NINGJI WEI

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RESEARCH INTERESTS

· Optimization under uncertainty, network optimization, graph interdiction, integer programming, stochastic processes on graph, machine learning methods, and their applications in process engineering, vehicle routing, supply chain design, and inventory policies.

RESEARCH EXPERIENCE

Texas Tech University   July 2022 - Now

· Assistant Professor in the Department of Industrial, Manufacturing & Systems Engineering

Carnegie Mellon University's Heinz College   July 2020 - June 2022

· Postdoctoral Researcher

EDUCATION

University at Buffalo, The State University of New York   Aug 2016 - June 2020

· Ph.D., Industrial and Systems Engineering
Advisor: Dr. Jose L. Walteros
Dissertation: Integer Programming Methods for Binary Interdiction Games
Committee: Dr. Mark H. Karwan, Dr. Shi Li, Dr. Jose L. Walteros

University at Buffalo, The State University of New York   Aug 2014 - June 2016

· M.Sc., Industrial and Systems Engineering
Advisor: Dr. Jose L. Walteros

Southeast University, Nanjing, China   Aug 2004 - June 2008

· B.S., Logistics Management

AWARDS AND HONORS

· 2022 INFORMS Junior Faculty (JFIG) Paper Competition First Place.
· Teaching Assistant of the Year, Department of ISE, University at Buffalo, SUNY, 2019.
· Employee of The Year, Ping An Insurance (Group) Company of China, LTD, 2009.

PUBLICATIONS

Ningji Wei, Jose L. Walteros, Rajan Batta, "On the Distance Between Random Events on a Network." Published in *Networks*.

Ningji Wei, Jose L. Walteros, Foad Mahdavi Pajouh, "Integer Programming Formulations for Minimum Spanning Tree Interdiction." Published in *INFORMS Journal on Computing*.

Ningji Wei, Jose L. Walteros, McKenzie R Worden, Héctor J Ortiz-Peña "A Resiliency Analysis of Information Distribution Policies over Mobile Ad Hoc Networks." Published in *Optimization Letters*.

Ningji Wei, Jose L. Walteros, "Integer Programming Methods for Binary Interdiction Games." Published in **European Journal of Operational Research**.

Cai Gao, **Ningji Wei**, Jose L. Walteros, "An Exact Approach for Solving Pickup-and-Delivery Traveling Salesman Problems with Neighborhoods." Published in **Transportation Science**.

Ningji Wei, Peter Y. Zhang, "Adjustability in Robust Linear Optimization." Accepted by **Mathematical Programming**.

PAPERS UNDER REVIEW

Ningji Wei, Jose L. Walteros, "On Supervalid Inequalities for Binary Interdiction Games." Second round review in **Mathematical Programming**.

PAPERS IN PREPARATION

Ningji Wei, Peter Y. Zhang, "Sparsity in Dynamic Robust Optimization."

Thanakrit Piyachayawat, **Ningji Wei**, "Network Enhancement via Robust Interdiction Games."

Ningji Wei, "General 0-1 Integer Program Reformulation: A Set System Approximation Approach."

Zolykha Rezaei, **Ningji Wei**, Peter Y. Zhang, "Optimality of Affine Policies in Dynamic Robust Linear Optimization."

Hao Hao, Peter Y. Zhang, **Ningji Wei**, "Robust Designs of Critical Supply Chains."

Zolykha Rezaei, **Ningji Wei**, "A New Type of Decision Policy for Mixed Integer Optimization Problems."

Ningji Wei, Hur-E-Jannat Moni, Qiang Jiang, Yanliang Zhang, Minxiang Zeng, "Shaped-Induced Resolution Optimization for Multi-Material 3D Printing: A Case Study on Coffee-Ring Effect."

Ningji Wei, Xian Yu, "Robustification of Optimization Problems via Distribution Transformations."

CONFERENCE PROCEEDINGS AND PRESENTATIONS

Ningji Wei, "General 0-1 Integer Programs Reformulation: A Set System Approximation Approach." INFORMS Optimization Society Conference 2024.

Ningji Wei, Peter Y. Zhang, "Sparsity in Dynamic Robust Optimization." 2023 INFORMS annual meeting.

Ningji Wei, Peter Y. Zhang, "Adjustability in Robust Linear Optimization." SIAM Conference on Optimization 2023.

Ningji Wei, Peter Y. Zhang, "Adjustability in Robust Linear Optimization." 2023 XVI International Conference Stochastic Programming.

Ningji Wei, Jose L. Walteros, "Supervalid Inequalities in Binary Interdiction Games." 2022 INFORMS annual meeting.

Ningji Wei, Peter Y. Zhang, "Adjustability in Robust Linear Optimization." International Conference on Continuous Optimization 2022.

