

# Ke (Kelsey) Sun

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## Professional Experience

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2024.08 – present	<b>McGill University</b> Desautels Faculty of Management Advisor: Yichuan Ding & Mehmet Gumus	<i>Postdoctoral Fellow</i>
2021.06 – 2024.06	<b>Beijing University of Chemical Technology</b> School of Economics and Management	<i>Postdoctoral Fellow</i>

## Education

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2019.10 – 2020.11	<b>North Carolina State University</b> Advisor: Yunan Liu	<i>Visiting Scholar in Industrial and System Engineering</i>
2016.06 - 2021.06	<b>Beijing Jiaotong University</b>	<i>Ph.D. in Statistics</i>
2012.09 - 2016.06	<b>Beijing Jiaotong University</b>	<i>B.S. in Information and Computing Science</i>

## Research Interests

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Data-driven decision-making, Stochastic models, Queueing theory, Simulation, Optimal controls, Reinforcement learning, with applications to service systems.

## Paper under Review and Published

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1. **Sun, K.**, Liu, Y., Yang, L., "Order Ahead for Pickup: Promise or Peril?", Major Revision (3rd Round) at *Manufacturing & Service Operations Management* . <https://dx.doi.org/10.2139/ssrn.3673617>.
2. Kong, G., Kong Q., Liu, Y., **Sun, K.**, Zhu, R. "Harness the Power of Patience: The Evaluation of On-demand and Reservation Business Model of Ride Hailing Services", Reject & Resubmit at *Manufacturing & Service Operations Management*. <https://ssrn.com/abstract=4741537> or <http://dx.doi.org/10.2139/ssrn.4741537>.
3. **Sun, K.** "Strategic Responses to the Aggregator Platform: Pricing and Information Sharing", *Journal of Retailing and Consumer Services*, 79, 103874.
4. **Sun, K.**, Liu, Y., Li, X., "Mail Back or In-Store Dropoff? Optimal Design of Product-Exchange Policies in Omnichannel Retailing Systems", *Omega*, 125(2024), 103024.
5. **Sun, K.**, Liu, Y., Li, K., "A Two-Class Retrial Queue Model for Cognitive Radio Networks with Energy Harvesting and Strategic Users", *Computer Communications*, 199(2023), 98-112.

6. **Sun, K.**, Liu, Y., Li, X., "Make Waiting Not to Seem Like Waiting: Capacity Management of Waiting-Area Entertainment", *Operations Research letters*, 2022, 50(6), 745-752.
7. Wang, J., **Sun, K.**, "Optimal Pricing and Capacity Sizing for Online Service Systems with Free Trials", *Operations Research Spectrum*, 2021, 44(1), 57-86.
8. **Sun K.**, Wang, J., "Game-theoretic Analysis of the Single Vacation Queue with Negative Customers", *Quality Technology & Quantitative Management*, 2022, 19(4), 403-427.
9. **Sun K.**, Wang, J., George, Z., "Strategic Joining in A Single-server Retrial Queue with Batch Service", *Journal of Industrial and Management Optimization*, 2021, 17(6), 3309-3332.
10. **Sun, K.**, Wang, J., "Equilibrium Joining Strategies in the Single-Server Constant Retrial Queues with Bernoulli Vacations", *RAIRO - Operations Research*, 2021, 55(2021), S408-S512.
11. **Sun K.**, Wang, J., George, Z., "Strategic Joining in A Single-server Retrial Queue with Batch Service", *International Conference on Queueing Theory and Network Applications*, 183-198, 2019.
12. **Sun, K.**, Wang, J., "Equilibrium Joining Strategies in the Single Server Queues with Negative Customers", *International Journal of Computer Mathematics*, 96, 1169-1191, 2019.

## Journal Articles in Progress

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1. **Sun, K.**, Liu, Y., Liu, J., Wang, Z. "Self-Service or Staffed Checkout? Service Channel Strategies in Supermarkets", to be submitted to *Production and Operations Management*. <http://dx.doi.org/10.2139/ssrn.5075233>
2. **Sun, K.**, Yichuan Ding, Mehmet Gumus. "Dynamic Substitution Strategies for Perishable Products in Food Retailing". Working paper.

## Talks & Presentations

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### 2025.6 MSOM 2025 Annual Conference

*Harness the Power of Patience: The Evaluation of On-demand and Reservation Business Models of Ride-hailing Services*, poster presented

### 2025.5 35th Annual POMS Conference

*Dynamic Substitution Strategies for Perishable Products in Food Retailing*, Presenter

*Session Chair: Self-Service or Staffed Checkout? Service Channel Strategies in Supermarkets*

*Order Ahead at Local Restaurants: Promise or Peril?*, Presenter

### 2024.6 2024 INFORMS Conference on Service Science

*Harness the Power of Patience: The Evaluation of On-demand and Reservation Business Models of Ride-hailing Services*, Presenter

### 2024.4 The 18th Annual Conference of the Intelligent Computing Branch, ORSC & Workshop on Data Driven Decision Making and Optimization

*Invited Speaker: Achieving Stable Service-level Targets in Time-varying Queueing Systems: A Simulation-based Offline Learning Staffing Algorithm*

**2023.8** 2023 International Conference on Intelligent Transportation and Logistics with Big Data & The Eleventh International Forum on Decision Sciences

*Session Chair*

**2023.7** 15th International Conference of the Chinese Scholars Association for Management Science and Engineering

*Order Ahead at Local Restaurants: Promise or Peril?, Presenter*

**2023.7** 2023 POMS International Conference in China

*The Impact of Self-Service Technology on Queueing Systems, Presenter*

**2020.9** Seminar, Department of Industrial and Systems Engineering, North Carolina State University

*Order Ahead at Local Restaurants: Promise or Peril?, Presenter*

## Teaching Experience

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### Beijing University of Chemical Technology

Summer 2022 & 2023	Matlab Simulataion
Spring 2022 & 2023	Electronic Commerce
Spring 2022 & 2023	Electronic Commerce Experiment

### McGill University

Summer 2025 (ongoing)	Operations Management (MGCR 372)
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## Grants and Funding

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2024.09-2026.09	IVADO Postdoctoral Research Funding 2024 <i>AI Driven Resilience in Agrifood: Optimizing Operations in Quebec's Online Grocery Platforms</i>
2024.01-2025.12	Beijing Natural Science Foundation <i>Sustainable Operations and Policy Optimization in Ride-hailing Platforms</i>
2023.01-2023.12	The Fundamental Research Funds for the Central Universities <i>Management and policy optimization in ride sharing platforms: a sustainable operations perspective</i>