ABASSE DABERE

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EDUCATION

ENSAE Paris   09/2024 - 08/2025
MSc in Finance, Risks, and Data   *Paris, France*

· Coursework: Stochastic Calculus, Pricing and Hedging of Financial Derivatives, Risk management, Portfolio Management, Algorithmic Trading, Advanced Machine Learning, Numerical Methods in Financial Engineering

École polytechnique   09/2021 - 08/2025
MSc in Applied Mathematics   *Paris, France*

· Coursework: Statistics, Monte Carlo Methods, Operational Research, Machine Learning, Reinforcement Learning

ESTEM Casablanca   09/2019 - 06/2021
Classes préparatoires   *Casablanca, Morocco*

· Focus: Theoretical Maths, Physics, Engineering Science, Computer Science

EXPERIENCES

Natixis Investment Managers — AI Researcher Intern   04/2024 - 08/2024 — Paris

· Fine-tuned large language models (LLMs) using Low-Rank Adaptation (LoRA) for website translation, achieving performance comparable to ChatGPT-4, with a BLEU-2 score of 0.586 and a semantic similarity score of 0.864.
· Constructed a synthetic dataset of factsheets in PDF format, followed by fine-tuning a model for document layout analysis specifically for these factsheets.
· Developed AI models to identify ESG investment trends and opportunities based from customer meetings, leveraging natural language processing techniques.

DGEX Solutions - SNCF Réseau — Data Engineer Intern   06/2023 - 08/2023 — Paris

· Developed advanced Python-based approximation algorithms for graph isomorphism, leveraging KDTree and K-Nearest Neighbors (KNN) techniques to optimize performance and computational efficiency.
· Refined complex algorithms for finite-time computation, effectively managing and processing over 10 million data points, leading to a significant boost in computational speed and accuracy, achieving a 95% accuracy rate.

PROJECTS

IMC Trading Prosperity — Trading Challenge

· Formulated and tested trading strategies, securing a top 10% ranking in the final standings.
· Optimized trading algorithms under pressure to enhance performance.

Genhack3 Hackathon — Data Science Competition

· Engineered Generative Adversarial Networks (GANs) to accurately predict maize yield under various extreme climate scenarios, applying advanced data science techniques.
· Achieved a sliced Wasserstein distance of 0.88, securing **5th place out of 36 teams**.
· Organized by Chaire Stress Test, co-founded by École Polytechnique and BNP Paribas.

News Articles Title Generation — NLP - LLM - LoRA

· Fine-tuned Transformer-based NLP models by implementing advanced Low-Rank Adaptation (LoRA) techniques to generate French news article titles, resulting in a 20% improvement in the benchmark Rouge-L score.
· Conducted an in-depth analysis of the dataset and fine-tuned pre-trained models, achieving a Rouge-L score of 0.23.
· Secured **2nd place out of 28 teams** in a high-stakes competition, showcasing expertise in natural language processing, model fine-tuning, and resource-efficient methodologies.

L'Odysée, a video game for dyspraxia detection in children — Scientific Project

· Collaborated in a group of 5, taking responsibility for game development using C#, statistical analysis, and the Unity game engine to detect dyspraxia in children.
· Performed tests with 50 children, analyzing data to identify behavioral patterns indicative of dyspraxia.

COMPUTATIONAL SKILLS / OTHER

Programming Languages	Python (TensorFlow/Keras, PyTorch, Transformers, LangChain), C++
Certifications	Deep Learning Specialization (Coursera), Deep Learning Specialization (Datascientest)
Languages	English (professional working proficiency), French (native)