

Aryan Singh

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EDUCATION

University of Waterloo

Candidate for Bachelor of Computing and Financial Management (Co-op)

Waterloo, ON

Expected Apr. 2030

- **Relevant Coursework:** Algorithms & Data Structures, Financial Markets, Data Analytics, Financial Reporting

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript/TypeScript, SQL (MySQL), HTML/CSS

Data & Analytics: pandas, NumPy, NumPy-Financial, Matplotlib, yfinance, scikit-learn

Frameworks & Technologies: React, Next.js, Tailwind CSS, Node.js, FastAPI

Developer Tools & Environments: Git/GitHub, Linux, VS Code, Jupyter Notebook, MS Office, Power BI

PROJECTS

Robo-Advising Portfolio Optimizer | *Python, pandas, NumPy, yfinance*

[GitHub](#)

- Built a **portfolio construction pipeline** using pandas and NumPy to filter equities by currency, liquidity, and market capitalization, incorporating data validation to remove delisted tickers and handle cross-listed stocks.
- Calculated **annualized volatility** to screen and exclude high-risk equities within each sector, reducing portfolio risk while preserving sector-level diversification.
- Constructed a **\$1,000,000 CAD market-meet portfolio**, selecting equities correlated with the S&P 500 and TSX Composite and converting portfolio weights into shares, accounting for FX conversion and transaction costs.

Market Stress & Crisis Simulator | *Next.js, TypeScript, React, Tailwind CSS, Recharts*

[GitHub](#)

- Built a **portfolio simulation engine** supporting asset weighting, normalization, and configurable rebalancing across 10+ assets, modeling portfolio behavior under extreme market stress.
- Engineered a **stress-testing framework** replaying three major market crises (2008 GFC, COVID-19, 2022 Rate Shock) over 12–36 month horizons using historical time-series data to simulate drawdown and recovery trajectories.
- Designed an **analytics pipeline** processing 10+ years of market data to compute 6+ risk metrics (maximum drawdown, volatility, Sharpe ratio, time-to-recovery), enabling evaluation of tail-risk exposure and resilience.

Equity Trend Analyzer | *Python, pandas, NumPy, yfinance, Matplotlib, Streamlit*

[GitHub](#)

- Developed a **quantitative equity analysis tool** leveraging historical market data to compute performance and risk metrics, including maximum drawdown, total return, and annualized volatility.
- Implemented **trend detection logic** using linear regression on log-price data to classify equities as uptrend, downtrend, or no clear trend.
- Engineered signal analysis tools, including moving average crossovers and **RSI (14)** momentum indicators, incorporating input validation, dynamic visualization, and CSV export to support structured investment analysis.

EXPERIENCE

Food & Beverage Service Associate

Canada's Wonderland

Mar. 2023 – Aug. 2025

Vaughan, ON

- Executed **300+ high-volume financial transactions** per shift using Oracle POS systems, maintaining 95–99% transaction accuracy and audit-level accountability during peak operating hours.
- Supervised and coordinated day-to-day operations across **5–10 associates per shift** during peak periods, providing task delegation and resolving real-time operational issues to maintain efficient service flow.
- Optimized front-line workflows by prioritizing associate responsibilities and adapting processes in real time, supporting efficient service for **hundreds of guests per shift** in a fast-paced environment.

International Service Project (Global Development)

Shelter Them Poverty Relief (NGO) — Brampton Christian School

Mar. 2024

Kigali, Rwanda

- Planned and executed fundraising initiatives, raising **\$2,000+** and coordinating budget allocation to ensure on-time completion under constrained funding.
- Collaborated within a cross-functional team of **15+ members** to plan and execute a community infrastructure project, successfully meeting all project deadlines despite fixed timelines and logistical constraints.
- Managed resources, materials, and on-site execution during the construction of a fully functional cow shelter in partnership with Shelter Them, ensuring on-time completion within a **2-week timeline** under limited resources.