

Jeffrey Liu

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I like thinking critically to find intelligent solutions to big problems. Hard worker. Broad interests. Love to Learn.

EDUCATION

University of Waterloo Sep. 2018 – Apr. 2023 (Expected)

B. Math., Triple Major in Computer Science, Combinatorics & Optimization, Pure Math.

- + 93.2% Cumulative GPA (95.2% Math GPA, all terms Dean's Honour List)
- + Select Coursework: Reinforcement Learning, Convex Optimization and Analysis, Combinatorial Optimization

WORK EXPERIENCE

Citadel Securities Chicago, IL

Quantitative Research Intern (Low Latency Alpha Research) June – Aug. 2022

- + (NDA) Distributed machine learning and statistical modeling to analyze large high-frequency financial datasets and extract trading signals
- + Designed, implemented, and backtested/simulated quantitative trading algorithms to monetize alphas

Software Engineer Intern (Low Latency Trading) • C++, SystemVerilog (FPGAs) June – Aug. 2021

- + (NDA) Used modern C++ together with specialized hardware in high-frequency trading systems
- + Applied low level network engineering (TCP/IP), statistical modeling, and rigorous testing

Uber ATG Remote

Research Intern • Python (PyTorch, Horovod) May – Dec. 2020

- + (NDA) Owned and led a research project in deep learning + computer vision for self-driving cars
- + Utilized and advanced state-of-the-art in graph neural networks, graph generation, neural architecture search
- + Implemented and designed experiments with reinforcement learning, Bayesian inference
- + Supervisor: [Prof. Renjie Liao](#). Advisor: [Prof. Raquel Urtasun](#)

Uber Eats Remote

Software Engineer Intern (Shopping Mechanics) • Go Jan. – Apr. 2021

- + Developed new Uber Eats checkout back-end; improved user experience and error propagation

Wish San Francisco, CA

Software Engineer Intern (Payments) • Python, ReactJS, MongoDB, Kubernetes May – Aug. 2019

- + Created and owned a dashboard full-stack to monitor and correct issues in merchant payments

PROJECTS

3D Physics Simulator • C++ (OpenGL, Eigen)

- + Implemented a constraint-based rigid body simulator, with joints, springs, and friction simulation
- + Wrote GPU code/shaders in GLSL, calculated Blinn-Phong lighting, shadows, bloom, and more

Euclidean Geometry Automated Theorem Prover • C++, Python

- + Created an AI engine which, given an Olympiad-style geometry problem, automatically finds a solution and outputs a human-readable proof

AWARDS

- + Canadian Computing Olympiad 1x Silver, 1x Bronze
- + Canadian Math Olympiad 2x Qualifier
- + United States of America Math Olympiad Qualifier

INTERESTS

- + **Professional:** applying math to programming, high-performance and data-driven computing
- + **Hobbies:** swimming, [watercolour painting](#), weightlifting (not that good though)