

Ruoxuan Xiong

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Employment

08/2021–present *Assistant Professor*, Department of Data and Decision Sciences
 Courtesy appointments in Information Systems & Operations Management and Economics
 Emory University, Atlanta, GA

09/2020–07/2021 *Postdoctoral Researcher*, Graduate School of Business
 Stanford University, Stanford, CA

Education

09/2014–08/2020 *Ph.D.* in Management Science and Engineering
 Stanford University, Stanford, CA

09/2010–06/2014 *B.S.* in Urban and Rural Planning & *B.S.* in Mathematics
 Peking University, Beijing, China

Research Interests

At the intersection of econometrics, operations research, and machine learning: panel data, factor modeling, missing data, causal inference, and experimental design; applications in digital platforms, healthcare, and finance

Publications¹

Total Citations: 1578; h-index: 16 (Source: [\[Google Scholar\]](#), as of May 2026)

Papers Under Revision / Review

- “[Automated Experimental Design with Historical Data Simulation and Optimization.](#)” *R. Xiong*
- “[Data-Driven Switchback Designs: Theoretical Tradeoffs and Empirical Calibration.](#)” *R. Xiong*, A. Chin, and S. J. Taylor
- “[Semiparametrically Efficient Stepped Wedge Designs.](#)” H. Wang and *R. Xiong*
- “[Can We Validate Counterfactual Estimations in the Presence of General Network Interference?](#)” S. Shirani, Y. Luo*, W. Overman*, *R. Xiong**, and M. Bayati
- “[Partial Identification under Missing Data Using Weak Shadow Variables from Pretrained Models.](#)” H. Chen*, D. Simchi-Levi*, and *R. Xiong**

¹* Indicates alphabetical authorship or equal contribution.

Journal Publications

- “[Factor Analysis for Large Non-Stationary Panels with Endogenous Missingness and Applications to Causal Inference.](#)” J. Duan^{*}, M. Pelger^{*}, and R. Xiong^{*}. *Management Science*, accepted
- “[Semiparametric Estimation of Treatment Effects in Observational Studies with Heterogeneous Partial Interference.](#)” Z. Qu^{*}, R. Xiong^{*}, J. Liu^{*}, and G. Imbens. *Journal of Business & Economic Statistics*, accepted
- “[Optimal Experimental Design for Staggered Rollouts.](#)” R. Xiong, S. Athey, M. Bayati, and G. Imbens. *Management Science*, 2024
2020 MSOM Student Paper Competition Finalist
- “[Target PCA: Transfer Learning Large Dimensional Panel Data.](#)” J. Duan^{*}, M. Pelger^{*}, and R. Xiong^{*}. *Journal of Econometrics*, 2024
- “[Federated Causal Inference in Heterogeneous Observational Data.](#)” R. Xiong, A. Koenecke, M. Powell, Z. Shen, J.T. Vogelstein, and S. Athey. *Statistics in Medicine*, 2023
- “[Large Dimensional Latent Factor Modeling with Missing Observations and Applications to Causal Inference.](#)” R. Xiong and M. Pelger. *Journal of Econometrics*, 2023
2019 George Nicholson Student Paper Competition Honorable Mention
- “[Interpretable Sparse Proximate Factors for Large Dimensions.](#)” M. Pelger^{*} and R. Xiong^{*}. *Journal of Business & Economic Statistics*, 2022
- “[State-Varying Factor Models of Large Dimensions.](#)” M. Pelger^{*} and R. Xiong^{*}. *Journal of Business & Economic Statistics*, 2022

Refereed Conference Proceedings

- “[Learning Dynamic Representations and Policies from Multimodal Clinical Time-Series with Informative Missingness.](#)” Z. Liang, Z. Pan, and R. Xiong. In *Findings of the Association for Computational Linguistics (ACL Findings)*, 2026
- “[Causal Representation Learning from Multimodal Clinical Records under Non-Random Modality Missingness.](#)” Z. Liang, Z. Pan, and R. Xiong. In *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2025
- “[Higher-Order Causal Message Passing for Experimentation Under Unknown Interference.](#)” M. Bayati^{*}, Y. Luo^{*}, W. Overman^{*}, S. Shirani^{*}, and R. Xiong^{*}. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2024
- “[Two-Stage Shadow Inclusion Estimation: An IV Approach for Causal Inference under Latent Confounding and Collider Bias.](#)” B. Li, A. Wu, R. Xiong, and K. Kuang. In *International Conference on Machine Learning (ICML)*, 2024
- “[Learning Shadow Variable Representation for Treatment Effect Estimation under Collider Bias.](#)” B. Li, H. Li, R. Xiong, A. Wu, F. Wu, and K. Kuang. In *International Conference on Machine Learning (ICML)*, 2024
- “[Stable Estimation of Heterogeneous Treatment Effects.](#)” A. Wu, K. Kuang, R. Xiong, B. Li, and F. Wu. In *International Conference on Machine Learning (ICML)*, 2023
- “[Stable Prediction with Model Misspecification and Agnostic Distribution Shift.](#)” K. Kuang, R. Xiong, P. Cui, S. Athey, and B. Li. In *AAAI Conference on Artificial Intelligence (AAAI)*, 2020

