

Ali El Baha

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I am a final-year ML/DL Engineering Student, with a strong interest in consulting, looking for a 6-month internship.

EDUCATION

CentraleSupélec

Applied Mathematics and Computer Science

Paris, France

2023 - 2024

- Stochastic Optimization, Statistics, Deep Learning, Signal Processing, Computer Science.

Centrale Casablanca

Engineering Degree

Casablanca, Morocco

2022 - 2026

- Applied Mathematics, Numerical Methods, Statistics, Optimization, Machine Learning, Quantum Physics, Statistical Physics, Energy Systems, Material Engineering.

CPGE

Preparatory Classes MP

Khouribga, Morocco

2020 - 2022

- Two-year post-baccalaureate program in advanced mathematics and physics leading to entrance exams for *Grandes Écoles*.

EXPERIENCE [*Analytical and synthesis skills - Autonomy - Communication*]

AI Consultant | *Louis Dreyfus Armateurs*

La Défense, France / April → Sept (5 months)

- Collaborated closely with captains, superintendents, sailors, and internal teams to understand day-to-day operations, identify pain points, and uncover opportunities where AI could enhance productivity and reduce operational losses.
- Delivered a recommendations report outlining key AI use cases (invoice content extraction, RAG-based assistant for instant maintenance record access and anomaly detection for predictive maintenance) to improve efficiency.
- Developed and deployed an anomaly detection prototype (autoencoder) as a REST API with a real-time monitoring dashboard to avoid Dry Docking (average cost \$850 000)

R&D Data Scientist | *Société générale*

La Défense, France / Oct. 24 → April 25 (6 months)

- Conduct of a comprehensive literature review on fuzzy matching, phonetic transcription algorithms, and graph-to-phoneme conversion using state-of-the-art deep learning techniques.
- Enhancement of review protocols for Screen Scanning models to identify and mitigate risks associated with model limitations.
- Implementation of deep learning-based algorithms for performing relevant stress tests, including phonetic-based evaluations, on name matching models.

Deep Learning Researcher | *Laboratoire de Mécanique Paris-Saclay*

Paris, France / Feb. → June (6 months)

- Study of recurrent neural network (RNN) architectures, with particular emphasis on Long Short Term Memory (LSTM) networks, in the context of processing time series data.
- Test of Representation GAN (RepGAN) in terms of data generation and signal reconstruction.
- Implementation of a new approach integrating the LSTM model with the RepGAN model, with the aim of predicting the seismic response of historic monuments.
- Comparative performance analysis between the RepGAN model incorporating an LSTM and one incorporating a Transformer.

Data Scientist | *NORMA*

Casablanca, Morocco / Oct. 23 → Jan. 24 (3 months)

- Development of "Juridico", a legal assistant that meets a major market need for automated analysis and contract management.
- Design of a scalable AI solution using the "Falcon" language model and RAG technology with the LangChain framework, tailored to the needs of business leaders and legal professionals.
- Fine-tuning of *Falcon* LLM to enhance the model's ability to interpret legal documents with precision.

Centrale Tech Association

- * Preparation of theoretical courses on AI for first-year students.
- * Organization of workshops on solving real industrial problems using AI techniques.

TECHNICAL SKILLS

Languages: French (C1), English (Professional, Toeic: 920/990), Arabic (native), Spanish (beginner).

Tools: Python, MATLAB, R, SQL, Power BI, Office Suite, Git, VS Code, HuggingFace Transformers, RAG (LangChain), OpenCV, Tensorflow, PyTorch, Scikit-learn, Pandas, Seaborn, NumPy, Flask, Streamlit, Dash, WandB, Jira, Trello.

PROJECTS [Teamwork - Project Management]

Agentic AI (RAG-based) | *RAG, LangChain, Pandas, LLM, FAISS, HTML, CSS*

Apr. 2025

- Development of a RAG-based conversational assistant capable of analyzing fleet maintenance logs from textual data stored in a MySQL database.
- Design and automation of an ETL pipeline to extract, transform, and serialize ship maintenance records into text documents, then vectorize them using LangChain and index them with FAISS for fast and accurate semantic search.
- Implementation of a complete retrieval and generation flow enabling the assistant to analyze user queries, retrieve the most relevant documents via FAISS, and synthesize clear and contextual responses from the retrieved data.
- Delivery of a smooth and secure conversational interface, allowing non-technical crew members to query maintenance histories in natural language and obtain reliable, understandable answers, while ensuring total isolation of production databases.

Data Analytics for Supply Chain | *Power BI, Power Query, scikit-learn*

Jan. 2024

- Cleaning and preprocessing a dataset comprising 2 million parcel deliveries, ensuring data reliability by removing anomalies and correcting missing values.
- Using Power BI to create interactive visualizations, identify seasonal trends, peak delivery periods, and operational improvement areas.
- Conducting statistical analyses to understand the impact of different variables on delivery success rates and identify obstacles in the delivery process.
- Applying clustering techniques to segment delivery areas based on demand, optimizing route planning and reducing delivery times.

Computer Vision (Hackathon) | *Tensorflow, Computer Vision, LLMs, TTS, Streamlit*

Dec. 2023

- Designing smart glasses capable of real-time environment detection and description, providing users with helpful assistance for navigation
- Implementation of DETR-ResNet-50 for precise object detection in near real-time scenarios.
- Integration of the Global-Local Path Networks (GLPN) model, trained on NYUv2, for accurate monocular depth estimation.
- Use of the LLM for real-time environment description and user guidance towards their desired destination.

CERTIFICATES

Project Management certification | *Google Project Management*

Scrum Certification | *Scrum Master*

Modeling Software Systems using UML | *The Hong Kong University of Science and Technology*

Client Needs and Software Requirements | *University of Alberta*