COREY PRITCHARD

Junior Quantitative Trader | First Class MMath, University of Southampton
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PROFILE

Python and SQL builder on a front-office trading desk who turns AI tools into everyday working practice. Made the case for AI at a firm resistant to it, secured Claude access and drove adoption across the desk and wider teams; building sensitive-data masking and proposing governed data access (MCP) so internal data is ready for AI tools. Works daily with Claude Code and Cursor. First Class MMath, Southampton; quant research in options, volatility and neural hedging.

EXPERIENCE

Exinity | Junior Quantitative Trader, front office | Retail FX, CFD and crypto broker — Oct 2025 – Present

- **Driving AI adoption:** made the case for AI at a firm resistant to it and secured Claude access through my manager, then drove adoption across the desk and wider teams.
- **AI readiness of data:** building a Power BI tool that masks sensitive data so it is safe to connect to AI tools. Proposed an MCP server, now in discussion, to give AI tools governed access to internal data.
- **PnL impact analysis:** answer the desk's "what happens to PnL if…" questions on changes to pricing, skew, hedging or LP setup, using tick, order-flow and execution data (Python, SQL). Set skew manually in the desk's Excel pricing sheet.
- Built and maintain the desk's ranking of spread performance across 25–30 LPs, used to route flow and choose providers.
- Built a Python (Jupyter) beta-hedging tool for the desk's US equity CFD book: estimates the book's exposure to the top US stocks and suggests index futures hedges, which traders review and place manually.

Clearing | Product Development Intern — Summer 2024

- Identified inefficiencies in the business's manual processes in the first week and moved from product development into automation, building Python browser and Excel automation (Selenium, BeautifulSoup) for non-technical teams and saving 10+ hours a week.

PROJECTS

Deep Hedging | Python, PyTorch — github.com/coreyjpritchard/deep-hedging

- Neural hedge (Buehler et al. 2019) of a short 30-day ATM call in a Black-Scholes market with a 50 bp proportional cost, evaluated on 20,000 fresh paths against a delta-hedging baseline: mean P&L -0.83 against -1.37, and entropic risk 1.05 against 1.54; the network learns a soft no-trade band around delta.

Volatility Surface and Pricing Library | Python — github.com/coreyjpritchard/volsurface

- Options library with Black-Scholes Greeks (five engines), Heston (COS), SABR, Dupire, SVI, arbitrage-free SANOS and a rough Bergomi plug-in, fitted to an SPX chain. The SANOS surface has 0 static-arbitrage violations, against 2,246 for raw SVI.

Rough Volatility | Python — github.com/coreyjpritchard/rough-volatility

- Estimated the Hurst exponent of S&P 500 realised volatility at H = 0.148 (SE 0.010) from Oxford-Man 5-minute realised variance, 2000-2022, against 0.5 for Brownian volatility; a rough Bergomi simulation reproduces the ATM skew slope (-0.41 against -0.40).

Zero-Intelligence Limit Order Book Simulator | Python — github.com/coreyjpritchard/LOB-Simulator

- Smith et al. (2003) zero-intelligence continuous double auction calibrated to Binance BTC/USDT and ETH/USDT Level 2 order flow. After burn-in the simulated spread is about 1 tick, close to the real one, and average depth matches; inside quotes are much thinner than real.

EDUCATION

University of Southampton | MMath (MMORSE) Operational Research, Statistics and Economics — Sep 2021 – Jun 2025

- **First Class Honours.** Dean's List Award for Outstanding Achievement, received 5 times. First place, AmplifyMe Quantitative Statistical Arbitrage Challenge with Morgan Stanley (Oct 2025).
- Dissertation (Jun 2025), An Analysis of Volatility Models in Monte Carlo Simulations: priced S&P 500 options (SPY data) under GBM, GARCH(1,1) and regime-switching GARCH, with a CNN-LSTM explored; plain GBM had the lowest error (14.94% RMSPE).
- Modules: Probability and Stochastic Processes, Linear Algebra, Optimisation, Machine Learning, Quantitative Finance.

Bristol Grammar School | A-levels: Mathematics A*, Further Maths (AS) A, Economics A, Physics A — Sep 2019 – Jun 2021

SKILLS

AI and developer tools: Claude, Claude Code, Cursor, MCP; LLM tooling, agent skills, workflows and orchestration; LLM adoption, sensitive-data masking, governed data access

Programming: Python (NumPy, SciPy, pandas, scikit-learn, statsmodels, Matplotlib, PyTorch), SQL, C++ (object-oriented), shell scripting; Git, Linux, Jupyter; browser automation (Selenium, BeautifulSoup); Excel, Power BI

Evaluation and quantitative: benchmarking against baselines on held-out data, model validation, statistics, probability, machine learning, Monte Carlo simulation, time-series analysis, optimisation

Markets: pricing, skew and PnL analysis, execution quality and LP analysis; options and volatility modelling; FX, CFDs, crypto