

Zhimei Ren

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Employment

Assistant Professor of Statistics and Data Science, the Wharton School, University of Pennsylvania
July 2023 - present

Postdoctoral Researcher, University of Chicago
Advisor: Rina Foygel Barber
July 2021 - June 2023

External Advisor, Bain & Company
July 2021 - June 2022

Education

Ph.D. in Statistics
Stanford University, 2021
Advisor: Emmanuel Candès

B.S. in Statistics
Peking University, 2016

Visiting positions

Student research intern, Yale University
Host: Harrison Huibin Zhou
August 2015 - October 2015

Honors & awards

Rising Star in Data Science (University of Chicago), 2022
ACIC (American Causal Inference Conference) Travel Award, 2022
Waterloo Student Conference Presentation Award, 2021
Finalist of INFORMS Service Science Section 2021 Best Cluster Paper Award, 2021
Jerome H. Friedman Applied Statistics Dissertation Award, 2021
NeurIPS (Neural Information Processing Systems) Travel Award, 2019

First Prize of 2018 Citadel Datathon at Stanford, 2018

National Scholarship, Peking University, 2015

Yizheng Top Scholarship, Peking University, 2014

Academic Excellent Award, Peking University, 2014

Lee Wai Wing Scholarship, Peking University, 2013

Research interests

Statistics, machine learning, multiple hypothesis testing, causal inference, survival analysis, distribution-free inference, data-driven decision making

Publications

* stands for the alphabetical order or equal contribution.

- [1] Zijun Gao*, Yanjun Han*, **Zhimei Ren***, and Zhengqing Zhou*. “Batched multi-armed bandits problem”. *Advances in Neural Information Processing Systems 32 (NeurIPS 2019)*. (Oral, 0.5% acceptance.)
- [2] Garikoitz Lerma-Usabiaga, Pratik Mukherjee, **Zhimei Ren**, Michael L. Perry, and Brian A. Wandell. “Replication and generalization in applied neuroimaging”. *Neuroimage* 202 (2019): 116048.
- [3] **Zhimei Ren** and Emmanuel J. Candès. “Knockoffs with side information.” *The Annals of Applied Statistics* 17.2 (2023):1152-1174. arXiv: [2001.07835](https://arxiv.org/abs/2001.07835) [stat.ME].
- [4] **Zhimei Ren** and Zhengyuan Zhou. “Dynamic batch learning in high-dimensional sparse linear contextual bandits” (2022). *Management Science*, forthcoming. arXiv: [arXiv:2008.11918](https://arxiv.org/abs/2008.11918) [stat.ML].
- [5] **Zhimei Ren**, Yuting Wei and Emmanuel J. Candès. “Derandomizing knockoffs.” *Journal of American Statistical Association* 118.542 (2023): 948-958. arXiv: [2012.02717](https://arxiv.org/abs/2012.02717) [stat.ME].
- [6] **Zhimei Ren**, Zhengyuan Zhou and Jayant R. Kalagnanam. “Batched learning in generalized linear contextual bandits with general decision sets”. *IEEE Control Systems Letters* 6 (2020): 37-42.
- [7] Maria Dimakopoulou, **Zhimei Ren** and Zhengyuan Zhou. “Online multi-armed bandits with adaptive inference”. *Advances in Neural Information Processing Systems 34 (NeurIPS 2021)*. arXiv: [arXiv:2102.13202](https://arxiv.org/abs/2102.13202) [cs.LG].
- [8] Emmanuel J. Candès*, Lihua Lei* and **Zhimei Ren***. “Conformalized survival analysis.” *Journal of the Royal Statistical Society (Series B)* 85.1(2023): 24-45. arXiv: [arXiv:2103.09763](https://arxiv.org/abs/2103.09763) [stat.ME].
- [9] Ruohan Zhan*, **Zhimei Ren***, Susan Athey and Zhengyuan Zhou. “Policy learning with adaptively collected data” (2021). *Management Science*, forthcoming. arXiv: [arXiv:2105.02344](https://arxiv.org/abs/2105.02344) [stat.ML].
- [10] Shuangning Li*, **Zhimei Ren***, Chiara Sabatti* and Matteo Sesia*. “Transfer learning in genome-wide association studies with knockoffs” (2021). *Sankhya B* (2022): 1-39. arXiv: [arXiv:2018.08813](https://arxiv.org/abs/2018.08813) [stat.AP].

