Xin (Shireen) WANG

Tel: +1 4382217755 **E-mail:** xin.wang@hec.ca

Research area: Operations Research, Robust Optimization, Transportation and Logistics, Last-Mile Delivery, Optimization Algorithms, Machine Learning Algorithms.

EDUCATION

HEC Montreal (Business School, University of Montreal) Sep. 2020- Expected Dec. 2024

Ph.D. student in Management Science, Department of Decision Science, GPA: **3.76/4.0;**

Nanjing University (NJU): Excellent Graduate Sep. 2017- Jun. 2020

Master's degree in Industrial Engineering, Department of Management Science and Engineering, GPA: **3.6/4.0;**

Nanjing University of Aeronautics and Astronautics (NUAA): Excellent Graduate Sep. 2013- Jun. 2017

Bachelor's degree in Industrial Engineering, Department of Industrial Engineering, GPA: **3.6/4.0;**

ACADEMIC PAPERS

- Xin Wang, Okan Arslan, Jean-François Cordeau, Erick Delage. Value of Consolidation and Coordination Among Drivers in Last-Mile Delivery. Working Paper.
- Xin Wang, Okan Arslan, Jean-François Cordeau, Erick Delage. Optimizing Ultra-fast Delivery Networks and Service Guarantees under Uncertainty. Major in *Manufacturing & Service Operations Management*.
- Xin Wang, Okan Arslan, Erick Delage. (2024). Crowdkeeping in Last-mile Delivery. *Transportation Science*, *58*(2), 474-498.
- Xin Wang, Lianmin Zhang, Houcai Shen, Yonghong Kuo. (2021). Target-oriented Robust Location-Transportation Problem. *Transportation Research Part B: Methodological*, 153: 1-20.
- Xin Wang, Shinan Zhao, Haiyan Xu. (2019). Two-stage Pricing Model of Hybrid Channel Supply Chain Based on Graph model for Conflict Resolution. *Industry Engineering and Management*, 24(03):19-34.
- Xin Wang, Yuanwei Liu, Haiyan Xu. (2016). Research on a Coordination Degree Model for the Green Economy Based on the Multi-dimensional Utility Mergence Method. *China Management Science*, 24(S1):671-677.

PROFESSIONAL EXPERIENCE

Canadian Tire & University of Toronto Research Assistant Feb. 2024-

- Investigating the causal relationship among staffing levels, sales, inventory, and other features using Causal Inference.
- Constructing a staff rescheduling problem to address the uncertainty of store traffic and employee no-shows.
- Boosting sales by 3.4% by designing the optimal staffing level for each store by department, season, and weekdays.

Huatai Securities Co. Ltd. Intern of Algorithm Apr. 2019- Aug. 2019

- Constructed a multiple-factor model with a 2.65% excess return rate by forecasting future return rate and risk and by optimizing the quadratic cost function with Stochastic Gradient Descent Algorithm.
- Developed stock trading evaluation system by recognizing trading strategies using Machine Learning Algorithms (Random Forest, Neural Network) and by designing the evaluation system through working with front-end developer.

The University of Hong Kong Research Assistant Dec. 2018- Jan. 2019

- Constructed a robust Vehicle Routing Problem for the electric bus system's charging schedule and path planning using real data from the HK Transportation System.
- Applied Benders Decomposition Algorithm to enhance the model's solvability, efficiency, and effectiveness.

Suning Co. Ltd. Intern of Modelling Jul. 2018- Aug. 2018

- Constructed the two-stage robust target-oriented location-transportation problem under uncertain demand.
- Implemented the Benders Decomposition Algorithm and Gurobi solver to efficiently solve the large-scale problem.
- Adopted a site-selection scheme and an automatic replenishment system to fulfill dynamic demand on time.

TEACHING EXPERENCE

HEC Montreal Teaching Assistant Jan. 2022- Apr. 2022

- Ph.D. level course MATH 80624A "Quantitative Risk Management Using Robust Optimization".

