# Ruihao Zhu

Cornell SC Johnson College of Business
Statler Hall, 106 Statler Dr, Ithaca, NY 14853

https://rzhu.github.io/ 🌐
ruihao.zhu@cornell.edu ✉

## Academic Employment

**Cornell University**
SC Johnson College of Business & Nolan School of Hotel Administration
Operations, Technology, and Information Management Area
***Assistant Professor***                                      2022-now

**Purdue University**
Krannert School of Management
Department of Supply Chain and Operations Management
***Assistant Professor***                                      2021-2022

## Education

**Massachusetts Institute of Technology**
*Interdisciplinary Ph.D. in Controls and Statistics*, 2021

**Shanghai Jiao Tong University**
*B.Eng. in Electrical and Computer Engineering*, 2015

**University of Michigan, Ann Arbor**
*B.Eng. in Computer Science and Engineering*, 2015

## Awards

*2nd Place*, Chelliah Sriskandarajah Early Career Research Accomplishments Award, 2025
*Finalist*, INFORMS Data Mining Society Best Theoretical Paper Award, 2024
*Finalist*, INFORMS Conference on Quality, Statistics, and Reliability Best Paper Competition, 2024
*Honorable Mention*, INFORMS George B. Dantzig Dissertation Award, 2022
*$2^{nd}$ Place*, INFORMS Innovative Applications in Analytics Award, 2022
*Finalist*, INFORMS Service Science Section Best Cluster Paper Award, 2021
*Honorable Mention*, INFORMS George E. Nicholson Student Paper Competition, 2019
*Finalist*, POMS-JD.com Best Data-Driven Research Paper Competition, 2019

## Thesis

**Data-Driven Operations in Changing Environments**
*– Honorable Mention*, INFORMS George B. Dantzig Dissertation Award, 2022

## Journal Papers

**Learning to Price Supply Chain Contracts against a Learning Retailer**
X. Zhao, R. Zhu, and W. Haskell
***Management Science*** (Accepted)

**Temporal Fairness in Learning and Earning: Price Protection Guarantee and Phase Transitions**
Q. Feng, R. Zhu, and S. Jasin
***Operations Research*** 73(2):775-797 (2024)[Journal]
– Preliminary version presented in ACM EC 2023 and Market Innovation Workshop 2023 (oral presentation)

**Model-Free Non-Stationary RL: Near-Optimal Regret and Applications in Multi-Agent RL and Inventory Control**
W. Mao, K. Zhang, R. Zhu, D. Simchi-Levi, and T. Basar
***Management Science*** 71(2):1564–1580 (2024) [Journal]
– Preliminary version presented in ICML 2021

**Calibrating Sales Forecast in a Pandemic Using Competitive Online Non-Parametric Regression**
D. Simchi-Levi, R. Sun, M. Wu, and R. Zhu
***Management Science*** 70(10):6502–6518 (2023) [Journal]
– *2$^{nd}$ Place*, INFORMS Innovative Applications in Analytics Award, 2022
– *Finalist*, INFORMS Service Science Section Best Cluster Paper Award, 2021
– Preliminary version presented in MSOM Supply Chain Management SIG Meeting 2021

**Non-Stationary Reinforcement Learning: The Blessing of (More) Optimism**
W. C. Cheung, D. Simchi-Levi, and R. Zhu
***Management Science*** 69(10):5722–5739 (2023) [Journal]
– Preliminary version presented in ICML 2020

**Joint Patient Selection and Scheduling under No-Shows: Theory and Application in Proton Therapy**
S. Saghafian, N. Trichakis, R. Zhu, and H. Shih
***Production and Operations Management*** 32(2):547–563 (2023) [Journal]

**Hedging the Drift: Learning to Optimize under Non-Stationarity**
W. C. Cheung, D. Simchi-Levi, and R. Zhu
***Management Science*** 68(3):1696–1713 (2021) [Journal]
– *Honorable Mention*, INFORMS George E. Nicholson Student Paper Competition, 2019
– *Finalist*, POMS-JD.com Best Data-Driven Research Paper Competition, 2019
– Preliminary version presented in AISTATS 2019 and MSOM Service Operations SIG Meeting 2019