- “[Stable Predictions across Unknown Environments.](#)” K. Kuang, P. Cui, S. Athey, R. Xiong, and B. Li. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2018, Oral Presentation

Journal Publications on Healthcare

- “[Alpha-1 adrenergic receptor antagonists for preventing acute respiratory distress syndrome and death from cytokine storm syndrome.](#)” A. Koenecke, M. Powell, R. Xiong, Z. Shen, N. Fischer, S. Huq, A.M. Khalafallah, B. Caffo, E.A. Stuart, N. Papadopoulos, K.W. Kinzler, B. Vogelstein, S. Zhou, C. Bettgowda, M.F. Konig, B. Mensh, J.T. Vogelstein, and S. Athey. *eLife*, 2021
- “[The association between Alpha-1 adrenergic receptor antagonists and in-hospital mortality from COVID-19.](#)” L. Rose, L. Graham, A. Koenecke, M. Powell, R. Xiong, Z. Shen, B. Mench, K.W. Kinzler, C. Bettgowda, B. Vogelstein, S. Athey, J.T. Vogelstein, M.F. Konig, and T.H. Wagner. *Frontiers in Medicine*, 2021
- “[Ten Rules for Conducting Retrospective Pharmacoepidemiological Analyses: Example COVID-19 Study.](#)” M. Powell, A. Koenecke, J.B. Byrd, A. Nishimura, M.F. Konig, R. Xiong, S. Mahmood, V. Mucaj, C. Bettgowda, L. Rose, S. Tamang, A. Sacarny, B. Caffo, S. Athey, E.A. Stuart, and J.T. Vogelstein. *Frontiers in Pharmacology*, 2021
- “[Preventing cytokine storm syndrome in COVID-19 using \$\alpha\$ -1 adrenergic receptor antagonists.](#)” M.F. Konig, M. Powell, V. Staedtke, R. Bai, D.L. Thomas, N. Fischer, S. Huq, A.M. Khalafallah, A. Koenecke, R. Xiong, B. Mensh, N. Papadopoulos, K.W. Kinzler, B. Vogelstein, J.T. Vogelstein, S. Athey, S. Zhou, and C. Bettgowda. *Journal of Clinical Investigation*, 2020

Teaching and Mentoring

Courses Taught

- Machine Learning F’23, S’24, F’24, S’25, S’26
- Causal Inference and Machine Learning F’21, S’22, F’22
- Quantitative Finance F’22, S’23, F’23, F’24

Undergraduate Honors Thesis Advisees

- [Phoebe Pan](#), 2025–present. Co-first author on papers published in [EMNLP’25](#) and [Findings of ACL’26](#). Incoming PhD student at Yale
- [Zihan Liang](#), 2025–present. Co-first author on papers published in [EMNLP’25](#) and [Findings of ACL’26](#). Incoming PhD student at Duke
- [Tsebaot Shewarega](#), 2024–2025. Researcher at MIT
- [Krystal Song](#), 2023–2024. Analyst at Evercore
- [Hao Wang](#), 2022–2023. First author of [a submitted paper on experimental design](#). PhD student at Yale
- [Leah Gao](#), 2021–2022. Paylocity