- [11] Jiancheng Ye and **Zhimei Ren**. “Examining the impact of sex differences and the COVID-19 pandemic on health and health care: findings from a national cross-sectional study.” *JAMIA Open* (2022). DOI: [10.1093/jamiaopen/ooac076](https://doi.org/10.1093/jamiaopen/ooac076).
- [12] Ying Jin*, **Zhimei Ren*** and Emmanuel Candès. “Sensitivity analysis of individual treatment effects: a robust conformal inference approach.” *Proceedings of the National Academy of Sciences* 120.6 (2023): e2214889120. arXiv: [arXiv:2111.12161](https://arxiv.org/abs/2111.12161) [stat.ME].
- [13] Ying Jin*, **Zhimei Ren*** and Zhengyuan Zhou. “Sensitivity analysis under the f -sensitivity models: a distributional robustness perspective” (2022). Submitted to *Operations Research*. arXiv: [arXiv:2203.04373](https://arxiv.org/abs/2203.04373) [stat.ME]. Under review.
- [14] **Zhimei Ren** and Rina F. Barber. “Derandomized knockoffs: leveraging e-values for false discovery rate control” (2022). *Journal of the Royal Statistical Society (Series B)*, forthcoming. arXiv: [arXiv:2205.15461](https://arxiv.org/abs/2205.15461) [stat.ME].
- [15] Yu Gui*, Rohan Hore*, **Zhimei Ren*** and Rina F. Barber. “Conformalized survival analysis with adaptive cutoffs” (2022). *Biometrika*, forthcoming. arXiv: [arXiv:2211.01227](https://arxiv.org/abs/2211.01227) [stat.ME].
- [16] Ying Jin*, **Zhimei Ren***, Zhuoran Yang and Zhaoran Wang. “Policy learning ‘without’ overlap: Pessimism and generalized empirical Bernstein’s inequality” (2022). Submitted to *Annals of Statistics*. arXiv: [arXiv:2212.09900](https://arxiv.org/abs/2212.09900) [cs.LG]. Under review.
- [17] Yuetian Luo, **Zhimei Ren** and Rina Foygel Barber. “Iterative approximate cross-validation.” *International Conference on Machine Learning (ICML 2023)*.
- [18] **Zhimei Ren**, Emil Y. Sidky, Rina Foygel Barber, Chien-Min Kao and Xiaochuan Pan. “Simultaneous activity and attenuation estimation in TOF-PET with TV-constrained nonconvex optimization” (2023). arXiv: [arXiv:2023.17042](https://arxiv.org/abs/2023.17042) [physics.med-ph]. Pre-published.

Talks

- [1] *Institute of System Science, Chinese Academy of Sciences*, October 2023.
- [2] *INFORMS Annual Meeting*, October 2023.
- [3] *Joint IEDA/MATH Seminar, Hong Kong University of Science and Technology*, July 2023.
- [4] *Department Seminar, Statistics and Data Science, Fudan University*, July 2023.
- [5] *Northwestern Institute of Complex Systems, Northwestern University*, April 2023.
- [6] *Department Seminar, Technology, Operations, and Statistics, New York University*, February 2023.
- [7] *Department Seminar, Statistics and Data Science, Yale University*, February 2023.
- [8] *The Political Science Quantitative Methods Workshop, University of Chicago*, February 2023.
- [9] *Department Seminar, ISyE, Georgia Tech*, February 2023.
- [10] *Department Seminar, Statistics, University of California, Berkeley*, February 2023.
- [11] *Department Seminar, Statistics, University of Toronto*, February 2023.
- [12] *Department Seminar, Statistics and Data Science, University of Pennsylvania*, February 2023.
- [13] *Department Seminar, Statistics, University of Chicago*, January 2023.

- [14] *Department Seminar, Statistics, University of Michigan, January 2023.*
- [15] *Department Seminar, IEMS, Northwestern University, January 2023.*
- [16] *Department Seminar, Statistics and Data Science, Carnegie Mellon University, January 2023.*
- [17] *Statistics Seminar, University of California, Los Angeles, January 2023.*
- [18] *Statistics Seminar, University of Washington, January 2023.*
- [19] *Department Seminar, Statistics and Data Sciences, University of Texas at Austin, January 2023.*
- [20] *Department Seminar, Statistics and Actuarial Science, University of Waterloo, December 2022.*
- [21] *Department Seminar, the Fuqua School of Business, Duke University, December 2022.*
- [22] *Statistics Seminar, Marshall School of Business, University of Southern California, December 2022.*
- [23] *The University of Chicago Rising Stars in Data Science Workshop, November 2022.*
- [24] *International Seminar on Selective Inference, November 2022.*
- [25] *Workshop in Operations Research and Data Science, Duke University, November 2022.*
- [26] *Matthew Stephens' Group Meeting, October 2022.*
- [27] *INFORMS Annual Meeting, October 2022.*
- [28] *AMS panel on recent advances in causal inference, University of Massachusetts Amherst, October 2022.*
- [29] *Multiple Comparison Procedure Conference, Bremen, Germany, August 2022.*
- [30] *Distribution-Free Uncertainty Quantification Workshop, ICML, July 2022.*
- [31] *IEMS Seminar, Northwestern University, July 2022.*
- [32] *ICSA Applied Statistics Symposium, University of Florida, June 2022.*
- [33] *Bain & Company, June 2022.*
- [34] *Neyman Seminar, University of California, Berkeley, April 2022.*
- [35] *University of Massachusetts, Amherst, February 2022.*
- [36] *London School of Economics, February 2022.*
- [37] *Online Causal Inference Seminar, February. 2022.*
- [38] *Will Fithian's Group Meeting, December 2021.*
- [39] *Waterloo Student Conference in Statistics, Actuarial Science and Finance, November 2021.*
- [40] *TTIC Machine Learning Seminar, November 2021.*
- [41] *INFORMS Annual Meeting, October 2021.*
- [42] *INFORMS Annual Meeting, October 2021.*
- [43] *Joint Statistical Meeting, August 2021.*
- [44] *IFDS-MADLab Workshop, August 2021.*

