Paul Trassaert

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Engineering Student seeking an Internship in Quant Trading, Front Office Development, Research, Risk & Data Science (Available from April 2026)

Education

IMT Atlantique — **Brest, France**
MSc in Engineering - Applied Mathematics & Quantitative Finance — *2024 – 2027*
- **Core Curriculum:** Introduction to Machine Learning, Stochastic Modelling & Analysis, Numerical Methods.
- **Finance Track:** Market Finance, Empirical Finance, Stochastic Dynamic Models.
- **Advanced Skills:** Portfolio Management, Trading Algorithms, Advanced C++ Programming.

Lycée de l'Essouriau — **Les Ulis, France**
Preparatory Class for French Engineering Schools (CPGE) — *2022 – 2024*
- Intensive program in advanced mathematics, physics, and computer science.

Institution du Sacré-Cœur — **La Ville-du-Bois, France**
French Baccalaureate - Specialized in Mathematics, Physics, and Computer Science — *2019 – 2022*
- Focused on advanced scientific curriculum and foundations of programming.

Selected Projects

Option Pricing & Risk Dashboard | *Python, SciPy, Streamlit, Monte Carlo* — **2025**
- Engineered a multi-model valuation engine for American options using PDE (Crank-Nicolson), Trinomial and Binomial Trees (CRR), Monte Carlo (Longstaff-Schwartz/LSM) and Bjerksund-Stensland (2002).
- Implemented real-time risk analytics including Implied Volatility calibration (Newton-Raphson), 3D Volatility Surfaces (Greeks), Value-at-Risk (VaR), and dynamic Delta-Hedging strategies.
- Optimized numerical solvers using NumPy vectorization and validated mathematical convergence against Black-Scholes-Merton benchmarks via a rigorous test suite.

High-Performance Hyperspectral Unmixing | *Julia, Distributed Computing, Optimization* — **2025**
- Developed a BSS solver using Projected Gradient Descent to decompose hyperspectral data under physical constraints (non-negativity/sum-to-one).
- Achieved a speedup by implementing Julia distributed computing (`pmap`) to parallelize pixel-wise abundance updates.

Coastal Cliff Erosion Modelling (BD MOMA Project) | *Python, R, QGIS, Statistics* — **2025 – 2026**
- Collaborated with LETG Laboratory to develop database and mathematical models for erosion prediction.
- Designed statistical and stochastic models linking geological, meteorological, and marine variables.
- Developed and deployed machine learning algorithms for coastal cliff erosion forecasting.

Modular Machine Learning Pipeline | *Python, Scikit-learn, Pandas* — **2025**
- Engineered a modular classification pipeline automating data preprocessing, feature selection, and performance evaluation for binary classification. Evaluated and compared Random Forest, SVM, Gradient Boosting models...
- Validated model robustness across balanced and highly unbalanced datasets using specialized sampling techniques.

Experience

Complétude — **Brest, France**
Tutor - Mathematics and Physics — *2024 – 2026*
- Provided individualized tutoring for high school students at the final year level.

Calamongo — **Monthléry, France**
Sales and Operations Assistant — *June 2025 – July 2025*
- Managed inventory reception, order tracking, and stock organization.

Skills, Languages & Activities

Technical Skills: Python, R, Julia, C++, SQL, PyTorch, LaTeX, GCP (BigQuery), VS Code, QGIS

Specializations: Stochastic Modeling, Machine Learning, Numerical Analysis, Financial Markets

Languages: French (Native), English (B2), Japanese (A2)

Activities: President of the Table Tennis Club, Member of Finance Consulting Atlantic, Chess, Strength Training