VIOLET (XINYING) CHEN

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EDUCATION

Carnegie Mellon University
Doctor of Philosophy in Operations Research August 2017-Present
Dissertation: Optimization Methods for Understanding and Attaining Fairness in AI

Carnegie Mellon University
Master of Science in Operations Research May 2019

Georgia Institute of Technology
Bachelor of Science in Applied Mathematics May 2017
Bachelor of Science in Business Administration May 2017
Highest Honor

PUBLICATIONS

Published Papers

A Just Approach Balancing Rawlsian Leximax Fairness and Utilitarianism, V. Chen, J.N. Hooker. *AIES '20: Proceedings of the 2020 AAAI/ACM Conference on AI, Ethics, and Society*, 221-227.

Solvability of implicit final size equations for SIR epidemic models, S. Bidari, V. Chen, D. Peterson, D. Pittman, P.L. Simon. *Mathematical Biosciences*, 282, 181–190, 2016.

Papers under Review

Fairness through Optimization, V. Chen, J.N. Hooker. *Submitted*. Preprint available at https://arxiv.org/abs/2102.00311.

Fair Sequential Minimal Optimization for Fair Support Vector Machines, V. Chen. *Submitted*.

Online Convex Optimization Perspective for Learning from Dynamically Revealed Preferences, V. Chen, F. Kılınç-Karzan. Submitted. Preprint available at https://arxiv.org/abs/2008.10460.

Balancing Fairness and Efficiency in an Optimization Model, V. Chen, J.N. Hooker. *Submitted, Operations Research*. Preprint available at https://arxiv.org/abs/2006.05963.

Working Papers

Modeling and Eliciting Dynamic Moral Preferences, V. Chen, H. Heidari.

HONORS AND AWARDS

Egon Balas Award for Best Student Paper in Operations Research/Algorithms, Combinatorics, and Optimization — March 2019

William Larimer Mellon Fellowship — August 2017-August 2022

PRESENTATIONS

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

A Just Approach Balancing Rawlsian Leximax Fairness and Utilitarianism**,** (poster) *Third AAAI/ACM Conference on AI, Ethics, and Society, February 2020, New York, NY.*

Combining Leximax Fairness and Utilitarianism in a Mathematical Programming Model, *INFORMS Annual Meeting, October 2019, Seattle, WA.*

TEACHING EXPERIENCE

Instructor, Carnegie Mellon University

Operations Management, 70-371 (Undergraduate Core Course) — Spring 2020

Teaching Assistant, Carnegie Mellon University

Probability and Statistics, 45-750 (MBA), 46-880 (MSBA) — Fall 2020, Fall 2019
Linear Programming, 47-834 (PhD Core Course) — Fall 2019, Fall 2018
Optimization, 45-751 (MBA Core Course) — Fall 2019
Convex Optimization, 47-851 (PhD Core Course) — Spring 2019
Optimization for Business, 70-257 (Undergraduate Core Course) — Spring 2019

Teaching Assistant, Georgia Institute of Technology

Linear Algebra, Math 1553 (Undergraduate Core Course) — Spring 2017
Differential Calculus, Math 1551 (Undergraduate) — Fall 2016

PROFESSIONAL EXPERIENCE

INFORMS CMU Student Chapter

President — July 2020-Present

Organized virtual Women in Academia Panel and Discussion, which had 4 panelists and over 20 participants in different stages of academia careers; provide overall leadership and direction to the chapter organization including goal establishment, event planning and member recruitment.

YinzOR 2019 Student Conference Co-Chair — March 2019-August 2019

Led the overall planning of the 3rd CMU YinzOR student conference; managed marketing and promotion activities; improved sponsorship opportunity materials to help secure over $10000 external funding.

NCR Corporation, Duluth, GA
Data Science Intern, Services Enablement May 2017-August 2017
Developed best practice guidelines for standardizing and optimizing design of Tableau dashboards; analyzed features of pre-clustered report generation queries; recommended cluster profiling strategies.
MIS Intern, Data Governance June 2016-August 2016
Leveraged Oracle Enterprise Data Quality as the tool to automate periodical HR data auditing; created Tableau dashboards on partner information for data visualization and insight exploration.

RELEVANT COURSEWORK/READING GROUP

Operations research: Linear programming, Integer programming, Convex optimization, Graph theory, Combinatorial optimization, Constraint programming
Mathematics: High dimensional statistics, Discrete math
Computer science: Fairness in machine learning, AI ethics, Computational social choice, Algorithms
Operations management: Inventory theory, Queueing theory

COMPUTER SKILLS

Optimization software: Gurobi, CPLEX, Mosek
Programming language: Python, MATLAB, R, Java
Other software: Tableau, Microsoft Excel Risk Solver, Oracle EDQ, Visio

LANGUAGES

Chinese: native language
English: speak, read and write with high proficiency
Japanese: speak, read and write with basic competence