## Connor Lawless

Contact	Cornell University Operations Research & Information Engineering 294 Rhodes Hall, 136 Hoy Road, Ithaca, NY 14853	cal379@cornell.edu https://conlaw.github.io		
Research Interests	My research interests lie at the intersection of <i>computational integer programming and interpretable</i> and fair machine learning.			
Education	<b>Cornell University</b> Ph.D. in Operations Research and Information Engine M.S. in Operations Research and Information Engine - PhD Advisor: Oktay Günlük - Thesis: Integer Programming Approaches for Trust	Ithaca, NY May 2024, expected December 2022 worthy Machine Learning		
	<b>University of Toronto</b> B.A.Sc. in Industrial Engineering, <i>High Honors</i>	Toronto, ON April 2019		
Working Papers	Enabling Interactive Decision Support via Large Language Models and Constraint Programming Connor Lawless, Jakob Schoeffer, Kael Rowan, Shilad Sen, Jina Suh, Bahar Sarrafzadeh Under Review			
	Cluster Explanations via Polyhedral Descriptions: A Scalable Column Generation Framework Connor Lawless, Oktay Günlük In preparation for Operations Research			
PUBLICATIONS	Fair Minimum Representation Clustering Connor Lawless, Oktay Günlük International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (2024)			
	Interpretable and Fair Decision Rules via Column Generation Connor Lawless, Sanjeeb Dash, Oktay Günlük, Dennis Wei Journal of Machine Learning Research (2023)			
	Cluster Explanation via Polyhedral Description Connor Lawless, Oktay Günlük International Conference on Machine Learning (2023)			
	Interpretable Clustering via Multi-Polytope Machines Connor Lawless, Jayant Kalagnanam, Lam Nguyen, Dzung T. Phan, Chandra Reddy AAAI Conference on Artifical Intelligence (2022)			
	<b>Two-Stage Approach to Routing with Driver Preferences via Heatmaps</b> <b>Connor Lawless</b> , Sotiris Ntanavaras, Anders Wikum <i>Proceedings of the Amazon-MIT Last Mile Vehicle Routing Challenge (2022)</i>			
	Fair and Interpretable Decision Rules for Bina Connor Lawless, Oktay Günlük NeurIPS Workshop on Optimization in Machine Lea IJCAI Workshop on AI for Social Good (2021)	ary Classification rning (2020)		
Patents	<b>Trade Platform with Reinforcement Learning</b> Hasham Burhani, Shary Mudassir, Xiao Qi Shi, <b>Connor Lawless</b>			

US Patent, Granted in 2023

## Interpretable Clustering via Multi-Polytope Machines

Dzung T. Phan, **Connor Lawless**, Jayant R. Kalagnanam, Lam M. Nguyen, Chandra K. Reddy *Patent Application in US (2021)* 