Invited Presentations

2026 Emory Biostatistics, LMU Munich AI Keynote Series, INFORMS Optimization Society Conference

- 2025 HKUST Guangzhou, Virginia Tech, Purdue University, MIT Data Science Lab, Boston University, Boston College, Washington University in St. Louis Junior Faculty Forum in Marketing, CES NA Annual Conference, Marketplace Innovation Workshop, NBER-NSF Time Series Conference, INFORMS Annual Meeting
- 2024 MIT Data Science Lab, University of Maryland, Meta, ASSA (discussant), NBER Summer Institute, Georgia Econometrics Workshop, ENAR Spring Meeting, Design and Analysis of Experiments Conference, Marketplace Innovation Workshop, MSOM Conference, SEM Annual Meeting, INFORMS Annual Meeting
- 2023 Yale, NYU, Lyft Rideshare Labs, Amazon, North American Summer Meeting of the Econometric Society, University of Rochester, Conference on Health IT and Analytics, American Causal Inference Conference, Methodology, Organization, and Management workshop, New York Camp Econometrics XVII, INFORMS Annual Meeting
- 2022 Microsoft Research, Boston University, University of Washington, NUS, NBER-NSF Time Series Conference, American Causal Inference Conference, AI/OR Workshop II, Revenue Management and Pricing Conference, INFORMS Annual Meeting, Marketplace Innovation Workshop, SIAM Annual Meeting
- 2021 Online Causal Inference Seminar, London Business School, Lyft Rideshare Labs, NBER-NSF Time Series Conference, Conference on Digital Experimentation, INFORMS Annual Meeting, INFORMS Healthcare, Manufacturing and Service Operations Management Conference, Marketplace Innovation Workshop, North American Summer Meeting of the Econometric Society, Symposium on Data Science and Statistics, ASSA Annual Meeting
- 2020 UT Austin, Columbia, University of Toronto, University of Florida, Cornell Tech, Cornell, UCSB, UC Berkeley, Stony Brook, Boston University, Chicago Booth, USC Marshall, University of Minnesota, Emory, USC ISyE, Stanford GSB, Shanghai Jiao Tong University, INFORMS Annual Meeting, European Winter Meeting of the Econometric Society
- 2019 UBC Sauder School of Business, UIC Business, Stanford AI for Human Impact Lab, Conference on Digital Experimentation, INFORMS Annual Meeting, Cornell ORIE Young Researchers Workshop, Marketplace Innovation Workshop, Annual SoFiE Conference, SIAM Conference on Financial Maths and Engineering
- 2018 NBER-NSF Time Series Conference, Ninth Western Conference on Mathematical Finance, INFORMS Annual Meeting, California Econometrics Conference, SoFiE Summer School in Chicago on Machine Learning and Finance, North American Summer Meeting of the Econometric Society
- 2017 Conference on Mathematical Modeling in Finance, Eighth Western Conference on Mathematical Finance

Professional Services

Peer Review Service

- Journal referee for: Annals of Applied Statistics, Biometrics, Biometrika, Econometrica, Econometrics Journal, Econometric Theory, European Financial Management, Journal of Applied Econometrics, Journal of Business & Economic Statistics, Journal of Econometrics, Journal of Educational and Behavioral Statistics, Journal of Financial Econometrics, Journal of Machine Learning Research, Journal of the American Statistical Association, Journal of Political Economy, Journal of the Royal Statistical Society: Series

B, Management Science, Manufacturing & Service Operations Management, Marketing Science, Nature Communications, npj Digital Medicine, Social Networks, Operations Research, Review of Economic Studies, Statistical Methods & Applications, Transactions on Big Data, Transactions on Knowledge Discovery from Data, Transactions on Machine Learning Research

- Conference reviewer for ICML 2020-2025, NeurIPS 2021-2024, ICLR 2021-2025, AISTATS 2025-2026, TS4H @ NeurIPS 2025, INFORMS Manufacturing and Service Operations Management Conference 2023-2026

Conference Organization: INFORMS Session Chair 2023-2025

University and Departmental Service

- Admissions and Scholarships Committee, 2025–present (university)
- Faculty Search Committee 2021–2022, 2023–2024
- Undergraduate Curriculum Revision Committee, 2022
- Co-organizer of QTM Department Seminar Speaker Series, 2021-2023

Proposal and Award Review

- National Science Foundation reviewer, 2020, 2024
- Research Grants Council of Hong Kong reviewer, 2023–2026
- JSM Business and Economic Statistics Student Paper Award reviewer, 2026
- INFORMS George Nicholson Student Paper Competition reviewer, 2026

Fellowships and Recognitions

2022	ICML Top 10% among all Reviewers
2022	American Causal Inference Conference Travel Award
2020	MSOM Student Paper Competition Finalist
2020	Stanford MS&E Course Assistant Award
2019	George Nicholson Student Paper Competition Honorable Mention
2019–2020	Stanford MS&E Departmental Fellowship
2019–2020	Krishnan Shah Fellowship
2018–2019	William Linville Memorial Fellowship
2017–2018	Charles and Katharine Lin Graduate Fellowship
2014–2015	Stanford School of Engineering Fellowship