

NISREEN HAMZE

AI/ML Engineer

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Career Objective

Master's graduate in Advanced Artificial Intelligence and Generative Systems with a strong academic background, highlighted by achieving the highest thesis grade (83/100) in a 6-month research project at Thales Group focused on real-time person detection in crowded scenes. Seeking an AI/ML Engineer position to contribute to the development of AI-powered applications. Brings a solid foundation in machine learning and deep learning, with hands-on experience in LLM-based applications and RAG systems, including chatbot development and AI model integration, along with a collaborative, problem-solving mindset and a strong ability to continuously learn and adapt in fast-paced environments.

Education

Lebanese University - Faculty of Sciences | Lebanon, Nabateih

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| • Master 2 in Advanced Artificial Intelligence and Generative Systems | Sep 2024 – Nov 2025 |
| • Master 1 in Computer Science | Oct 2023 - Jun 2024 |
| • Bachelor in Applied Mathematics and Computer Science - GPA: 83.47/100 | Nov 2020 - Jul 2023 |
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Work Experience

Self-Employed

Private Computer Science Tutor

Oct 2024 – Present

- Assisted university students with their graduation projects by following up on their progress, providing regular feedback, and supporting them until successful completion, resulting in final grades above 90/100.
- Helped students with programming assignments by breaking down solutions into simple steps and supporting them in debugging errors when needed, with some achieving full marks (100/100).
- Explained computer science lectures and exam topics in a simple and organized way using real examples, helping students better understand the material and improve their exam performance.

BrightChamps | India (Remote)

Global edtech company providing online coding and programming education for school students.

Coding Educator

May 2022 - Jun 2024

- Delivered one-to-one coding sessions to around 30 school students by explaining programming concepts in a clear and simple way to support understanding.
 - Provided post-session feedback across 100+ live sessions by reporting student progress and identifying learning difficulties after each class.
 - Worked with a diverse international team of instructors to maintain consistent teaching quality and improve the overall learning experience.
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Projects

Thales | KSA (Remote)

Master's Thesis: Real-Time Person Detection in Crowded Scenes, GPA: 83/100

Apr 2025 - Oct 2025

- Prepared and structured the WildTrack dataset (400+ frames across 7 synchronized cameras) for model training, ensuring clean, well-formatted input data ready for deep learning pipelines.

- Built a custom evaluation pipeline on a T4 GPU to test and benchmark deep learning models under real-world crowded scene conditions, using standard detection metrics including AP, AR, and Miss Rate.
- Fine-tuned two object detection models (YOLOX and RT-DETRv2), achieving strong performance gains where AP improved by +28.4% and +29.8% respectively after fine-tuning.

AI Health Assistant - RAG System

Apr 2025

- Built a conversational AI health assistant using LangChain and Llama 3.3 70B, integrating a FAISS vector database with semantic search and embeddings to retrieve relevant information from multiple medical sources.
- Designed a structured prompt engineering pipeline to generate multi-perspective responses, ensuring users receive balanced and well-rounded medical information.
- Deployed the application locally using Gradio, handling end-to-end integration between the LLM, vector store, and user interface.

Image Captioning

Apr 2025

- Implemented and compared three deep learning models (BLIP, VGG16, and ResNet50) for automatic image description generation.

ML Model Benchmarking

Jan 2025

- Implemented and compared Random Forest, AdaBoost, XGBoost, and Neural Networks with data preprocessing and performance evaluation.

AI-Enhanced Job Portal

Jun 2024

- Developed a full-stack job search website with a functional frontend and backend, integrating AI-powered features for CV generation and job matching.
- Implemented a CV-job description compatibility analyzer using text similarity techniques, helping users identify how well their profile matches a job posting.

Skills

Technical: Python, PyTorch, scikit-learn, Large Language Models (LLMs: OpenAI, Hugging Face, LLaMA), Retrieval-Augmented Generation (RAG), LangChain, Prompt Engineering.

Languages: Arabic (Native), English (Professional).

Training and Certifications

Amazon Web Services (AWS) | Remote

Jan 2024 - Jul 2024

AWS Certified Cloud Practitioner

- Credential ID: a2e2ebf9a5e64e0f9203c0763e6a22e4

Esri Lebanon | Remote

Feb 2023 - Jun 2023

ArcGIS Pro: Essential Workflows