Christopher Molloy, Ph.D.

Quantitative Researcher & Investment Strategist

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EDUCATION

London School of Economics | *MSc. - Financial Math* **Sept. 2024 - Present**

- Coursework: Stochastic Calculus, Credit Risk Analysis, Derivatives Pricing, Portfolio Optimization.

Queen's University | *Ph.D. - Machine Learning* **Sept. 2020 - Jul. 2024**

- Coursework: Bayesian statistics, Time Series Analysis, Data Mining, Deep Learning.
- Awards and Scholarships totaling $80,000 for groundbreaking research.

Queen's University | *BComp.H. - Computing & Math* **Sept. 2016 - Apr. 2020**

- Coursework: Probability Theory & Statistics, Optimization Methods, Linear Algebra.

RECENT EXPERIENCE

Student Trader — Oct. 2024 - Nov. 2024

Optiver Trading Academy **London, England**

- Designed and implemented quantitative hedging strategies (such as Delta-hedging) in Python to optimize risk-adjusted returns and manage market exposure in derivatives market making.
- Applied risk-neutral pricing to identify futures and options arbitrage, leveraging Optiver's simulated order book to refine execution and portfolio risk strategies.

Research Associate — Sept. 2020 - Jul. 2024

L1nna Research Lab **Kingston, Canada**

- Led international team of researchers to develop predictive model in Python (using TensorFlow) to classify complex datasets and outperformed baseline benchmarks by 14%.
- Conducted backtesting on developed solution against existing state-of-the-art using statistical modelling and data analytics on 1M+ data samples to validate model performance.
- Delivered technical presentations at international venues to stakeholders using Microsoft PowerPoint.

Quantitative Research Analyst — Jan. 2024 - Apr. 2024

RP Investment Advisors **Toronto, Canada**

- Engineered a signal generation pipeline tailored to bonds, improving data quality and enhancing credit risk and spread analysis to support fixed-income trading strategies.
- Built a bond pricing model in Python (TensorFlow) to detect market inefficiencies, reducing prediction error by 26% and driving alpha generation.
- Partnered with portfolio managers to integrate data-driven insights into investment strategies, combining quantitative research with discretionary decision-making.

Data Automation Analyst — Sept. 2023 - Dec. 2023

Scotiabank **Toronto, Canada**

- Built a Python/MySQL data pipeline to automate Excel-based reporting workflows, eliminating manual data handling, accelerating decision-making, and increasing accessibility for stakeholders.

SKILLS

Investment & Finance Asset Analysis, Discount Cash Flow Modeling, Fundamental Valuation.

Quantitative Methods Stochastic Calculus, Monte Carlo, Value at Risk, Risk-neutral Pricing, Factor Modeling for Equity & Fixed Income, Technical Communication.

Software & Libraries Python (advanced), SQL, R, C++, C, Microsoft Excel (XLS), Microsoft Word, Microsoft PowerPoint, Pandas, NumPy, Unix, Linux, data visualization tools.