Ningji Wei, Peter Y. Zhang, "Adjustability in Robust Linear Optimization." INFORMS Optimization Society Conference 2022.

Ningji Wei, Peter Y. Zhang, "Optimality Criteria of Constant and Affine Policies in Adjustable Robust Optimization." 2021 INFORMS annual meeting.

Ningji Wei, Jose L. Walteros, "Integer Programming Methods for Solving Binary Interdiction Games." 2021 INFORMS annual meeting.

Ningji Wei, Peter Y. Zhang, "Affine and Constant Policies in Adjustable Linear Robust Optimization: A New Perspective." 2021 MOPTA.

Ningji Wei, Peter Y. Zhang, "Affine and Constant Policies in Adjustable Linear Robust Optimization: A New Perspective." 2021 CORS Annual Conference.

Ningji Wei, Peter Y. Zhang, "On the Optimality of Parameterized Policies in Adjustable Robust Optimization." 2020 INFORMS annual meeting.

Ningji Wei, Cai Gao, Jose L. Walteros, "Optimality Criteria for the Closed-Enough Travelling Salesman Problem with General-Shaped Regions." 2020 INFORMS annual meeting.

Ningji Wei, Peter Y. Zhang, "On the Optimality of Parameterized Policies in Adjustable Robust Optimization." 2020 INFORMS annual meeting.

Ningji Wei, Jose L. Walteros, "A Resiliency Analysis of Information Distribution Policies over Mobile Ad Hoc Networks." 2019 INFORMS annual meeting.

Ningji Wei, Jose L. Walteros, "Conditional Supervalid Inequalities on Graph Interdiction Problems." 2019 IISE annual meeting, Doctoral Curriculum Invited Poster Competition.

Ningji Wei, Jose L. Walteros, "Supervalid Inequalities for Network Interdiction Problems." 2018 INFORMS annual meeting.

Ningji Wei, Rajan Batta, Jose L. Walteros, "Statistics of Distance Between two Random Events in a Network." 2018 INFORMS annual meeting.

Ningji Wei, Jose L. Walteros, "Conditional Supervalid Inequalities on General Graph Interdiction Problems." 2018 INFORMS Optimization Society Conference.

Ningji Wei, Jose L. Walteros, "Supervalid Inequalities for Network Interdiction Problems." 2017 INFORMS annual meeting.

Ningji Wei, Jose L. Walteros, F. Mahdavi Pajouh, "Integer Programming Formulations for Minimum Spanning Tree Interdiction." 2017 INFORMS annual meeting.

Jose L. Walteros, **Ningji Wei**, F. Mahdavi Pajouh, "Integer Programming Formulations for Minimum Spanning Tree Interdiction." 2016 INFORMS Optimization Society Conference.

PROFESSIONAL DEVELOPMENT ACTIVITIES

Chaired on session of "Recent Advances in Network Optimization and Their Applications" at INFORMS 2023 Annual Meeting.

Co-chaired on mini-symposium of "Recent Advances in Affine/Linear Decision Rules: Theory and Applications" at SIAM Conference on Optimization 2023.

Chaired on session of "Recent Advances in Multi-level Network Optimization and Their Applications" at INFORMS 2022 Annual Meeting.

Chaired on session of "Recent Advances in Multi-level Network Optimization and Their Applications" at CORS/INFORMS International Conference 2022.

TEACHING EXPERIENCE

Texas Tech University

· Convex Analysis and General Duality	Spring 2024
· Probabilistic Operations Research	Spring 2023
· Mathematical Foundations of Operations Research	Fall 2022

University at Buffalo, SUNY

· Stochastic Methods	Fall 2019
· Systems Modeling and Operations Research 2	Spring 2019
· Introduction to Linux Server & CCR	Fall 2018

PEER REVIEW ACTIVITIES

· Reviewer for Networks, Theoretical Computer Science, Informs Journal on Computing, Optimization Letters, Journal of Global Optimization, Annuals of Operations Research, Naval Research Logistics, European Journal on Operational Research, Computers and Operations Research, Production and Operations Management.

PROFESSIONAL EXPERIENCE

Ping An Insurance (Group) Company of China, LTD — 2012 - 2014
Leader of Systems Management Team, Operation Management Center

· Analyzed operations in department, designed and implemented systematic solutions.
· Created Data Transformation & Presentation Tool.

Ping An Insurance (Group) Company of China, LTD — 2008 - 2012
System Engineer, Business Analyst

· Designed HR Service System.
· Designed Employee Service System.
· Project manager for RFID archives management system.

PROFESSIONAL MEMBERSHIP

INFORMS: The Institute for Operations Research and the Management Sciences.