# Hao Shen

## Contact Information


Address: Office 927, Mingde Business Building, 59 Zhongguancun Avenue, Beijing, China 100872
Phone: (+86) 152 0152 2091
email: shenhao@rmbs.ruc.edu.cn


## Current Research Interests

- Supply Chain Network Design and Management
- Data Analytics and Data-Driven Decision/Optimization Methods
- Flexible Operations/Production Management
- Optimization Theory and Applications in Operations Management

## Education

| | |
|---|---|
| July 2019 | Ph.D. in Management Science and Engineering, Department of Industrial Engineering, Tsinghua University, Beijing, China<br>Advisor: Prof. Zuo-Jun Max Shen<br>Dissertation: Data Analytics Approaches to the Design of Supply Chain Networks |
| July 2014 | B.E. in Engineering Mechanics (Tsien Excellence in Education Program), School of Aerospace Engineering, Tsinghua University, Beijing, China |
| July 2014 | Minor in Economics, School of Econimics and Management, Tsinghua University, Beijing, China |
| Spring 2014 | Exchange Semester at Technical University of Munich, Munich, Germany |

## Research Articles

1. **Hao Shen**, Yong Liang*, Zuo-Jun Max Shen. 2021. Reliable hub location model for air transportation networks under random disruptions. *Manufacturing & Service Operations Management*. 23(2): 388-406.
2. **Hao Shen**, Yong Liang*, Zuo-Jun Max Shen, Chung-Piaw Teo. 2019. Reliable flexibility design of supply chains via extended probabilistic expanders. *Production and Operations Management*. 28(3): 700-720.
3. Ningxuan Kang, **Hao Shen***, Ye Xu. 2021. JD.com improves delivery networks by a multi-period facility location model. Accepted by *INFORMS Journal on Applied Analytics* (formerly *Interfaces*).
4. Jian Chen, Yong Liang, **Hao Shen***, Zuo-Jun Max Shen, Mengying Xue. Offline channel planning in smart omnichannel retailing. Under Minor Revision at *Manufacturing & Service Operations Management*.
5. **Hao Shen**, Mengying Xue*, Zuo-Jun Max Shen. Data-driven reliable facility location design. Under R&R at *Management Science*.

## Research Projects

2021 - PRESENT **Offline Channel Planning in Omni-Channel Retail,** National Natural Science Foundation of China [72001206] (PI)
Analyze the customer behavior using industrial data, and investigate the offline operations management problem under an online-offline selling strategy. Expect to motivate academic papers, and provide solutions and managerial insights for omni-channel retailers in customer analytics and operational decision making.

2018 - PRESENT **Hub-and-Spoke Network Design and Operations Flexibility under Probabilistic Disruptions,** National Natural Science Foundation of China [71872095] (Participation).
Study the reliable hub-and-spoke network design problem under disruptions using the idea of operations flexibility. Use weather data and industrial data to investigate the impact of disruptions on costs and operations in hub-and-spoke as well as effective strategies and solutions to enhance system reliability.

2018 **Analysis of Customers' Travel Product Choice,** DiDi (Internship).
Analyzed the customer behavior and travel product choice using daily travel data. Provided references for DiDi's pricing and promotion strategies.

2016 - 2017 **Delivery Network Design,** JD.com (Internship).
Modeled and solved the location problem of delivery stations. Developed a decision support tool for JD.com to design its delivery networks. Received significant cost savings from operations in the delivery system.

## Presentations and Invited Talks

1. Offline Channel Planning in Omnichannel Retail.

   School of Business, Renmin University of China, Beijing, Apr. 2021

2. Online Retailers Opening Offline Stores: An Integrated Approach to Location, Assortment and Inventory Planning.

   Antai Business College, Shanghai Jiao Tong University, Shanghai, Nov. 2019

   INFORMS International Conference, Taipei, Jun. 2018

3. Reliable Flexibility Design of Supply Chains via Extended Probabilistic Expanders.

   POMS-HK International Conference, Hong Kong, Jan. 2019

   INFORMS Annual Meeting, Nashville, Nov. 2016

   Department of Industrial Engineering PhD Forum, Tsinghua University, Beijing, Dec. 2016

4. Reliable Hub Location Model for Air Transportation Networks under Random Disruptions.

   School of Business, Renmin University of China, Beijing, Dec. 2018

## Teaching Experience

SPRING 2021 **Academic Writing** (Undergrads course), Instructor
FALL 2020 **Introduction to Management Science** (Global BBA Undergrads course), Instructor
SPRING 2018 **Advanced Operations Research** (Ph.D. course), Teaching Assistant
FALL 2017 **Data, Models and Decisions** (MBA course), Teaching Assistant
SPRING 2017 **Operations Management** (Undergrads course), Teaching Assistant

## Work Experience

| | |
|---|---|
| Sep 2019-Present | Assistant Professor at School of Business, Renmin University of China, Beijing, China |
| Mar-Jun 2018 | Data Analyst Intern at Didi, Beijing, China |
| Oct 2016-Mar 2017 | Applied Operations Research Intern at JD.com, Beijing, China |

## Awards and Scholarships

| | |
|---|---|
| 2020 | Best Ph.D. Thesis, Society of Management Science and Engineering of China |
| 2019 | POMS-JD.com Best Data-Driven Research Paper Competition, Winner |
| 2018 | China National Scholarship for PhD students |
| 2015 | First Class Scholarship for PhD students, Department of Industrial Engineering, Tsinghua University |
| 2011 | Philip K.H. Wong Scholarship for undergraduates, Tsinghua University |
| 2010 | Outstanding Freshman Scholarship, Tsinghua University |

## Professional Affiliation

- Referee for *Operations Research, Naval Logistics Research, Asia-Pacific Journal of Operational Research*
- Member of
  - Institute for Operations Research and Management Sciences (INFORMS)
  - Production and Operations Management Society (POMS)

## Activities

| | |
|---|---|
| Summer 2016 | Tsinghua Doctoral Social Practice, Urumqi |
| 2013 - 2014 | Student Research Training Program<br>Thesis: A Two-Component Miscible Fluid Model Based on Lattice Boltzmann Method |

## Computer Skills

| | |
|---|---|
| Programming: | Python, R, LaTeX, Matlab, C, Mathematica |
| Optimization: | Gurobi, Cplex |

## Referees

**Zuo-Jun Max Shen**
Chancellor's Professor and Vice-President
College of Engineering, University of California, Berkeley, Berkeley, California 94704
Faculty of Engineering and Faculty of Business and Economics, University of Hong Kong, Hong Kong
Phone: (510) 643-2392
Email: maxshen@berkeley.edu

**Chung-Piaw Teo**
Professor and Provost's Chair
Department of Analytics and Operations
NUS Business School (BIZ1 7-71)
Institute of Operations Research and Analytics
National University of Singapore

Singapore 119245
Phone: (65) 6516-5223
Email: bizteocp@nus.edu.sg

**Yong Liang**
Associate Professor
Department of Management Science and Engineering
School of Economics and Management (451 Weilun Building)
Tsinghua University
Beijing, China 100084
Phone: (86) (10) 62794867
Email: liangyong@sem.tsinghua.edu.cn