Developed YOLO models to detect road-safety violations, including seatbelt, helmet and mobile usage detection, speed detection, parking and overtaking violations
- Developed YOLO models to detect human poses and tracked relevant keypoints to detect raised hands in school environments
- Oversaw the deployment of computer vision models on edge devices
- Worked on Detection Models, Scene Text Recognition Models and Object tracking algorithms for Vehicle-License Plate Recognition software

Junior Software Engineer | Systeminence Offshore S.A.L. | May 2021 – Jan 2025

- Developed and optimized features for large-scale integrations with video management systems
- Developed features for distributed systems that rely on Windows Management Instrumentation (WMI) extensions
- Developed services that bridge data between multiple integrations
- Worked on websites to integrate a single software with multiple video management systems
- Developed a media player that streams from multiple sources of input and provides real-time updates from a specified data source
- Developed Neural Network Classifiers that classify different License Plate templates of a certain region
- Worked on Detection Models, Scene Text Recognition Models and Object tracking algorithms for Vehicle-License Plate Recognition software

Software Development Intern | SABIS International School | Jul – Aug 2019

- Assisted in developing new features, helped with testing and fixing bugs in internal projects using Ionic Framework

System Administrator | Lebanese American University Communication Arts Creative Lab | Nov 2017 – Jun 2020

- Set up iMacs and maintained the necessary software used by Students of the faculty of Communication Arts

Education

Masters in Artificial Intelligence | École Supérieure d'Ingénieurs de Beyrouth à l'Université Saint-Joseph | Aug 2023 – Dec 2024

Grade: 16.73/20 (~3.7+/4.0 GPA)

Bachelor of Science in Computer Science | Lebanese American University | Aug 2016 – Jun 2021

Technical Skills

Machine Learning & AI: Keras, TensorFlow, PyTorch, MLFlow, Large Language Models, Computer Vision
Programming Languages: Python, C#, C/C++ 17, TypeScript, JavaScript
Frameworks & Technologies: .NET Core/Framework, Node.js, Express, Flutter, OpenCV 4.x
Databases: Microsoft SQL Server, PostgreSQL
Tools & Platforms: Docker, Ollama, GNU/Linux, Git, Google Earth Engine, NASA Giovanni, LaTeX
Specializations: Backend Development, Desktop Development, Remote Sensing, Machine Learning, Deep Learning

Languages

Arabic: Native | **English:** Fluent | **French:** Professional

Professional Certifications

- **TensorFlow: Advanced Techniques** | Coursera – Deeplearning.AI | May 2024
- **DeepLearning.AI TensorFlow Developer** | Coursera – Deeplearning.AI | Mar 2021
- **Deep Learning Specialization** | Coursera – Deeplearning.AI | Dec 2020

Selected Projects

Master's Thesis: Rainfall Data Analysis | Jan 2025 – Jul 2025

Technologies: Python, LaTeX, PyTorch, Google Earth Engine, NASA Giovanni, Scikit-Learn
Extracted daily and half-hourly rainfall data from the GPM-IMERG satellite for Beirut, Lebanon. Disaggregated the time-series into finer resolutions and trained SVM, ANN, TCN and TCN with Sparse Attention to generate Intensity-Duration-Frequency Curves. Achieved 46.2% improvement over statistical methods. The work is currently awaiting publication.

Project Hackerman | Dec 2024

Technologies: Ollama, Gemini, OpenAI Python Library, Nmap
Exploited GPT, Gemini, and specialized Ollama models to interpret Nmap scan results and generate a user-friendly report, as well as suggesting recommended scans based on the current scan results.

End-to-End Training and Inference Pipeline | Nov 2024

Technologies: MLFlow, Python, PyPoetry
Developed a training and inference pipeline for YOLO models to train models on labelled data that includes experiment tracking, continuous model serving and software CI/CD pipelines with docker and GitHub workflows.

Marketing Campaign Planner | Oct 2024

Technologies: OpenAI Python Library, Streamlit, Unsupervised Learning
Developed the backend for an LLM agent using OpenAI to generate a brand identity, logo, and marketing campaign based on a detailed business idea and data driven insights from current market trends.

Project HawkEYE | Mar – Apr 2024

Technologies: Python, PyTorch, Torchserve, Docker, OpenCV
Built a serving pipeline that takes tracked objects from a YOLOv8/Deepsort pipeline and sends the detected objects to a server hosting an ExpansionNetV2 instance for image captioning.

Shopply Mobile App | May – Aug 2023

Technologies: Flutter v3, TypeScript, Node.js, Express.js, PostgreSQL
Shopply is a mobile platform that aims to connect aspiring entrepreneurs, vendors and suppliers directly to their target clients. Its intuitive UI is developed using Flutter v3 to target iOS and Android OS platforms.

Enron Email Database Investigation | Nov – Dec 2023

Technologies: Python, Neo4j
Made investigations into the Enron Email Database by loading it into Neo4j. Using the appropriate queries, multiple insights were collected that unravel a deep network of fraudulent activity across the different organization departments.

Credit Card Churn Prediction | Dec 2023

Technologies: Python, Scikit-Learn, NumPy, Pandas
Trained a machine learning model to predict when a credit card client may bail on their payments and cancel their cards using multiple relevant features for each client.

Neural Style Transfer Engine | Jan – Feb 2022, Apr 2024

Technologies: Python, TensorFlow, Keras, Tensorboard
Developed a neural network that takes two images, one for the content and one for the style and applies the style of the second image to content of the first.

PollBooth Elections Polling | May – Dec 2021

Technologies: C#, .NET Core 3.1, Microsoft SQL Server, Windows Services using Topshelf
PollBooth is a C# Desktop Application that takes the demographic and historic information of the population in a certain region and uses this information to find the leading candidates of that region the general elections.