

# Timofey Generalov

Driven and analytical second-year Mathematics student at UBC with an Economics minor and a focus on quantitative finance. Experienced in algorithmic trading, stochastic modeling, and machine learning through the development of end-to-end trading platforms. Seeking a Summer 2026 quant trading or research internship.

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## EDUCATION

### The University of British Columbia (UBC), Vancouver, BC

Bachelor of Science, Major in Mathematics, Minor in Economics

Expected in April 2028

Concentration: Mathematics of Information

Relevant Coursework: Matrix Algebra, Calculus III, Mathematical Proof, Elementary Statistics, Introduction to Probability, Introduction to Data Science, (Upcoming: Stochastic Processes, Real Analysis, Linear Programming, Econometrics I & II)

## PROJECTS

### Quantitative Equity & Derivatives Analysis Platform | Python, Tkinter, Matplotlib, Pandas, NumPy, Scikit-learn, Google Gemini

- Designed and built a full-featured desktop workstation for equity and derivatives trading, integrating 8 specialized modules spanning idea generation, options pricing, strategy backtesting, and portfolio management.
- Advanced Options & Risk Modeling: Implemented a Monte Carlo engine with Heston, Jump-Diffusion, and Rough Bergomi models, plus a full Greek sensitivity dashboard for first- and second-order risks.
- AI Integration: Leveraged the Gemini API to power an AI Co-Pilot for trade analysis, an LLM-based strategy generator for automated multi-leg options construction, and a financial chatbot for on-demand research.
- Backtesting & Optimization: Developed an event-driven Strategy Tester with parameter sweeps, 15+ performance metrics, and benchmark comparisons against SPY.
- Portfolio & Risk Suite: Built a standalone portfolio analytics system with VaR, rolling volatility, crash stress tests, and tax-lot accounting.
- Designed for performance with multi-threading, multi-processing, and a modular design, enabling seamless workflows from idea discovery to portfolio risk management.

### Dual-AI Forex Trading Assistant: LSTM Scout & RL Manager | Python, PyTorch, Stable-Baselines3, SHAP, OANDA API

- Engineered an end-to-end autonomous trading system in Python to identify, execute, and manage high-probability reversal patterns on the GBP/JPY pair, connecting directly to the OANDA paper trading API for live execution.
- Architected a unique two-part AI system featuring a "Scout" and a "Manager":
  - Scout: A multi-head LSTM model (PyTorch) trained for multi-task learning to simultaneously predict a trade's quality (1-5 stars), reward:risk ratio, and probability of failure.
  - Manager: A Reinforcement Learning agent (PPO, Stable-Baselines3) trained in a custom Gym environment to determine the optimal exit policy for active trades.
- Implemented an explainable AI (XAI) pipeline using SHAP to provide transparency into the LSTM's predictions, identifying the top 5 market features influencing each trading decision.
- Developed a robust feature engineering process that combines technical indicators with a hybrid model of liquidity zone detection, using both DBSCAN clustering on historical price action and multi-timeframe Volume Profile analysis.

## SKILLS

- Programming & Development: Python, Git, GitHub, Tkinter, Matplotlib, Google Gemini API, OANDA API, Telegram Bot API
- Quantitative & Machine Learning: Pandas, NumPy, Scikit-learn, PyTorch, Stable-Baselines3, Gymnasium, SHAP, NLTK
- Financial Concepts: Algorithmic Trading, Derivatives Pricing, Stochastic Modeling, Backtesting, Risk Management (VaR, Stress Testing), Portfolio Analysis

## Certifications & Coursework

- Financial Markets- Yale University (Coursera)
- Machine Learning for Trading- Google Cloud & New York Institute of Finance (Coursera)