Hugo Lemonnier

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Seeking an opportunity in quantitative finances, available right now.

Professional Experience

Enigma Securities (Electronic Markets Brokerage) **Paris, France**
Quantitative Research Fixed-term contract *June 2025 – December 2025*

- Developed a multivariate predictive model for short-horizon market dynamics using a broad feature set (order-flow, liquidity, volatility, and derivatives-based variables), validated out-of-sample with statistically significant signal quality.
- Built a research-to-production pipeline for feature generation, training, and evaluation (reproducible experiments, automated reporting, monitoring hooks), improving iteration speed and deployment reliability.
- Implemented a robust validation framework (walk-forward splits, regime diagnostics, ablations) to reduce overfitting and attribute performance to specific feature families.

Quantitative Research Intern *January 2025 – June 2025*

- Implemented and productionised an Avellaneda–Stoikov market-making baseline (inventory-aware skew, spread/refresh controls) in an event-driven backtesting framework.
- Developed microstructure-based signals to manage adverse selection (order-flow/liquidity imbalance, queue proxies) and improve passive execution quality.
- Prototyped a SAC reinforcement-learning agent to adapt quoting parameters, achieving an out-of-sample improvement in risk-adjusted returns at similar execution intensity.

RSM (5th-largest audit firm) **Paris, France**
IT Audit — Internship *June 2024 – December 2024*

- Analysed large datasets in Python to identify anomalies impacting financial performance.
- Performed blockchain audits (code and security protocols) to ensure traceability and integrity.
- Coordinated the launch of a digital bank (Africa): selected BaaS providers, negotiated contracts.

Extracurricular Projects

High-Frequency Market Making Strategy — *Python, NumPy, Pandas, Polars, SciPy* *Sep 2025*

- Reproduced the GLFT market-making model (Guéant–Lehalle–Fernandez-Tapia) using the exact Th.1 optimal quotes under inventory constraints.
- Calibrated order arrival intensity $\lambda(\delta) = Ae^{-k\delta}$ and adverse selection (markout) from BTCUSD PERP data (downsampled to 5s bars).

Portfolio Optimization Strategy — *Python, NumPy, SciPy, Matplotlib* *Jan 2024*

- Constructed an optimal portfolio using the Markowitz Efficient Frontier theory to maximize the Sharpe Ratio.
- Implemented Mean-Variance Optimization (MVO) using `scipy.optimize` and simulated thousands of portfolios (Monte Carlo) to visualize the Efficient Frontier and the CML.

Education

Neoma Business School **Rouen, France**
MSc Corporate Finance & Investment Banking *October 2023 – December 2024*

Double degree with ESIGELEC.

Thesis: Stochastic Calculus in M&A Processes.

Key modules: Financial Engineering, Advanced Corporate Finance, Mergers & Acquisitions, Corporate Strategies.

ESIGELEC **Rouen, France**
MSc in Financial Engineering *September 2021 – December 2024*

Distinction: Top 10% of class.

Key modules: Advanced Probability, Machine Learning, Monte Carlo Simulation, Applied Statistics for Finance.

Additional Training

MIT – edX
Mathematical Methods for Quantitative Finance

Key modules: Probability, stochastic processes (discrete & continuous), Itô calculus, time series.

Machine Learning with Python — From Linear Models to Deep Learning

Key modules: Linear models, clustering, recommender systems, CNN, generative models, RL, NLP.

Languages & Skills

- **Languages:** French (native), English (fluent — TOEIC 970/990), Russian (intermediate)
- **Programming / Data:** C++, Python (pandas, numpy, PyTorch, TensorFlow, scikit-learn), SQL, LaTeX