

Théo VERDELHAN

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EDUCATION

Paris Dauphine University - PSL

Paris, France

MSc in Financial Engineering – Quantitative Finance Track

Sep 2025 – Jun 2026

- Courses: Stochastic Calculus, Derivatives Pricing, Volatility Modeling, Portfolio Theory, Algorithmic Trading, Time Series.

EPF Graduate School of Engineering

Paris, France

MEng in Computer Science – Data & ML Track – Rank: 8/157

Sep 2020 – Jun 2025

- Courses: Probability, Statistics, Linear Algebra, Numerical Optimization, Algorithms & Data Structures, Machine Learning.

PROFESSIONAL EXPERIENCE

Silvertrain AI - Alpha Research & Systematic Trading Team

Paris, France

Quantitative Researcher

Jul 2026 – Present

- Researching and backtesting alpha signals for market making and arbitrage strategies across prediction markets.
- Conducting market microstructure analysis on historical and live data, including liquidity, order flow, spreads and prices.
- Developing Python research tools for data processing, strategy evaluation, performance attribution and robustness analysis.

MYR - Private Investment Fund

Montpellier, France

Quantitative Researcher

Aug 2024 – Jul 2025

- Researched short-horizon signals (microprice, order-book imbalance, realized volatility) across 12 liquid perpetual markets on L1/L2/L3 data, and quantified adverse selection via markout and PnL attribution to drive volatility-dependent quoting.
- Built tick-level research pipelines aggregating five years of second- and minute-level order-book and trade data (gap handling, resampling, outlier control) to backtest quoting logic under fees, FIFO queue priority and inventory constraints.
- Built 24/7 Python monitoring on REST and WebSocket feeds (positions, hedging, PnL, execution quality, competing market-maker quotes) with automated alerting and sub-100 ms detect-to-requote reaction.
- Contributed to a strategy ranked top-3 in the venue's market-maker program, scored on quoted spread, uptime, size and volume.

La Valériane - Investment Branch

Montpellier, France

Quantitative Developer

Sep 2023 – Jan 2024

- Built an end-to-end delta-neutral cross-exchange arbitrage strategy between Binance (CEX) and dYdX (perpetual DEX), covering data collection, signal research, backtesting, execution and live monitoring.
- Reconstructed one year of tick-level L1/L2 order-book data to measure quotable spreads, accessible depth, cross-venue latency and execution frictions.
- Backtested with exchange fees, slippage, partial fills and realistic entry/exit thresholds for ~8% net annualized over 2 years (Sharpe 1.9, max drawdown 7%), then deployed on a 24/7 server trading \$0.8-1.0m notional per day.

PROJECTS & COMPETITIONS (2025 - 2026)

IMC Trading – Prosperity 4 – Algorithmic Trading Competition

- Algorithmic rankings: Round 1 – #77 worldwide, #1 in France; Final – #514 worldwide, #17 in France, among ~20,000 teams.
- Built Python tools for backtesting, diagnostics, signal analysis and multi-round systematic trading research across market-making, cross-product relative value and volatility-driven strategies.

Multi-Scale Lead-Lag in High-Frequency Markets

- Estimated cross-venue lead-lag on asynchronous tick data using a Hayashi-Yoshida covariance estimator with wavelet-scale decomposition; identified stable BTC price discovery from Binance to Kraken from ~50 ms to ~1.95 s.

Event-Driven Trading Simulator (C++17)

- Built a limit order book with FIFO matching engine, position limits, PnL accounting and post-trade execution analytics.

Financial Allocation Performance Prediction – QRT Data Challenge

- Built a leakage-safe panel time-series pipeline on 527k observations of returns, signed volumes and liquidity variables; benchmarked linear, gradient-boosted and neural models with chronological validation and SHAP attribution.

Volatility Timing for Short-Volatility Carry

- Filtered latent realized volatility with an Unscented Kalman Filter; traded the implied-versus-filtered-realized spread on SPY and AAPL strangles with rolling recalibration and out-of-sample evaluation.

SKILLS

Programming: Python (NumPy, Pandas, SciPy, Statsmodels, scikit-learn, LightGBM, PyTorch), C++, SQL, Git, Docker, Linux.

Methods: Time-series econometrics, statistical inference, machine learning, stochastic calculus, Monte Carlo methods.

Additional: Founded MASSEEO, a white-label electrostimulation brand. Competitive tennis (departmental team champion).