

Ruihao Zhu

Cornell SC Johnson College of Business
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Academic Employment	Cornell University SC Johnson College of Business & Nolan School of Hotel Administration Operations, Technology, and Information Management Area <i>Assistant Professor</i> 2022-now
	Purdue University Krannert School of Management Department of Supply Chain and Operations Management <i>Assistant Professor</i> 2021-2022
Education	Massachusetts Institute of Technology <i>Interdisciplinary Ph.D. in Controls and Statistics</i> , 2021
	Shanghai Jiao Tong University <i>B.Eng. in Electrical and Computer Engineering</i> , 2015
	University of Michigan, Ann Arbor <i>B.Eng. in Computer Science and Engineering</i> , 2015
Research Interests	My research seeks to develop novel data science methodologies to improve decision-making in online platforms, supply chain & logistics, and revenue management
Awards	<i>Finalist</i> , INFORMS Data Mining Society Best Theoretical Paper Award, 2024 <i>Finalist</i> , INFORMS Conference on Quality, Statistics, and Reliability Best Paper Competition, 2024 <i>Honorable Mention</i> , INFORMS George B. Dantzig Dissertation Award, 2022 <i>2nd Place</i> , INFORMS Innovative Applications in Analytics Award, 2022 <i>Finalist</i> , INFORMS Service Science Section Best Cluster Paper Award, 2021 <i>Honorable Mention</i> , INFORMS George E. Nicholson Student Paper Competition, 2019 <i>Finalist</i> , POMS-JD.com Best Data-Driven Research Paper Competition, 2019
Thesis	Data-Driven Operations in Changing Environments – <i>Honorable Mention</i> , INFORMS George B. Dantzig Dissertation Award, 2022

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 (Accepted) [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 (Accepted) [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]
– 2nd 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 Oper-

ations 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 Spotlitged 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 Exploration in Bandit Optimization

Q. Feng, T. Ma, and R. Zhu

– *Finalist*, INFORMS Data Mining Society Best Theoretical Paper Award, 2024

– Preliminary version presented in 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

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 Inven-

tory 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 Computation (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 25th 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 38th 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 37th 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 22nd 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 26th 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 15th 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 (GLOBECOM 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 2021/3010 Service Operations Management

Instructor, 2024

- Enrollment: 226, undergraduate core class
- Rating: 4.25/5.0

Cornell HADM3010 Service Operations Management

Instructor, 2023

- Enrollment: 143, undergraduate core class
- Rating: 4.3/5.0

Purdue MGMT36100 Operations Management

Instructor, 2021

- Enrollment: 135, undergraduate core class
- Rating: 4.5/5.0

MIT 15.774 The Analytics of Operations Management

Teaching Assistant, 2019

- Enrollment: 61 (primarily MBA, Master of Business Analytics, Supply Chain Management, and Leaders for Global Operations students)
- Rating: 6.0/7.0

Service

Senior Program Committee: 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)