# Matthew Jackson

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Physics and quantitative methods background with hands on experience in portfolio risk analysis, financial modeling, and AI enabled workflow automation. Current Western MFE student pursuing a career in quantitative finance, combining strong programming skills with a track record of building analytical tools from first principles.

## Education

**Western University** Sept. 2026 – Dec. 2027
*Master of Financial Economics*

**University of Guelph** Sept. 2021 – Apr. 2026
*BSc. Honours Physics, Minors in Mathematics, Economics* *Academic All-Canadian 2021–2026*

- Coursework utilizes **Bloomberg Terminal** for market data, analytics, and financial modeling.
- Leadership Academy alumnus (one of ∼25 varsity athletes selected annually)

## Work Experience

**National Bank Financial** May 2026 – Aug. 2026
*Wealth Management Intern* Oakville, ON

- Performed **risk decomposition**, **return attribution**, and **correlation analysis** on client portfolios using **Python and Excel/VBA**, surfacing concentration and diversification insights that informed advisor rebalancing recommendations.
- Built and deployed **AI agents** to automate client facing workflows (meeting prep, pitchbook generation), cutting prep time for each team member by several hours weekly.
- Automated recurring reporting tasks using **Python, VBA, and PowerShell**, eliminating manual effort in advisor facing outputs and reducing errors.

**Data Annotation Tech** Dec. 2025 – Apr. 2026
*AI Trainer — Physics, Mathematics, and Computer Programming* Remote

- Evaluated **AI model responses** to graduate-level math, physics, and CS prompts across multiple LLMs, **diagnosing failure modes** and **authoring corrective responses** used to inform fine-tuning.

**University of Guelph** Sept. 2023 – Apr. 2025
*Teaching Assistant, Departments of Physics and Mathematics* Guelph, ON

- Supported instruction in **Business Mathematics, Calculus I & II, and Physics I & II**; graded exams and labs, ran office hours and lab help sessions.
- Invigilated and graded midterm and final examinations across multiple course sections.

## Technical Skills

**Languages:** Python | SQL | R | VBA | JavaScript | HTML/CSS | PowerShell

**Libraries & Tools:** NumPy/SciPy | Pandas | Power BI | Excel/VBA | PowerPoint | Streamlit | Git

**Relevant Skills:** Portfolio Risk & Return Analysis | Derivatives Valuation | Statistical & Monte Carlo Modeling | Data Analysis & Visualization | Bloomberg Terminal | AI Tools (Claude, ChatGPT, Copilot)

## Personal Projects

**Options Pricing & Volatility Dashboard** *Python, NumPy, SciPy, Streamlit, Plotly, yfinance*

- Built pricing models for financial options **from first principles** rather than using existing libraries, verifying results against known theoretical benchmarks to machine precision.
- Built a solver that works backward from live market prices to estimate expected volatility, processing **3,800+ live contracts in under 4 seconds**.

**Portfolio Risk Simulation Tool** *Python, NumPy, SciPy, Streamlit*

- Built a **Monte Carlo simulation engine** from scratch to model thousands of possible market scenarios and estimate potential portfolio losses under normal and crisis conditions (VaR/CVaR).
- Decomposed total portfolio risk by individual holding to identify top contributors to downside risk, and validated model accuracy using industry standard statistical testing.

**Portfolio Return Forecasting & Optimization Tool** *Python, PyTorch, Streamlit, SQL*

- Built a deep learning model to forecast multi-asset returns and feed an **optimization algorithm** that allocates portfolio weights to balance risk and return.
- Tested the strategy against historical data using a realistic day by day simulation, comparing performance to simple buy and hold benchmarks on an interactive dashboard.

## Extra-Curricular Activities

**Guelph Gryphons Cheerleading** June 2022 – Apr. 2026

- Captain (2025–26): led ∼40 athletes, managed fundraising and international travel logistics.
- Three consecutive national titles; three international competition wins (2023-2025).

**Guelph Gryphons Varsity Swim Team** Sept. 2021 – Apr. 2026

- Member of Provincial championship team; pre-named to roster every year.
- Balanced 20+ hours weekly training alongside full academic and work commitments.