HEC Montreal Lecturer Jan. 2023- Apr. 2023

- Chapter on "Adjustable Robust Linear Programming and Its Value of Flexibility Using Tractable Decision Rules" of MATH 80624A.

RESEARCH EXPERIENCE

On-time Meal and Grocery Delivery with Driver Coordination, HEC Montreal Oct. 2023-

- Investigated the high efficiency and profitability of consolidated delivery services that enable consumers to order from multiple grocery stores in a single order served by the same driver, such as DoubleDash, Instacart, and Epipresto.
- Evaluated the value of using meet-up points to serve orders and used end-to-end learning (Neural Network) to learn the meet-up locations and customer assignment decisions to improve the efficiency of the solution procedure.

Ultra-fast Delivery Networks and Service Guarantees, HEC Montreal Apr. 2022-Sep. 2023

- Constructed the network design problem for ultra-fast delivery services with varying service polities and guarantees under uncertain travel times and customer order arrivals.
- Derived efficient frontiers of profitability and reliability for urban and rural areas using a real-world dataset from Amazon and Google API and identified effective strategies to operate a profitable business with reliable service levels.

Parcel Delivery with Crowdkeeping, HEC Montreal Jan. 2021- Apr. 2022

- Identified crowdkeeping delivery problem by constructing bilevel programs and solved it by row generation algorithm.
- Validated the superior performance of crowdkeeping delivery system, evidenced by its high capability in consolidating deliveries and eliminating failed deliveries, compared to other commonly used systems using real data from Amazon.

Spare Parts Purchase and Inventory Management, NJU Apr. 2019 - Apr. 2020

- Collected inventory data from Chemical Enterprise and identified bottleneck constraints using a Petri-Network.
- Optimized a distributionally robust model designed to aid in the decision-making process for reordering and delivery.

Project Management Theory and Innovation Based on Big Data, NJU Apr. 2018 - Dec. 2018

- Collected information and data from Nan Rui Group Co. Ltd. and identified problem in project management process.
- Addressed project management challenges within the constraints of limited resources and uncertain completion times.

Strategic Operation Management of Digital Enterprises, NJU Sep. 2017 - Dec.2017

- Developed skills related to Business Process Reengineering and Business Model Transformation.
- Wrote project reports aimed at providing strategic planning for the Business Model of the State Grid Corporation.

A Study on Green GDP and Evaluation on Economic Sustainability, NUAA May. 2015 - May. 2016

- Collected all available data on the economy and environment, designing features using Principle Component Analysis.
- Constructed a comprehensive coordination degree model to evaluate efficiency and sustainability of economy in cities.

HONORS AND AWARDS

- Gilbert Laporte Student Paper Award, 2nd Place, 2024.
- Esdras-Minville Award, 1st Place, 2023.
- CORS Graduate Student Funding, 2024 & 2022.
- National Scholarship in China, 2019.
- 1st Prize Scholarship in Nanjing University, 2019 & 2018 & 2017.
- Meritorious Winner in Interdisciplinary Contest in Modeling (ICM), 2017.
- 1st Prize Scholarship in NUAA, 2016 & 2014.
- Suzhou Industrial Scholarship, 2015.

CONFERENCES

- INFORMS MSOM, 2024 & 2023.
- INFORMS ANNUAL CONFERENCE 2023.
- CORS, 2024 & 2023 & 2022.
- OPTIMIZATION DAYS, 2024 & 2023 & 2022.
- POMS-HK, 2019 & 2018.

SKILLS

- **Language:** English (Fluent), Mandarin (Native).
- **Programming:** Python, C++, MATLAB, SPSS | Gurobi, Cvxpy, TensorFlow, PyTorch.

REFERENCE CONTACT

Erick Delage, Email: erick.delage@hec.ca, Phone: +1 514 340-7040, Office: 4.315.

Okan Arslan, Email: okan.arslan@hec.ca, Phone: +1 514 340-5697, Office: 4.319.

Jean-François Cordeau, Email: jean-francois.cordeau@hec.ca, Phone: +1 514 340-6278, Office: 5.850.