- [45] *INFORMS Healthcare Conference*, July 2021.
- [46] *Seminar on Statistics and Data Science, the Hong Kong University of Science and Technology*, June 2021.
- [47] *American Control Conference*, May 2021.
- [48] *MOILS (Operation Management Lunch Seminar), New York University*, November 2020.
- [49] *INFORMS Annual Meeting*, October 2020.
- [50] *International Seminar on Selective Inference*, October 2020.
- [51] *Bernoulli-IMS One World Symposium*, August 2020.
- [52] *Seminar on Statistics and Data Science, the Hong Kong University of Science and Technology*, March 2020.
- [53] *54th Annual Conference on Information Sciences and Systems*, March 2020. (Canceled due to COVID-19).
- [54] *Banff Workshop*, March 2020. (Canceled due to COVID-19).

Software

- [1] `adaptiveKnockoffs`: R package on knockoffs with side information (on github).
- [2] `derandomKnock`: R package on derandomizing knockoffs (on github).
- [3] `cfsurvival`: R package on conformalized survival analysis (on github).

Teaching

AS AN INSTRUCTOR AT THE UNIVERSITY OF PENNSYLVANIA

Statistics 4310: Statistical inference, Fall 2023.

AS AN INSTRUCTOR AT STANFORD UNIVERSITY

Statistics 302: Qualifying Exams Workshop (Theoretical Statistics), Summer 2018-2019.

AS A TEACHING ASSISTANT AT STANFORD UNIVERSITY

Statistics 362: Monte Carlo Methods, Winter 2019-2020.

Statistics 305: Methods for Applied Statistics, Spring 2018-2019.

Statistics 200: Introduction to Statistical Inference, Autumn 2019-2020, Autumn 2018-2019, Winter 2017-2018, Winter 2016-2017.

Statistics 237P: Theory of Investment Portfolios and Derivative Securities, Summer 2017-2018.

Statistics 334: Mathematics and Statistics of Gambling, Spring 2017-2018.

Statistics 206: Applied Multivariate Analysis, Autumn 2017-2018.

Statistics 60/160: Introduction to Statistical Methods: Precalculus, Spring 2019-2020, Summer 2016-2017.

Statistics 101: Data Science 101, Spring 2016-2017.

Statistics 48N: Riding the Data Wave, Fall 2020-2021.

Professional service

Reviewer for Journals (30)¹: (# papers in parentheses) *Annals of Statistics* (22), *Artificial Intelligence* (1), *Bioinformatics* (1), *Biometrics* (2), *Biometrika* (1), *BMC Medical Research Methodology* (1), *Electronic Journal of Statistics* (1), *Environmental and Ecological Statistics* (1), *IEEE Transactions on Information Theory* (1), *Journal of Applied Statistics* (1), *Journal of Computational and Graphical Statistics* (1), *Journal of Machine Learning Research* (1), *Journal of the American Statistical Association* (5), *Journal of the Royal Statistical Society (Series B)* (6), *Machine Learning* (1), *Management Science* (1), *Operations Research* (1), *Statistics in Medicine* (1), *Statistical Science* (1)

Reviewer for Conferences: (year in parentheses) *American Control Conference (ACC, 2022)*, *IEEE International Symposium on Information Theory (ISIT, 2021)*, *International Conference on Machine Learning (ICML, 2022-2023)*, *International Conference on Learning Representations (ICLR, 2022-2023)*, *Neural Information Processing Systems (NeurIPS, 2021-2023)*

Chair of the *Recent Advances in Statistical Methodology for Big Data* session at *Joint Statistical Meeting (JSM)*, 2021.

Invited discussant for the talk “Post-selection inference for e-value based confidence intervals” by Ziyu (Neil) Xu, at *International Seminar on Selective Inference*, March 2022.

Organizer of the *Recent Advances in Statistical Methodology* session at *Joint Statistical Meeting (JSM)*, 2023.

Last updated: October 15, 2023 • Typeset in X_YL_AT_EX

<http://mitens.org/taraborelli/cvtext>

¹Reviews of revision not included.