Academic	Cluster Explanation via Polyhedral Description				
Presentations	<ul> <li>Cornell ORIE PhD Colloquium, Ithaca NY</li> <li>Making Sense of Explainable ML, Lorentz Center at the University of Leiden</li> <li>October 2022</li> </ul>				
	- Fidelity AI Center Seminar Benote				
	– Thematic Einstein	- Thematic Finstein Seminar on Optimization and ML Berlin Germany April 2023			
	- NYC Operations Day (Poster), NYC NY				
	- SIAM Optimization Conference. Seattle WA May 2023				
	<ul> <li>International Federation of Operations Research Society Meeting, Santiago Chile July 2</li> </ul>				
	– ICML (Poster), Honolulu HI July 2023				
	Fair Minimum Representation Clustering				
	- NYC Joint PhD Colloquium May 2023				
	Interpretable Clustering via Multi-Polytope Machines				
	– IBM Research Applied AI Seminar, Remote				
	– Cornell ORIE PhD	October 2021			
	- INFORMs Optimization Society, Greenville SC				
	- European Conference on Operational Research, Espoo Finland July 2022				
	Fair and Interpretable Decision Rules for Binary Classification				
	- ORACL Workshop, Cornell University		June 2019		
	- AI for Social Good Workshop, IJCAI (Remote)		January 2021		
	– Machine Learning NeEDs Mathematical Optimization Seminar Series				
	<ul> <li>European Conference on Operational Research (Remote)</li> <li>INFORMs, Anaheim CA</li> </ul>		October 2021		
_	Instructor	ODIE 5270; Die Data Taskralaniag Coming 2002 Come	.11		
Teaching	Instructor	Teaching Effectiveness: 4.45/5 (Dept. Avg. 2.00)	""		
EXPERIENCE	Instructor ORIE 6125: Computational Methods in OR Spring 2023 - Cornell		- Cornell		
	mstructor	Teaching Effectiveness: $4.63/5$ (Dept. Avg.: 3.90)	- 00///01/		
	Instructor	Data Analytics 2021-2022 - iXnerience			
	monución	Teacher Bating: 4.9/5 (Fall '21), 5/5 (Spring '22)			
	Teaching Assistant	ORIE 5135: Computational IP. Spring 2022 - Cornell			
	Teaching Assistant	ORIE 4740: Learning with Big Messy Data. Fall 2021 -	Cornell		
	Instructor	Data Science Bootcamp 2020 - 2021 iXperience			
		Teacher Rating: 4.9/5 (Summer '20), 4.9/5 (Winter '21)			
	Guest Lecturer	ORIE 6140: Mathematical Modeling for OR, Fall 2020 -	Cornell		
	Teaching Assistant	ORIE 3300: Optimization I, Fall 2019 - Cornell			
	Guest Lecturer	ENGRI 1101: Engineer Applications of OR, Fall 2019 - 0	Cornell		
Honors	Outstanding Graduate Instructor, Cornell ORIE 2023				
	EEAMO Doctoral Consortium Selected Attendee 2023				
	Michigan Institute for Data Science Future Leaders Summit Selected Attendee 2023				
	Outstanding Reviewer, AISTATS 2023				
	FAccT Doctoral Consortium Selected Attendee 2022				
	Ontario Professional Engineers Foundation for Education Gold Medal, University of Toronto $2019$				
	W.S. Wilson Medal, University of Toronto 2019				
	Dean's List, University of Toronto 2014-2019				
	Edward L. Donegan Scholarship (\$100K), University of Toronto 2014-2019				
	Ben Bernholtz Memori	al Prize in Operations Research, University of Toronto	2016		

Service	<ul> <li>In Cornell:         <ul> <li>Mentoring: Graduate Student Mentor with Operations Research Graduate Association (2020-2023)</li> <li>Operations Research Graduate Association: Co-President (2021-2022), Visit Weekend Coordinator (2020 - 2021), Mentorship Director (2022 - 2023), URM PhD Application Support Program Officer (2023 - 2024)</li> </ul> </li> <li>In Conferences:         <ul> <li>Session Chair: INFORMS Annual Meeting, EURO Annual Meeting, IFORS Triennial Meeting</li> <li>Referee: AISTATS, FAccT, ICML, AAAI, NeurIPS</li> </ul> </li> </ul>			
	In Journals: - Referee: Journal of Machine Learning Research, INFORMS Journal of Computing, Operations Research			
Industry Experience	Microsoft Research, Research Intern Project Title: "Enabling Interactive Decision Support via Large Language Models and Constraint Programming"			
	<b>IBM Research</b> , Research InternMay - August 2021Project Title: "Interpretable Clustering via Multi-Polytope Machines"May - August 2021			
	<b>Cornell University</b> , COVID-19 Class Scheduling Team June - September 2020 Led the implementation of the primary optimization models to schedule all classes at Cornell during COVID-19.			
	Royal Bank of Canada, A.I. ScientistSeptember 2017 - June 2018Project Title: "Deep Reinforcement Learning for Trade Execution"			
	BlackRock, Summer Analyst	June-August 2017, 2018		
	GetSmarter, Data Science Intern	June-August 2016		
Relevant Skills	Languages:	English - Native French, German, Spanish - Beginner		
	Programming:	Python, R, Java, SQL, MATLAB, C, Gurobi LaTeX, ReactJS, HTML, Windows/Unix Environment		
	Development:	Git, SVN		
Professional Memberships	Institute for Operations Research and the Management Sciences (INFORMS) Queer in AI Out in STEM			
References	<b>Oktay Günlük</b> , Professor of Practice, Operations Research and Information Engineering, Cornell University, ong5@cornell.edu			
	David Shmoys, Laibe/Acheson Professor of Business Management & Leadership Studies, Operations Research and Information Engineering, Cornell University, david.shmoys@cornell.edu			
	Andrea Lodi, Andrew H. and Ann R. Tisch Professor, Operations Research and Information Engineering, Cornell University, andrea.lodi@cornell.edu			