Lucas Pirvuti

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Education

University of Waterloo & Wilfrid Laurier University — Waterloo, ON
Double Degree: Bachelor of Computer Science & Bachelor of Business Administration — *Sep 2025 – Apr 2029 (Expected)*

- **Cumulative GPA**: 3.7
- **Clubs**: UW Quant Club, UW Chess Club, UW Cooking Club

Experience

Incoming Quantitative Intern — Jan 2027 – Apr 2027
CanDeal — *Toronto, ON*

Undergraduate Research Assistant — Sep 2026 – Present
University of Waterloo, Statistics and Actuarial Science — *Waterloo, ON*

- Studying optimal proposals for importance sampling across 1,000 simultaneous targets in nested option pricing.
- Extending a 2022 Master of Quantitative Finance project, supervised by Prof. Ben Feng.

Software Engineer Intern — May 2026 – Aug 2026
CanDeal — *Toronto, ON*

- Built Claude agent skills that automatically configure FIX-based trade negotiation flows, cutting QA setup time $\sim$70%.
- Rebuilt real-time security master synchronization between source and target environments.
- Rebuilt the observability layer using Grafana/Prometheus and custom TibcoRV event sources.
- Focused monitoring on pricing flows spanning 10M+ messages per day, plus trade flows.
- Refactored the fixed income security master configurator and datastore to support bond analytics.
- Surfaced price, yield, and PV01/DV01 calculations from the team's QuantLib C++ library in the UI.
- Extended analytics across 7 instrument types, focused on callables, amortizers, and FRNs.

Projects

Daily Holes RL Agent | *Python, PyTorch, Node.js, Playwright* — Nov 2026

- Built a reinforcement learning agent for a daily browser golf game, with PPO written from scratch in PyTorch.
- Ran the game's own physics in a Node sandbox, matching the real game on 324/324 test shots at 48K shots/s.
- Trained on 8M shots to -6.0 strokes per round on 40 held-out courses, 2.4 better than a hand-written baseline.
- Paired the agent with a simulator-guided search and frame-timed browser automation to shoot -21 in a real round.

Limit Order Book Sim | *Python (stdlib only), Nasdaq ITCH* — Aug – Sep 2026

- Reconstructed a 10-level order book by replaying 455K Nasdaq ITCH messages, with 154 tests.
- Validated it against the exchange's own book over 170K comparisons, with zero mismatches on fully observed levels.
- Found passive quoting lost 0.8 cents a share against a 0.2 cent rebate, and fill rate fell from 83% to 6% as latency rose.

Technical Skills

Languages: Java 21, Python, SQL (MySQL, Postgres), C++/C (coursework)
Frameworks & Libraries: Spring Boot, PyTorch, QuantLib, NumPy, SciPy, Pandas
Tools: Git, Docker, Linux/Bash, pytest, Maven, Playwright, Grafana, Prometheus, Claude Code
Concepts: Concurrency, Observability, Agile, FIX Protocol, Reinforcement Learning, Monte Carlo Simulation
Interests: Overwatch (peaked Top 500 competitive)

Awards

Euclid Mathematics Contest: 2025 Honour Roll, Group V, top 2% of 27,000 participants
University of Waterloo: President's Scholarship of Distinction; qualified for the President's Research Award