

Zijun Gao

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RESEARCH INTEREST

- **Causal Inference:** Heterogeneous Treatment Effect, Randomization Test, Partial Identification, Personalized Medicine, Adaptive Clinical Trial.
- **Distribution Learning:** Optimal transport, Conditional Density Estimation.
- **Statistical Inference:** Selective Inference, Multiple Testing.
- **Model Evaluation**

ACADEMIC SERVICE

- **University of Southern California (USC)**, Los Angeles, CA, USA
Assistant Professor (tenure-track), Department of Data Sciences and Operations, Marshall Business School July 2023 - present
- **University of Cambridge**, Cambridge, Cambridgeshire, UK
Research Associate, Statistical Lab.
Host: [Prof. Qingyuan Zhao](#) Sept. 2022 - June 2023
- **Stanford University**, Stanford, CA, USA
Ph.D. in Statistics.
Advisor: [Prof. Trevor Hastie](#) Sept. 2017 - Aug. 2022
- **École Normale Supérieure**, Paris, France
Exchange Student.
Advisor: [Prof. Jean-Philippe Vert](#) Jan. 2017 - June 2017
- **Tsinghua University**, Beijing, China
B.S. in Mathematics Aug. 2013 - July 2017

PUBLICATIONS AND PREPRINTS

- **Zijun Gao**, Sirui Lin, Jose Blanchet, and Peter Glynn. “Optimal Transport for Causal Partial Identification with Covariates”, *submitted to International Conference on Machine Learning, July 2025*.
- **Zijun Gao** and Yan Sun. “Evaluation of Generative AI Models with Uncertainty Quantification”, *submitted to International Conference on Machine Learning, July 2025*.
- **Zijun Gao** and Qingyuan Zhao. “Revisit the False Discovery Rate: BH Procedure as a Non-cooperative Game”, *submitted to Statistical Science, Jan. 2025*.

- **Zijun Gao**, “Selective Inference for Data-driven Subgroups Based on Biomarkers”, *submitted to Journal of Statistics in Medicine*, Dec. 2024.
- **Zijun Gao**. “Trustworthy Assessment of Heterogeneous Treatment Effect Estimator via Analysis of Relative Error”, *accepted by International Conference on Artificial Intelligence and Statistics (AISTATS)*, Nov. 2024.
- **Zijun Gao** and Qingyuan Zhao. “Causal ANOVA: Estimation, Inference, Applications”, *submitted to International Conference on Causal Learning and Reasoning (CLeaR)*, Nov. 2024.
- Tobias Fiedling, Qingyuan Zhao, **Zijun Gao**, “Selective Randomization Inference for Adaptive Experiments”, *under revision of Journal of the Royal Statistical Society: Series B*, Oct. 2024.
- **Zijun Gao** and Trevor Hastie, “Estimating Heterogeneous Treatment Effects for General Responses”, *under revision of Journal of Statistics in Medicine*, Sept. 2024.
- Zhaotian Weng, **Zijun Gao**, Jerone Andrews, and Jieyu Zhao. “Images Speak Louder than Words: Understanding and Mitigating Bias in Vision-Language Model from a Causal Mediation Perspective”, *International Conference on Empirical Methods in Natural Language Processing (EMNLP)*, July 2024.
- **Zijun Gao**, “Adaptive Storey’s Null Proportion Estimator”, *accepted, Biometrika*, June 2024.
- **Zijun Gao**, Shu Ge, and Jian Qian, “Bridging Multiple Worlds: Multi-marginal Optimal Transport for Causal Partial-identification Problem”, *accepted by International Conference on Artificial Intelligence and Statistics (AISTATS)*, June 2024.
- **Zijun Gao**, Wenjie Hu, and Qingyuan Zhao, “A Constructive Approach to Selective Risk Control”, *submitted to Journal of American Statistical Association (JASA)*, March 2024.
- **Zijun Gao**, Trevor Hastie, and Qingyuan Zhao, “PathGPS: Discover Shared Genetic Architecture Using GWAS Summary Data”, *Biometrics*, July 2024.
- Ley Catherine, Frederik Heath, Trevor Hastie, **Zijun Gao**, Myroslava Protsiv, and Julie Parsonnet. “Defining Usual Oral Temperature Ranges in Outpatients Using an Unsupervised Learning Algorithm”, *JAMA Internal Medicine*, Sept. 2023.
- **Zijun Gao** and Qingyuan Zhao, “Simultaneous Hypothesis Testing Using Internal Negative Controls with an Application to Proteomics”, *submitted to Annals of Applied Statistics*, March 2023.
- **Zijun Gao** and Trevor Hastie, “LinCDE: Conditional Density Estimation via Lindsey’s Method”, *Journal of Machine Learning Research (JMLR)*, Feb. 2022.
- **Zijun Gao**, Trevor Hastie, and Robert Tibshirani, “Assessment of Heterogeneous Treatment Effect Estimation Accuracy via Matching”, *Statistics in Medicine*, April 2021.
- **Zijun Gao** and Yanjun Han, “Minimax Optimal Nonparametric Estimation of Heterogeneous Treatment Effects”, *Conference on Neural Information Processing Systems (NeurIPS) (Spotlight, 3%)*, Dec. 2020.

