

Jeffrey Liu

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Six years experience in CS/Math contests and SWE. Hard worker. Broad interests. Love to learn.

WORK EXPERIENCE

Wish (ContextLogic Inc)

San Francisco, CA

Full Stack Software Engineer Intern • Python, SQL, ReactJS, MongoDB

May – Aug. 2019

- + Part of the merchant payments team, which handles payment of billions of dollars annually
- + Created a dashboard and RESTful API to automatically detect, diagnose and fix disbursement issues, helped resolve millions of dollars' worth of underpayments/overpayments
- + Researched and experimented novel ways to detect refund fraud attempts, leveraged statistical modeling and machine learning to test hypotheses in production data

PROJECTS

Euclidean Geometry Automatic Theorem Prover • Python

- + Designed an AI engine which automatically solves proof-based and computational Olympiad-level geometry problems
- + Executes depth-first search with template matching schemes and first-order predicate logic
- + Outputs a human legible solution; Planned feature: output a formally (machine) verifiable proof

Python Mathematical Optimization Library • C++ (Eigen), Python

- + Implemented various contemporary algorithms in C++ to solve linear, integer, and convex programming problems; analyzed their runtimes empirically and asymptotically
- + Incorporated a user-friendly symbolic math library (SymPy) for problem inputs in python
- + Experimented with applications: traveling salesman art, machine learning, operations research

ACHIEVEMENTS

- + **Canadian Computing Olympiad 1x Silver, 1x Bronze**
(placed 13th and 15th nationally)
- + **Asian Pacific Mathematical Olympiad 2x Qualifier**
(invited as one of the top 20 Canadian high school students in the COMC)
- + **Canadian Mathematical Olympiad 2x Qualifier**
(placed 12th and 19th nationally)
- + **United States of America Mathematical Olympiad Qualifier**
(invited as one of 242 students out of over 120k AMC participants)
- + **Euclid Mathematics Contest 2018 plaque winner**
(3rd overall, 1st in grade 12 nationwide out of 18.4k participants)
- + **CIBC National Scholarship**
(rewarded annually to the top student entering the University of Waterloo Faculty of Math)
- + **Citi Canada Scholarship**

EDUCATION

University of Waterloo

Sep. 2018 – Apr. 2023 (Expected)

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

- + 93.9% CAV (96.1% Major Average, Dean's Honour List)
- + Select Graduate Coursework: Convex optimization/analysis, Algebraic Enumeration