

SKILLS & PROJECTS (for more information, please see my website <https://khyles-home.vercel.app>)

Languages: Python (SciPy, NumPy, Pandas, PyTorch, Matplotlib), VBA, SQL, MATLAB, R, Javascript, React
Skills: Git, Bloomberg Terminal, Financial Modelling, Docker
Interests: Quantitative Finance, Capital Markets, Machine Learning & Data Science

Independently researched, developed and implemented projects including:

- Heston Stochastic Volatility Model Simulation in Python
 - Used stochastic calculus and numerical integration methods (Euler & Milstein) to approximate future price and volatility of the S&P 500, approximation allows us to find risk neutral option prices and visualize the volatility smile
- Google Page Rank using A Markov Decision Process in Python
- Simple Feedforward Neural Network using only NumPy

WORK EXPERIENCE

Manulife Investments – Fixed Income Investment Risk | Fixed Income Analyst Co-op May 2023 – Aug 2023

- Conducted comparative research on machine learning models such as robust regression, ridge regression and neural networks for daily yield spread regression
- Managed and trained the robust regression models daily; these were the primary source of spreads used across the firm
- Fixed and refactored Python scripts used for FX swap data procurement from the Bloomberg Terminal
- Automated multiple month end processes for KPI and Economic Value Added (EVA) reporting using Excel VBA
- Managed the transition from LIBOR to SOFR within the models that used overnight REPO rates as a benchmark

TD Asset Management – Investment Risk | Asset Management Co-op Sep 2022 – Dec 2022

- Conducted multiple valuation reviews involving market, company and general economic research on mid-late-stage startups to analyze risk and valuation accuracy related to sub-advisors' ventures; presented analysis and valuation reviews to VPs on a bi-weekly basis
- Created and distributed sixty-one monthly performance reports to assist PM's and RM's with investing decisions
- Developed and provided customized ad-hoc performance reporting and analysis requests for the TD Mutual Funds
- Initiated, customized and automated multiple reporting creation processes using Excel VBA and SQL

TD Securities - Global Markets, Automated Execution | Global Markets Co-op Jan 2022 – Apr 2022

- Created reporting and analysis templates and led end of day reporting for trade allocations of client's trades using Excel VBA and TD's booking platform
- Developed ad-hoc equity and options trading summaries to support client managers' deliverables using SQL and Python
- Led the development of eight monthly expense reports for the exchange venues that TDS clients traded on
- Fielded daily requests from TD Securities clients and interacted with client's analysts
- Coordinated with various groups (back office, technology, clients) in resolving technical and settlement issues in trading operations
- Presented weekly updates on performance metrics to Directors and VPs and at team standups

Daisy Intelligence – Analytics & Finance | Data Analytics Co-op May 2021 – Aug 2021

- Created sales analysis reports and presentation decks using retail T-log data to support the sales and client teams, including assessment of promotions and recommendations for ROI improvement
- Completed multiple client value-add data analyses using SQL, Python, and Knime
- Independently developed an automated KPI tracker to track key client metrics to measure client engagement with Daisy products; this report is now used company wide

Mission2Mask Initiative, Toronto, Ontario | Logistics Manager Apr 2020 – Aug 2020

Schwartz & Schwartz Law Firm, Toronto, Ontario | Law Clerk Co-op Sep 2018 – May 2019

EDUCATION

University of Waterloo Sep 2020 – Present

Honours Math/Financial Analysis and Risk Management with a Minor in Computing

- Bachelor of Mathematics '25
- Relevant course work: Fixed Income Securities, Applied Linear Models, Numerical Computation, Investment Science, Probability Models for Business and Accounting, Differential Equations, Data Structures & Algorithms

Lawrence Park Collegiate Institute, Toronto, Ontario Sep 2017 – Jun 2020

Upper Canada College, Toronto, Ontario Sep 2013 – Jun 2017