Mariem Naimi

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Profile

Master's in Quantitative Finance student with an engineering background, driven by a deep passion for market microstructure, macrostructure, and quantitative research.

Education

École Polytechnique & Sorbonne *M.Sc in Probability and Finance* ***(Ex DEA El Karoui)*** 2024-2025

Relevant Coursework

Derivative Pricing and Risk Management, High Frequency Trading, Asset management
Stochastic Control, Advanced Stochastic Calculus, Monte Carlo Methods, Jump Processes
Machine Learning for Derivatives Pricing, Deep Learning

Ecole Centrale de Lyon *Engineering Degree in Mathematics and Risk Management Major* 2021-2024

Relevant Coursework

Machine Learning, Data Manipulation and analysis, Object Oriented Programming
Probability and Statistical Learning, Stochastic Calculus, Economic Time Series Analysis, Markov Decisions

Institut Préparatoire aux Études Scientifiques et Techniques (IPEST) *MPSI/MP** 2019-2021

Top Tunisian prep institute for French engineering school entrance exams, focused on advanced STEM training

Experience

Quantitative Analyst Intern – Equity Derivatives | *J.P. Morgan Chase* April 2025 – Present

- Implementing a production-ready stochastic proportional discrete-dividend model (including jump components, stochastic interest-rate extensions, and blending with cash-dividend frameworks) for equity-derivatives pricing and risk analytics. Model developed in C++.

Power Trader Intern | *Primeo Energie* April 2024 – September 2024

- Executed market-making strategies and made trading decisions for both proprietary and client accounts.
- Developed optimal hedging strategies using evolutionary algorithms.
- Built machine-learning models to support decision making and enhanced a fundamental price-curve model.

Projects

Data-Driven Quadratic Hedging Project | January 2025 – April 2025

- Developed and compared reinforcement learning and deep trajectory-based stochastic optimal control algorithms to minimize final quadratic hedging error for European call options under Black–Scholes and SABR dynamics.
- Implemented end-to-end simulations, collected performance metrics (P&L distributions, mean squared hedging error), and benchmarked against analytical delta-hedging strategies.

Equal Risk Contribution Portfolio Optimization | February 2025 – April 2025

- Implemented and compared ERC, Minimum Variance, and Equal Weight portfolio strategies using real and synthetic data.
- Analyzed risk decomposition, robustness to correlation structures, and practical limitations of ERC optimization.

Skills

Languages *Advanced*: Python ; *Intermediate* C++, SQL, Matlab, HTML/CSS, LaTeX, R

Librairies: Pandas, scikit-learn, seaborn, statsmodels

Tools: Git/GitHub, MS Office, Eviews, Weka

Certifications & Honors

- National 3-Year Merit-based Scholarship, Tunsian Ministry of Education 2021 – 2024
- Introduction to Risk Management and Credit Risk — New York University of Finance June 2023
- Financial Markets — University of Geneva June 2023