Chater Oumaima

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Education

Centrale Supélec **August 2021 – December 2024**
Engineer in Artificial Intelligence *Gif-sur-Yvette, France*
- Key studies: Probability, Statistics, Optimization, Programming, Big Data, Data Science, Machine Learning, Deep Learning, NLP, Computer Vision, Game Theory, Reinforcement Learning.

Preparatory Classes for French Grandes Écoles (CPGE) **September 2019 – June 2021**
MPSI & MP – Advanced Mathematics, Physics, and Engineering Sciences* *Rabat, Morocco*
- Intensive program focused on advanced mathematics, physics, chemistry, and problem-solving for competitive engineering school entrance.

Work Experience

Libertify **December 2024 – Present**
Junior AI Engineer *Paris, France*
- Redesigned a scalable Retrieval-Augmented Generation (RAG) architecture for document and video content.
- Built multimodal RAG systems and AI agents for automating analysis and media workflows.
- Automated background removal and implemented robust testing for production stability.

Renault **May 2024 – November 2024**
AI Engineer Intern *Guyancourt, France*
- Built predictive models for recurring vehicle defects using diagnostic data.
- Applied prompt engineering and LLMs to optimize RFP responses.
- Collaborated with engineering teams to deploy AI tools in production.

Projects

Genvia – Predictive Manufacturing | *ML, Reliability, VAE, UDA* **October 2023 – April 2024**
- Digitized manufacturing orders and processes, saving **160+** hours.
- Applied Variational Autoencoders and Domain Adaptation to predict hydrogen electrolyzer failures (**90.8%** accuracy).
- Awarded **Prix de l'Innovation Dzung Tran** for innovation and impact.

Emotion Recognition | *AI, Computer Vision, Audio Processing* **February 2024**
- Built a deep learning system for facial and audio emotion detection using CNNs and LSTMs.
- Achieved 90.3% image accuracy and 75.8% audio accuracy.

Multi-Agent Robot Mission Planning | *Simulation, Optimization, MAS* **March 2024**
- Simulated autonomous robots cleaning radioactive waste across 3 zones with constrained mobility and waste conversion rules.
- Developed two strategies: (1) random non-communicating agents, and (2) hierarchical agents with communication and target assignment.
- Achieved **100% task completion** and reduced steps by 3.5× in all 40 runs with communication vs. 60% without.

Technical Skills

Programming Languages: Python, C++
Data Visualization: Power BI, Seaborn, Matplotlib, Excel
Big Data Management: SQL, Neo4j, PostgreSQL, MongoDB
Mathematical & Machine Learning Tools: Matlab, Sage, Scikit-Learn, TensorFlow, PyTorch, Pandas, NumPy, SciPy

Languages

Arabic: Native **French:** Bilingual Proficiency **English:** Full Professional Proficiency