Christopher Lee

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Technical Skills

Languages: Python, SQL, Rust, C, Java
Tools: Git, Docker, Google Cloud Platform, VS Code, Vim, Microsoft Excel
Libraries: Pandas, Numpy, Matplotlib, Plotters, Torch, Transformers, ndarray, tokio

Education

University of Waterloo Waterloo, ON
Bachelor of Mathematics, Mathematical Finance *Sept. 2024 – Aug. 2029*
Relevant Coursework: Linear Algebra, Calculus, Probability, Data Structures + Algorithms, Optimization.

Wilfrid Laurier University Waterloo, ON
Bachelor of Business Administration, Co-op Program *Sept. 2024 – Aug. 2029*
Relevant Coursework: Business Consulting, Accounting, Financial Management.

Experience

Market Research Analyst June 2025 – Sept. 2025
Vosyn AI *Remote*

- Proposed a post-launch strategy involving strategic partnerships by leveraging our API and creator collaboration.
- Designed a system for the company that improved research turnover time for the team by over 50%.
- Facilitated research for over 300 different firms, companies, and products, providing insights into how the company should act.

Student Data Intern June 2023 – Sept. 2023
LEE LAW: Barrister, Solicitor, and Notary *Toronto, ON*

- Visualized and organized 1,000+ case matters using advanced Excel (pivot tables, VBA), creating dashboards that improved case review efficiency.
- Streamlined a complex filing system by restructuring data hierarchies, reducing file retrieval time and enhancing cross-department accessibility.

Projects

Independent Research Project – Financial Viscosity Indicator (FVI) April 2025

- Built a novel market stability signal inspired by fluid viscosity and spring mechanics.
- Modeled regime fragility using price displacement from mean and smoothed velocity.
- Presented research on social media, which gained 25,000+ views and attention from investment professionals.

Market Regime Detection Using Hidden Markov Models March 2025

- Implemented a Hidden Markov Model (HMM) from scratch in Rust to classify financial market regimes.
- Designed custom data structures for transition and emission matrices, implemented Baum-Welch training, forward-backward probability computations, and the Viterbi algorithm, using SPY historical data as input.
- Successfully identified long-term bullish and bearish trends while filtering out short-term noise, demonstrating the utility of HMMs for quantitative trading and portfolio risk management.

Agent-Based Market Simulator March 2025

- Designed and implemented a multi-agent market simulation to study liquidity and order flow.
- Designed interfaces for programming trading behaviour agents and modeled a limit order book environment.
- Provides a framework for custom environments, enabling testing of trading strategies in controlled simulations.

Awards

Philosophy Academic Achievement Award July 2024

- Achieved the highest mark in HZT4U1: Philosophy – Questions and Theories (100%).

Canadian Senior Math Contest Distinction Award July 2024

- Recognized for scoring in the top 25% nationally on the Canadian Senior Math Contest.