

Connor Lawless

CONTACT	Cornell University Operations Research & Information Engineering 294 Rhodes Hall, Ithaca, NY 14853	(234) 244-7572 cal379@cornell.edu conlaw.github.io
RESEARCH INTERESTS	Operations research, mathematical programming, statistical learning, integer programming, fair machine learning, interpretable ai	
EDUCATION	Cornell University Ph.D. in Operations Research (4.0 GPA) <i>Thesis Topic:</i> Integer programming methods for socially sensitive machine learning Advisor: Professor Oktay Gunluk	<i>August 2019 - Present</i> <i>Ithaca, NY</i>
	University of Toronto B.Asc. in Industrial Engineering (4.0 GPA) <i>Undergraduate Thesis:</i> The Multi-Armed Investor: Modelling investment decisions through the lens of a multi-armed bandit problem (advised by Prof. Chi-Guhn Lee)	<i>September 2014 - June 2019</i> <i>Toronto, ON</i>
PAPERS	C. Lawless, O. Gunluk. Fair and Interpretable Decision Rules for Binary Classification. <i>Optimization for Machine Learning Workshop, Neurips 2020.</i>	
PATENTS	H. Burhani et al. Trade platform with reinforcement learning. <i>US Patent Application 16426196</i>	
ACADEMIC PRESENTATIONS	Fair and Interpretable Decision Rules for Binary Classification <ul style="list-style-type: none">– ORACL Workshop, Cornell University– AI for Social Good Workshop, IJCAI (Remote)– Machine Learning NeEDs Mathematical Optimization Seminar Series	<i>June 2019</i> <i>January 2021</i> <i>February 2021</i>
TEACHING EXPERIENCE	Data Science, Head Teacher iXperience <ul style="list-style-type: none">– Taught a 6 week intensive data science bootcamp covering python development, machine learning, and data visualization to 30 undergraduate students from the world's top universities.– Supervised 10+ remote industry internships for our students at startups located in South Africa, Europe, and the US.– Previously was a teaching assistant for the course in 2019 in Cape Town. Guest Lecturer Cornell University <ul style="list-style-type: none">– ENGRI 1101 - Engineering Applications of Operations Research– ORIE 6140 - Mathematical Modelling of Operational Systems ORIE 5300: Optimization I, Teaching Assistant Cornell University <ul style="list-style-type: none">– Taught recitation sections on linear programming, duality, and AMPL to 50 masters students.	<i>June 2020 - August 2020</i> <i>Cape Town (Remote)</i> <i>Ithaca, NY</i> <i>November, 2019</i> <i>October, 2020</i> <i>September 2019 - Decemeber 2019</i> <i>Ithaca, NY</i>
HONOURS	Ontario Professional Engineers Foundation for Education Gold Medal <ul style="list-style-type: none">– Awarded to the graduating engineering student at the University of Toronto with the top academic average across all engineering disciplines (1st out of 1000+ students). W.S. Wilson Medal <ul style="list-style-type: none">– Awarded to the top graduating industrial engineering student at the University of Toronto (1st out of 100+ students).	<i>2019</i> <i>2019</i>

Edward L. Donegan Scholarship (\$100K) *2014 - 2019*
– Awarded a full undergraduate academic scholarship to study engineering by the University of Toronto on the basis of scholastic and leadership achievements.

Ben Bernholtz Memorial Prize in Operations Research *2016*
– Awarded to the top undergraduate student at the University of Toronto in operations research on the basis of performance in undergraduate optimization courses.

WORK
EXPERIENCE

Summer Analyst *June 2018 - August 2018*
BlackRock *London, UK*
– Developed a new micro service to disentangle a database dependency from the existing trade management server; reduced downtime of critical system that processed over 1M orders daily.
– Designed and implemented a new group finder and collaboration tool to improve employee moral; project was awarded first place at the internal intern hackathon (out of 10 teams).

AI Scientist *September 2017 - June 2018*
Royal Bank of Canada *Toronto, ON*
– Worked on a team of 3 to build the first reinforcement learning based trade execution algorithm in Canada (patent pending); the algorithm is currently in production and has traded over \$1 billion dollars notionally across Canada and the US between 2017 and 2019.
– Built a custom user interface using React JS and Python to track the algorithm's performance; the interface exposed critical errors in the algorithm, reducing development time, and was distributed to the electronic traders, building trust and increasing the algorithm's adoption rate on the trading floor.
– Presented key milestones to senior management, including the head of RBC Global Markets, and wrote speaking points circulated to the CEO.

Summer Analyst *June 2017 - August 2017*
BlackRock *Seattle, WA*
– Developed a new tool to visualize and analyze customer reporting distribution metrics; currently being rolled out globally on the Aladdin platform to BlackRock's 13,000 employees.
– Rewrote an existing stored procedure to fetch customer profiles; reduced querying time of common use case from 5 minutes to 15 seconds
– Added functionality to sync CRM contacts to sales personnel's phones as part of an internal team intern hackathon; advanced to the national finals (4 out 30 teams) and presented our product to the global head of product management.

Data Science Intern *June 2016 - August 2016*
GetSmarter *Cape Town, SA*
– Developed a ridge regression model to discover that GetSmarter was spending 15% more than they needed on academic advisor support; presented the results to the Director of Education and CFO.
– Integrated data from GetSmarter's database, phone call logs, and CRM system to create the company's first data pipeline for statistical modelling.

LEADERSHIP
EXPERIENCE

Activities Planner *April 2020 - Present*
Operations Research Graduate Association *Ithaca, NY*
– Organizing social activities for both PhD students and faculty

Managing Director, Start-up *April 2020 - February 2019*
You're Next Career Network *Toronto, ON*
– Led a team of 10 to run Canada's largest Startup Career Fair with 90 startups, and 3000+ students (revenue = \$40,000+)
– Pioneered Entrepreneurship Week, a week-long case competition to expose students to entrepreneurship, that connected 8 startup mentors to 100+ students

Archivist*March 2015 - March 2016***University of Toronto Engineering Society***Toronto, ON*

- Led a team of 15 to manage the faculty's historical artifacts; expanded the portfolio to include community outreach, an online services team, and a documentary filmmaking team comprising over 80 volunteers.
- Awarded Project Director of the Year, an award given to the three engineering society project directors deemed to have done the best job with their respective positions over the 2015-16 year out of 22 project directors.

**RELEVANT
SKILLS****Languages:**

English - Proficient

French, German - Intermediate

Programming:

Python, R, Java, SQL, MATLAB, C, Gurobi

LaTeX, ReactJS, HTML, Windows/Unix Environment

Development:

Git, SVN

**GRADUATE
COURSEWORK****Cornell University**

MATH 4130 Honors Real Analysis

MATH 4330 Honors Linear Algebra

ORIE 6300 Mathematical Programming

ORIE 6330 Graph Theory

ORIE 6500 Applied Stochastic Processes

ORIE 6700 Statistical Principles

ORIE 6746 Causal Inference

ORIE 6750 Optimal Learning

ORIE 7790 High Dimensional Probability & Statistics

**PROFESSIONAL
MEMBERSHIPS**

Institute for Operations Research and the Management Sciences (INFORMS)

National Organization of Gay & Lesbian Science and Technology Professionals (NOGLSTP)