

# Aryan Singh

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## EDUCATION

### University of Waterloo

Waterloo, ON

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

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), Bash, HTML/CSS

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

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

**Developer Tools & Environments:** Git/GitHub, Linux, VS Code, PyCharm, Jupyter Notebook, Vim, Anaconda

## EXPERIENCE

### Food & Beverage Service Associate

Mar. 2023 – Aug. 2025

*Canada's Wonderland*

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.
- Coordinated **unit and team operations** across **5–10 associates** per shift, resolving real-time operational issues to maintain continuous workflow and minimize service delays during peak periods.
- Led **team operations** by prioritizing associate responsibilities and adapting workflows in real time, supporting efficient front-line operations for **hundreds of guests per shift** in a fast-paced environment.

### International Service Project – Rwanda Missions Trip

Mar. 2024

*Shelter Them Poverty Relief — Brampton Christian School*

Kigali, Rwanda

- Collaborated within a **cross-functional team** of **15+ members** to plan and execute a **community infrastructure project**, 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 project completion under limited resources.
- Planned and executed **fundraising and budget allocation initiatives**, coordinating financial planning to ensure on-time project completion under **limited funding resources**.

## PROJECTS

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

[GitHub](#)

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

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

[GitHub](#)

- Developed an interactive **Streamlit** application using historical market data (**yfinance API**) that enables users to analyze equities and compute core performance and risk metrics, including **total return, annualized volatility, and maximum drawdown**.
- Implemented **trend detection logic** using log-price **linear regression** to classify equities as uptrend, downtrend, or no clear trend.
- Built **signal analysis** tools, including **moving average crossovers** and **RSI (14)** momentum indicators, with input validation, dynamic plotting, and **CSV export** to support investment analysis.

### Portfolio Risk Engine | *Python, pandas, NumPy, yfinance, Matplotlib*

[GitHub](#)

- Implemented a **Monte Carlo-based portfolio risk engine** in Python to evaluate risk-adjusted returns using historical market data.
- Simulated **5,000 long-only portfolios** with randomized weight vectors and selected the optimal allocation by maximizing the **Sharpe ratio**.
- Implemented core **portfolio risk metrics**, including annualized return, volatility, maximum drawdown, **Value at Risk (VaR)**, and **Conditional Value at Risk (CVaR)**, generating portfolio equity curves and risk-return visualizations.