Frederick Lewin

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EDUCATION

Durham University June 2026 (expected)

MMath in Mathematics (Second Year: 82%, First Year: 79%)

- Third year modules will include stochastic processes, machine learning and neural networks, mathematical finance, Bayesian computation and modelling and Decision Theory.
- Second year modules included, complex analysis, analysis in many variables, elementary number theory, data science and statistical computation, statistical inference, statistical modelling, mathematical physics and probability..

Saffron Walden County High School September 2020-July 2022

- 4 A-Levels in Further Maths (A*), Maths (A*), Physics (A) and Biology (A).

WORK EXPERIENCE

Data Analytics Intern, Aramco Trading Limited: (Python, SQL) July 2024-Present (October 2024)

- Bayesian Optimisation for hyperparameter tuning in ML based ensemble models to produce trading signals on commodity time spreads and crack spreads.
- Developing the quantitative decision structure for gasoline traders and analysts by creating a dashboard with forecasts and current data by automatically summarising the weekly EIA report.
- Applying the Black-Scholes-Merton model to increase P&L by proposing decisions to traders on cargo pricing optionality. Modifying the above model for exotic commodity options.
- Presenting and explaining complex forecasting models to management to encourage a growth to the quantitative decision structure.

Internship, Quant Insight: (Python, bash) August 2023-September 2023

- Coded a volatility adjusted, backtest framework on stock data using Quant Insights API.
- Investigated the average returns of trades on all US stocks over the last 5 years, found using the backtest framework, and how the returns are affected by different macro-economic drivers.
- Time-series analysis to classify trades based on the macro-economic factors with the highest contribution to the model price.
- Data analysis task based on macro regimes and investigating how different US sectors indexes perform in each regime.

EXTRACURRICULAR ACTIVITIES

High Frequency Trading Algorithm

- Developed and now maintain/improve a high frequency trading algorithm, running live. Trades off of macro warranted fair value, US equities.
- Applied an OLS model to identify the optimum hedging ratio. Delta hedge trades using Russell 3000 put options to reduce drawdowns and volatility.
- Out-of-sample returns of 44%, hit rate of 74% since 2023-11-27, with medium to long term holding times. Leveraged is concurrently adjusted based on market and instrument volatility.

Collingwood College Boat Club Kit Secretary

- Coordinated with an external sports kit company to design, produce and distribute kit for a club of 150+ members.
- Proactively sought feedback to ensure quality products at affordable prices for club members.

SKILLS, INTERESTS AND ACHIEVEMENTS

Skills: Python, R, SQL, Bash, machine learning Excel, algo trading, data cleaning

Interests: High frequency trading algorithms, poker, rowing (2V Collingwood College, Durham), competitive powerlifting, football, chess