**Meta-Dynamic Pricing: Transfer Learning Across Experiments**
H. Bastani, D. Simchi-Levi, and R. Zhu
***Management Science*** 68(3):1865–1881 (2021) [Journal]

– Preliminary version presented in INFORMS RM&P Conference Spotlighted Track 2019

**Working Papers**

**PRINCIPRO: Data-Driven Algorithms for Joint Pricing and Inventory Control under Price Protection**
Q. Feng and R. Zhu
Major Revision, *Management Science*
– Preliminary version presented in WINE 2023

**Risk-Aware Linear Bandits: Theory and Applications in Smart Order Routing**
J. Ji, R. Xu, and R. Zhu
Major Revision, *Operations Research*
– Preliminary version presented in ICAIF 2022 and INFORMS Workshop on Data Science 2022

**Sailing through the Dark: Provably Sample-Efficient Inventory Control**
H. Qin, D. Simchi-Levi, and R. Zhu
Major Revision, *Management Science*

**Satisficing Regret Minimization in Bandits**
Q. Feng, T. Ma, and R. Zhu
– *Finalist*, INFORMS Data Mining Society Best Theoretical Paper Award, 2024
– Preliminary version presented in ICLR 2025 and INFORMS Workshop on Data Science 2024

**Safe Data Collection for Offline and Online Policy Learning**
R. Zhu and B. Kveton
– Preliminary version presented in AISTATS 2022, MIT 2021 Conference on Digital Experimentation (CODE@MIT), and INFORMS Workshop on Data Science 2022

**Refereed Conference Papers**

**Satisficing Regret Minimization in Bandits**
Q. Feng, T. Ma, and R. Zhu
*Proceedings of the 13th International Conference on Learning Representations (**ICLR 2025**)*

**User Experience Design Professionals' Perceptions of Generative Artificial Intelligence**
J. Li, H. Cao, L. Lin, Y. Hou, R. Zhu, A. El Ali
*Proceedings of the 2024 CHI conference on Human Factors in Computing Systems (**CHI 2024**)*

## PRINCIPRO: Data-Driven Algorithms for Joint Pricing and Inventory Control under Price Protection

Q. Feng and R. Zhu

*Proceedings of the 19th Conference on Web and Internet Economics (**WINE 2023**)*

## MERIT: A Merchant Incentive Ranking Model for Hotel Search & Ranking

S. Quan, H. Tan, S. Liu, Z. Zheng, R. Zhu, L. Li, Q. Lu, and F. Wu

*Proceedings of the 32nd ACM International Conference on Information and Knowledge Management (**CIKM 2023**)*

## Temporal Fairness in Learning and Earning: Price Protection Guarantee and Phase Transitions

Q. Feng, R. Zhu, and S. Jasin

*Proceedings of the 24th ACM Conference on Economics and Computationg (**EC 2023**)*

## LINet: A Location and Intention-Aware Neural Network for Hotel Group Recommendation

R. Zhu, D. Lv, Y. Yu, R. Zhu, Z. Zheng, K. Bu, Q. Lu, and F. Wu

*Proceedings of the ACM Web Conference 2023 (**WWW 2023**)*

## Risk-Aware Linear Bandits with Application in Smart Order Routing

J. Ji, R. Xu, and R. Zhu

*Proceedings of the Third ACM International Conference on AI in Finance (**ICAIF 2022**)*

## Safe Optimal Design with Applications in Off-Policy Learning

R. Zhu and B. Kveton

*Proceedings of the $25^{th}$ International Conference on Artificial Intelligence and Statistics (**AISTATS 2022**)*

## Near-Optimal Model-Free Reinforcement Learning in Non-Stationary Episodic MDPs

W. Mao, K. Zhang, R. Zhu, D. Simchi-Levi, and T. Basar

*Proceedings of the $38^{th}$ International Conference on Machine Learning (**ICML 2021**)*

## Reinforcement Learning for Non-Stationary Markov Decision Processes: The Blessing of (More) Optimism

W. C. Cheung, D. Simchi-Levi, and R. Zhu

*Proceedings of the $37^{th}$ International Conference on Machine Learning (**ICML 2020**)*

