Paul Archer

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Education

Imperial College London, UK — 2025 – 2026
MSc Mathematics and Finance

Télécom Paris, France — 2023 – 2026
Engineering Degree (Stochastic Modelling & Data Science) — *GPA: 3.95/4.0*

Lycée Henri IV, Paris — 2021 – 2023
Classes Préparatoires MP (Mathematics & Physics)* — *Top 5% Nationally*

Technical Experience

WorldQuant BRAIN Platform — September 2025
Alpha Signal Developer — *Remote*

- Developed **15+ profitable trading signals** with combined Sharpe ratio of 2.1, specializing in momentum, mean reversion, and microstructure patterns across global equity markets.

VibeMatch (AI Startup) — Summer 2025
Co-Founder & Technical Lead — *Paris, France*

- Developed proprietary **ML algorithms** analyzing behavioral patterns and content alignment signals, achieving 89% collaboration success prediction accuracy with **sub-0.5 second** processing of complete user profiles. Website

Henri Mondor Hospital - AP-HP — Summer 2025
Data Engineering Intern — *Créteil, France*

- Engineered **automated data pipeline** processing 10,000+ patient records with **time series forecasting models** and **NLP techniques** applicable to financial data analysis.

Sopra Steria — Summer 2024
Systems Engineering Intern — *Courbevoie, France*

- Designed **quantum optimization algorithms** using cold atoms computing (Pasqal) for network resource allocation, implementing mathematical models for complex optimization problems.

Technical Projects

Multi-Asset Trading Infrastructure | *Ensemble ML + Multi-Source Intelligence*, Demo

- Built **comprehensive trading system** integrating 12+ news feeds, Reddit sentiment, and Congressional trading data with XGBoost, LSTM, and Transformer ensemble models, achieving 13% annual returns, Sharpe 1.34, 6.8% max drawdown.
- Implemented **institutional-grade risk management** with Kelly criterion position sizing, 99% VaR monitoring, stress testing scenarios, and real-time portfolio exposure controls with automated stop-loss mechanisms.

Derivatives Pricing Engine | *Mathematical Finance*

- Developed **high-performance pricing library** implementing Black-Scholes, Heston stochastic volatility, and Merton jump-diffusion models for vanilla and exotic options with automatic differentiation.
- Built **Greeks calculation engine** with dual number arithmetic achieving sub-millisecond pricing, Monte Carlo simulation with variance reduction techniques for complex derivatives.

Competitions

Optiver Ready Trader Go & QuantConnect Alpha Competition — September 2025

- Built high-frequency trading algorithms with microsecond latency optimization and alternative data integration for systematic alpha generation.

Technical Skills

Programming: Python (NumPy, Pandas, PyTorch, QuantLib), C++, R, MATLAB, SQL, JavaScript/TypeScript
Systems: PostgreSQL, Redis, Docker, Linux, Kubernetes, GCP, REST APIs, WebSocket, Real-time Systems
Languages: French (Native), English (C2), German (B2)

Leadership

General Secretary, Forum Télécom Paris — 2024

- Led **cross-functional team of 48 members** across logistics, finance, marketing, and partnerships, coordinating €300K budget for largest student career fair with 80+ companies and 1,000+ attendees, generating €100K profit and featured in **Forbes** interview.