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ABOUT ME

Engineering graduate from INSA Toulouse in Applied Mathematics, with solid background in AI and Data Science. Experienced in developing and deploying ML models in finance, reinforcement learning for complex systems, and cloud-based data solutions. Eager to contribute to innovative AI-driven projects with a focus on delivering business impact and scalable solutions.

PROFESSIONAL EXPERIENCE

Machine Learning Intern, Groupe BPCE (Second largest bank in France) February 2025 – August 2025

- Identified high-impact AI use cases within the Financial Management Department, aligned with the 2030 strategic plan.
- Developed a market window optimization model, enhancing debt issuance timing accuracy and reducing potential financing costs.
- Selected the best-performing model (XGBoost), deployed it, integrated it into a Tkinter/FlaskAPI interface, and ensured reliable application performance in production.

Deep Reinforcement Learning Intern, CNRS Toulouse

June 2024 – September 2024

- Bridged optimal control theory with Reinforcement Learning using Bellman's principle.
- Reduced drag/lift forces in a fluid flow by optimizing the Navier-Stokes equations through RL (Proximal Policy Optimization).

Data Scientist Intern, Data Turing

May 2023 – July 2023

- Built a training dataset for university course offers using data scraping techniques.
- Utilized Flowise to train a chatbot on educational program data.

PROJECTS

- **Visual & Textual Recommendation Engine:** Built and deployed ML models for movie recommendations using metadata and poster analysis (FlaskAPI, Gradio).
- **Autonomous Multi-Agent Trading Platform:** Designed a system of four AI agents (lead, frontend, backend, testing) using CrewAI to collaboratively develop and manage a trading platform, showcasing agentic AI coordination and software engineering automation.
- **Sentiment Analysis:** Developed NLP models (LSTM/Transformers) for movie review classification with improved contextual performance.
- **Conditional Variational Autoencoder (CVAE):** Generated realistic images conditioned on labels for advanced generative tasks.

SKILLS

- **Programming Languages:** Python, R, SQL, PHP, PySpark, Vector databases
- **Cloud & Big Data:** Azure (Databricks, MLflow, AI Services), Google Cloud (BigQuery, DataFlow, Looker Studio), Apache Spark, MongoDB, Elasticsearch
- **Machine Learning & Deep Learning & AI:** Scikit-Learn, TensorFlow, PyTorch, XGBoost, MLOps, Annoy, Pickle, OpenAI agents SDK, CrewAI, LangGraph, LlamaIndex, bert, transformers
- **Web & App Development:** Django, Flask, Streamlit, FastAPI, CI-CD
- **Tools & Data Viz:** Power BI, R Shiny, Git, Docker, Scrum, Seaborn, Plotly, Matplotlib, Bokeh
- **Soft Skills:** Active listening, rigor, curiosity, critical thinking, teamwork.

EDUCATION

INSA Toulouse

September 2023 - August 2025

- Engineering in Applied Mathematics.

École Polytechnique de Nouakchott

September 2021 - June 2023

- Statistics and Data Engineering.

Preparatory Institute for Engineering Schools (IPGEI)

September 2019 - June 2021

- Mathematics; Physics; Engineering science.

LANGUAGES

- French: Professional level
- English: Advanced level