**Learning to Optimize Under Non-Stationarity**
W. C. Cheung, D. Simchi-Levi, and R. Zhu
*Proceedings of the $22^{nd}$ International Conference on Artificial Intelligence and Statistics (**AISTATS 2019**)*

**Coresets for Differentially Private K-means Clustering and Applications to Privacy in Mobile Sensor Networks**
D. Feldman, C. Xiang, R. Zhu, and D. Rus
*Proceedings of the $26^{th}$ ACM/IEEE International Conference on Information Processing in Sensor Networks (**IPSN 2017**)*

**Threshold Bandits, With and Without Censored Feedback**
J. Abernethy, K. Amin, and R. Zhu
*Advances in Neural Information Processing Systems 29 (**NIPS 2016**)*

**Differentially Private and Strategy-Proof Spectrum Auction with Approximate Revenue Maximization**
R. Zhu and K. G. Shin
*Proceedings of the 2015 IEEE International Conference on Computer Communications (**INFOCOM 2015**)*

**Differentially Private Spectrum Auction Mechanism with Approximate Revenue Maximization**
R. Zhu, Z. Li, F. Wu, K. G. Shin, and G. Chen
*Proceedings of the $15^{th}$ ACM International Symposium on Mobile Ad Hoc Networking and Computing (**MobiHoc 2014**)*

**STAMP: A Strategy-Proof Auction Mechanism for Spatially Reusable Items**
R. Zhu, F. Wu, and G. Chen
*Proceedings of the 2013 IEEE Global Communications Conference (**GLOBE-COM 2013**)*

**SAFE: A Strategy-Proof Auction Mechanism for Multi-Radio, Multi-Channel Spectrum Allocation**
R. Zhu, F. Wu, and G. Chen
*Proceedings of International Conference on Wireless Algorithms, Systems, and Applications (**WASA 2013**)*

## Industry Experience

**Amazon**
*Research Intern*, 2020

**Google**
*Research Intern*, 2019

| | |
|---|---|
| Teaching | **Cornell HADM 7030 Operations Management**<br>*Co-Instructor*, executive core class<br>– 2025, Enrollment: 32, Rating: 4.24/5.0 |
| | **Cornell HADM 2021/3010 Service Operations Management**<br>*Instructor*, undergraduate core class<br>– 2025, Enrollment: 68, Rating: 4.34/5.0<br>– 2024, Enrollment: 226, Rating: 4.26/5.0<br>– 2023, Enrollment: 147, Rating: 4.41/5.0 |
| | **Purdue MGMT 36100 Operations Management**<br>*Instructor*, undergraduate core class<br>– 2021, Enrollment: 135, Rating: 4.5/5.0 |
| | **MIT 15.774 The Analytics of Operations Management**<br>*Teaching Assistant*, elective for MBA, Master of Business Analytics, Supply Chain Management, and Leaders for Global Operations<br>– 2019, Enrollment: 61, Rating: 6.0/7.0 |
| Service | **Area Chair & Senior Program Committee:** Annual Conference on Neural Information Processing Systems (NeurIPS) 2025, ACM International Conference on AI in Finance (ICAIF) 2022-24 |
| | **Program Committee:** INFORMS Data Science Workshop 2024 |
| | **Journal Reviewer:** Management Science, Operations Research, Manufacturing & Service Operations Management, Mathematics of Operations Research, Production and Operations Management, Journal of Machine Learning Research (JMLR), Transactions on Machine Learning Research (TMLR), IEEE Journal on Selected Areas in Information Theory (JSAIT) |
| | **Conference Reviewer:** MSOM Service Operations SIG 2020-22, International Conference on Machine Learning (ICML) 2020-2021, Conference on Neural Information Processing Systems (NeurIPS) 2019-2021, International Conference on Algorithmic Learning Theory (ALT) 2019 |
| | Cornell SC Johnson College of Business OTIM PhD Admissions Committee (2023-24) |
| | Cornell SC Johnson College of Business Internal Ad Hoc Committee (IAHC) for Re-Appointment 2024 |
| | Coordinator of MIT Data Science Lab seminar series (2019-21) |