

Violet (Xinying) Chen

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Carnegie Mellon University
Tepper School of Business
4765 Forbes Ave, Pittsburgh, PA 15213

Email: xinyingc@andrew.cmu.edu
Phone: (404)432-9605
Website: vxychen.github.io

EDUCATION **Carnegie Mellon University** Pittsburgh, PA
Ph.D. in Operations Research (Expected) May 2022
Dissertation: Fairness Methods in Optimization and Artificial Intelligence
Committee: Hoda Heidari, John Hooker (chair), Fatma Kılınç-Karzan, Alec Morton
M.S. in Operations Research May 2019

Georgia Institute of Technology Georgia, GA
B.S. in Applied Mathematics May 2017
B.S. in Business Administration May 2017

RESEARCH INTERESTS Fairness and Ethics of Artificial Intelligence, Data-driven Optimization, Preference Learning

PUBLICATIONS Published Papers
Combining Leximax Fairness and Efficiency in a Mathematical Programming Model, V. Chen, J.N. Hooker. *European Journal of Operational Research*. 2021.
A Just Approach Balancing Rawlsian Leximax Fairness and Utilitarianism, V. Chen, J.N. Hooker. *AAAI/ACM Conference on AI, Ethics, and Society*. 2020.

Papers under Review
A Guide to Formulating Equity and Fairness in an Optimization Model, V. Chen, J.N. Hooker. *Submitted to Annals of Operations Research*. August 2021.

Preprints in Preparation
Online Convex Optimization Perspective for Learning from Dynamically Revealed Preferences, V. Chen, F.Kılınç-Karzan. ArXiv: 2008.10460. *Target submission: October 2021*.
Welfare-based Fairness through Optimization, V. Chen, J.N. Hooker. ArXiv: 2102.00311. *Target submission: December 2021*.

Working Papers
Block Coordinate Descent Methods for Training Fair SVMs, V. Chen.
Eliciting Dynamic Moral Preferences, V. Chen, H. Heidari, D. Leben, J. Williams.

HONORS AND AWARDS	Egon Balas Award for Best Student Paper in Operations Research	March 2019
	William Larimer Mellon Fellowship	August 2017–May 2022

PRESENTATIONS	Fairness through Optimization in Artificial Intelligence Applications	
	INFORMS Annual Meeting, Anaheim, CA	(Scheduled) October 2021

	Formulate, Achieve and Understand Welfare-based Fairness	
	CMU Fairness, Accountability, Transparency and Ethics	July 2021
	Summer Series, Virtual	

	Online Convex Optimization Perspective for Learning from Dynamically Revealed Preferences	
	INFORMS Annual Meeting, Virtual	November 2020

	Combining Leximax Fairness and Efficiency in a Mathematical Programming Model	
	Poster, AAAI/ACM Conference on AI, Ethics, and Society, New York, NY	February 2020
	INFORMS Annual Meeting, Seattle, WA	October 2019

TEACHING EXPERIENCE	Instructor, Carnegie Mellon University	
	Operations Management , 70-371	Hybrid, Spring 2020
	<i>Undergraduate core course.</i> Key topics: process analysis, queuing theory, inventory model, supply chain, operations strategy.	
	Designed course materials; taught bi-weekly lectures; prepared homework and exams; transitioned course into virtual format with live lectures.	
	<i>Teaching quality evaluation: 4.19/5.</i>	
	21 out of 24 enrolled students responded.	

	Teaching Assistant, Carnegie Mellon University	
	Optimization , 45-751	Virtual, Spring 2021 (as Head TA); Fall 2019
	<i>MBA core course.</i> Key topics: linear programming, network models, integer programming, nonlinear programming.	
	Guided and coordinated TA grading and office hour; prepared and graded homework and exams.	
	Probability and Statistics , 45-750/46-880	Virtual, Fall 2020; Hybrid, Fall 2019
	<i>MBA/MSBA core course.</i> Key topics: random variables, normal distribution, hypothesis testing, regression, inference.	
	Prepared homework solutions; designed bi-weekly online quizzes; led office hours.	
	Business Networks , 45-951	Virtual, Fall 2020

	<p><i>MBA elective</i>. Key topics: social networks, auctions in networks, information networks, information cascade.</p> <p>Verified homework and quizzes; led office hours.</p> <p>Linear Programming, 47-834 Fall 2019, Fall 2018</p> <p><i>PhD core course</i>. Key topics: linear optimization modeling, theory and algorithms. Graded homework and exams; gave substitute lecture on column generation; led office hours.</p> <p>Convex Optimization, 47-851 Spring 2019</p> <p><i>PhD core course</i>. Key topics: duality, structured conic optimization, algorithms for large-scale convex optimization. Graded homework; led office hours.</p> <p>Optimization for Business, 70-257 Spring 2019</p> <p><i>Undergraduate core course</i>. Key topics: linear programming, network models, dynamic programming, integer programming. Taught weekly recitations; prepared and graded homework and exams.</p>	
ACTIVITIES	<p>Mechanism Design for Social Good (MD4SG) working group Fall 2021–Present</p> <p>on Discrimination and Equality in Algorithmic Decision-making</p> <p>CMU Fairness, Ethics, Accountability, Fall 2019–Present</p> <p>and Transparency Reading Group, Hybrid</p> <p>ACM FAccT 2021 Doctoral Consortium, Virtual March 2021</p>	
SERVICES	<p>Ad-Hoc Journal and Conference Review</p> <p>INFORMS Journal on Computing, NeurIPS 2021, ICML 2021, CP 2021</p> <p>Conference and Panel Organizing</p> <p>YinzOR 2021 Student Conference, Virtual August 2021</p> <p><i>Organization committee, job market panel moderator</i></p> <p>CMU Women in Academia Panel, Virtual December 2020</p> <p><i>Organization committee chair</i></p> <p>YinzOR 2019 Student Conference, Pittsburgh, PA August 2019</p> <p><i>Conference co-chair</i></p> <p>Professional Organization</p> <p>INFORMS Education Strategy Committee October 2019–Present</p> <p>CMU INFORMS Chapter</p> <p><i>President</i> June 2020–June 2021</p> <p><i>Board member</i> June 2020–Present</p>	
SKILLS	<p>Programming: Gurobi, Mosek, Python, C++, MATLAB</p> <p>Languages: English (native), Chinese (native), Japanese (proficient)</p>	

REFERENCES

John Hooker, Ph.D.

T.Jerome Holleran Professor of Business Ethics and Social Responsibility
Professor of Operations Research
Tepper School of Business, Carnegie Mellon University
5000 Forbes Avenue, Pittsburgh, PA 15213
Email: jh38@andrew.cmu.edu

Fatma Kılınç-Karzan, Ph.D.

Associate Professor of Operations Research
Tepper School of Business, Carnegie Mellon University
5000 Forbes Avenue, Pittsburgh, PA 15213
Email: fkilinc@andrew.cmu.edu

Hoda Heidari, Ph.D.

Assistant Professor, Machine Learning Department and the Institute for Software Research
School of Computer Science, Carnegie Mellon University
Gates and Hillman Hall 8108, Pittsburgh, PA 15213
Email: hheidari@cmu.edu