



## EXPERIENCE

### ALPHA10X | AI Engineer

March 2023 – Present | Aix-en-Provence, France

#### • Key Responsibilities:

- Design and implement scalable AI architectures and end-to-end software and ML pipelines using Azure, Databricks, Elasticsearch, and ML models. Also, build and maintain CI/CD pipelines of microservices using Docker.
- Build AlphaCodex, a multi-agent AI framework using LangGraph connected to internal and external tools, integrating reward models and evaluation mechanism
- Develop and deploy custom AI-driven solutions (APIs, LLM services, dashboards) tailored to client needs.

#### • Key Achievements and Client Projects:

- **Permira** (\$87B AUM): Built an enterprise-grade RAG-based API in 2 weeks featuring multi-agent architecture, PDF extraction, and SQL query generation capabilities.
- **ALPHA Attributes API**: Architected a production-ready serverless system processing thousands of companies, featuring multi-source retrieval (Vector DB, Elasticsearch, Web Search), reducing per-company processing time from 38s to 14s while achieving 83% accuracy in attribute generation.
- **Kearney**: Delivered 10+ AI-driven solutions, including dashboards and LLM-powered tools, for high-impact client projects with Kearney, a leading strategy consulting firm.
- **Syensqo**: Engineered automated data pipeline processing 1000+ company attributes and querying transactions from a 2M-document index, significantly reducing analysis time.

### APM TERMINALS | Predictive Maintenance Intern

March 2023 – March 2023 | Tangier, Morocco

- Shadowed the team to gain valuable insight into reliability and maintenance.
- Conducted data cleaning, exploratory data analysis, and feature engineering on 166 IoT signals with 500K rows of data coming from the trolley motor.
- Developed an LSTM-based deep learning anomaly detection model to identify abnormal behaviors in the asset.

## PROJECTS AND ACCOMPLISHMENTS

### AGENT HUB: OPEN-SOURCE PLATFORM FOR SPECIALIZED AI AGENTS | 1<sup>st</sup> Place , Morocco AI Challenge 2024

- Developed an open-source platform that enables modular, specialized AI agents to perform computer automation tasks.
- Designed the **microservices architecture** to decouple agents based on tasks, leveraging lightweight LLMs and traditional software to optimize for speed, memory usage, and task accuracy.
- Built an **orchestration layer** using langgraph, creating a graph-based execution pipeline to plan, coordinate, and adapt task flows dynamically based on user input.
- Implemented an **evaluation pipeline** to benchmark agents against performance metrics such as latency, memory usage, accuracy, and cost, integrating CI/CD for automated testing and deployment.
- Built a **reward model** to score agents based on multi-factor evaluations, ensuring fair and transparent agent rankings.

### ÉCOLE POLYTECHNIQUE & BNP PARIBAS: GENHACK 3- GENERATIVE MODELLING CHALLENGE | 2<sup>nd</sup> Place

1 Month - 2023

- Objective : Use generative AI to model the evolution of maize yield spatially and over time, accounting for climate change factors (temperature, rainfall)
- Collaborated with a team of students to build three distinct generative models, VAE, GAN, Diffusion, to simulate yields.
- Focused on customizing the diffusion model, which turned out to be the best-performing model and helped secure 2nd place in the competition.

## EDUCATION

### MASTER AND BACHELOR DEGREE IN INDUSTRIAL ENGINEERING | Minor : Data Science

EMINES - Mohammed VI Polytechnic University

Sep 2019 - 2024 | Ben Guerir, Morocco

**Relevant Coursework:** Optimization, Linear Algebra, Probabilities, Statistics, Calculus, ML & DL, Databases, Mining, Finance.

## SKILLS

**Technical Skills:** Cloud Architecture (Azure, Databricks) • DevOps & API Development • Machine Learning • SQL • Python

**Soft Skills:** Adaptability • Teamwork • Problem Solving • Strategic Planning • Communication

**Languages:** English (Proficient) • French (Proficient) • Arabic (Fluent) • Chinese (HSK1)