Mohamed DIAGNE

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Final-year MSc student in Finance Technology & Data at Université Paris 1, specializing in quantitative finance, AI, and data science. Currently investment risk data scientist intern at Amundi. Interested in buy-side quant roles.

EDUCATION

2023-2025 **UNIVERSITY PARIS 1 PANTHEON-SORBONNE** Paris, France
Msc. in *Finance Technology & Data – M1 & M2*
Relevant coursework Machine Learning, Deep Learning, Econometrics, Derivatives, Quantitative Finance, Mathematics
Thesis: Real-Time Credit Risk Prediction of Amundi's Portfolio Holdings Using News Sentiment Analysis and NLP

2020-2023 **UNIVERSITY PARIS 1 PANTHEON-SORBONNE** Paris, France
BSc. in Economics

2020 **INSTITUTION SAINTE JEANNE D'ARC** Dakar, Senegal
Baccalauréat, Economic & Social, with Honors

KEY PROJECTS *(More available on GitHub)*

PORTFOLIO OPTIMIZATION, RISK MODELING & MACROECONOMIC STRESS TESTING
- Modeled portfolio risk using Markowitz allocation and VaR/CVaR (Historical, Student-t, Monte Carlo), benchmarked to the CAC 40.
- Performed Kupiec backtesting and macro stress tests to assess portfolio sensitivity and support risk reporting.

MARKET REGIME FORECASTING – DYNAMIC PROBIT & MACHINE LEARNING
- Predicted market regimes using dynamic autoregressive probit models with lagged states and predicted probabilities.
- Benchmarked against Extra Trees classifier using macro and market data (VIX, credit spreads, long-term yields).

OPTION PRICING & HEDGING – BLACK-SCHOLES, MONTE CARLO, GREEKS
- Priced European and American options using Black-Scholes, binomial trees, Monte Carlo, and local volatility surfaces.
- Built and tested Delta, Gamma, Vega, and Theta-neutral strategies under various market conditions.

PROFESSIONAL EXPERIENCE

Sep 24-Jul 25 **AMUNDI ASSET MANAGEMENT** Paris, France
Investment Risk Data Scientist, Risk Oversight

- Built an AI-driven NLP system to monitor real-time credit risk from news, alerts, and sentiment sources, enhancing early risk detection.
- Developed a vector-based chatbot to answer risk-related queries on high-exposure holdings, improving analyst responsiveness.
- Delivered end-to-end data pipelines (API, ETL, reporting) to automate integration and power interactive dashboards for risk teams.

Jul 22-Aug 22 **INVICTUS CAPITAL & FINANCE SA – ASSET MANAGEMENT** Dakar, Senegal
Financial Analyst, Trading Department

- Collected and structured financial data on listed companies to support equity monitoring and internal reports.
- Assisted in analyzing daily market movements to identify sectoral trends and investment signals.

LANGUAGES

French (Native), English (Fluent), German (Intermediate)

TECHNICAL SKILLS

Programming & Analytics: Python, SQL, R, VBA, LaTeX, Git
Tools: Power BI (DAX, SSAS Tabular), Report Builder, Bloomberg, Postman, Jira, Microsoft Office Suite

ACTIVITIES & INTERESTS

- **Finalist (Top 5/80) – Cybersecurity Challenge, Sorbonne & Ministry of Interior:** Built an AI model to detect malware via control flow graph (CFG) analysis.
- **ESG Chatbot Developer – VO2 Group**: Developed GreenSightAI, a RAG-based ESG assistant using FAISS indexing, prompt tuning, reranking, and RAGAS evaluation across multi-firm reports.
- **Class Representative – M2 Finance Technology & Data:** Represented the program externally and managed social media communication.
- **Other Interests:** Golf (1 year), Tai Chi (1 year), Cinema, Painting.