- Richard K. Kim, **Zijun Gao**, Trevor Hastie, and Detlef Obal, “Effect of Clinical Opioid Shortage on Anesthesiologists’ Prescription Habits: a Retrospective Analysis”, *Journal of Clinical Anesthesia*, Nov. 2020.
- **Zijun Gao**, Yanjun Han, Zhimei Ren, and Zhengqing Zhou (equal contribution), “Batched Multi-armed Bandits Problem”, *Conference on Neural Information Processing Systems (NeurIPS)* (**Oral, 1%**), Dec. 2019.

- PRESENTATION
- “Bridging Multiple Worlds: Multi-marginal Optimal Transport for Causal Partial-identification Problem”, International Conference on Statistics and Data Science (ICSIDS) Dec. 2024
 - “Selective Randomization Inference for Adaptive Experiments”, Statistics Department Seminar at University of California, Riverside Nov. 2024
 - “Adaptive Storey’s Null Proportion Estimator”, Joint Conference on Statistics and Data Science (JCSDS) July 2024
 - “Selective Randomization Inference for Adaptive Experiments”, International Conference on Frontiers of Data Science July 2024
 - “A Constructive Approach to Selective Risk Control”, International Chinese Statistical Association Annual Meeting (ICSA) June 2024
 - “Estimating Heterogeneous Treatment Effects for General Responses”, American Causal Inference Conference (ACIC) May 2024
 - “Enrichment Clinical Trials”, Epstein Institute Seminar at University of Southern California April 2024
 - “Selective Randomization Inference for Adaptive Experiments”, Biostatistics Department Seminar at Columbia University Feb. 2024
 - “A Constructive Approach to Selective Risk Control”, International Seminar on Selective Inference Jan. 2024
 - “Assessment of Heterogeneous Treatment Effect Estimation Accuracy via Matching”, American Causal Inference Conference (ACIC) May 2023
 - “PathGPS: Genotype-Phenotype Analysis through Summary Statistics”, Mendelian Randomization Workshop at the University of Bristol May 2023
 - “Estimating Heterogeneous Treatment Effects for General Responses”, European Causal Inference Meeting (EuroCIM) April 2023
 - “LinCDE: Conditional Density Estimation via Lindsey’s Method”, Joint Statistical Meetings (JSM) Aug. 2022
 - “LinCDE: Conditional Density Estimation via Lindsey’s Method”, Industrial Affiliates Annual Conference Nov. 2021
 - “Minimax Optimal Nonparametric Estimation of Heterogeneous Treatment Effects”, Conference on Neural Information Processing Systems (NeurIPS) Dec. 2020

- “Batched Multi-armed Bandits Problem”, Conference on Neural Information Processing Systems (NeurIPS) Dec. 2019
- “Assessment of Heterogeneous Treatment Effect Estimation Accuracy via Matching”, Industrial Affiliates Annual Conference Nov. 2019

TEACHING

- BUAD 310 - Applied Business Statistics Spring 2024, Spring 2025