Zhichao Jiang

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POSITIONS

Professor (Sep 2022 –)
School of Mathematics
Sun Yat-sen University

Assistant Professor (Sep 2019 – Aug 2022)
Department of Biostatistics and Epidemiology, School of Public Health and Health Sciences
University of Massachusetts, Amherst

Postdoctoral Fellow (Sep 2018 – Aug 2019)
Department of Government and Department of Statistics, Harvard University
Advisor: Prof. Kosuke Imai

Postdoctoral Research Associate (Sep 2016 – Aug 2018)
Department of Politics and Center for Statistics and Machine Learning, Princeton University
Advisor: Prof. Kosuke Imai

Visiting Student (Sep 2013 – Sep 2014)
Department of Epidemiology, Harvard T.H. Chan School of Public Health
Advisor: Prof. Tyler J. VanderWeele

EDUCATION

Ph.D., Statistics – Peking University, 2016
    Dissertation: Identification of principal stratification causal effects and surrogate evaluation
    Advisor: Prof. Zhi Geng

B.S., Statistics, *B.A., Economics* – Peking University, 2011

RESEARCH INTERESTS

Causal inference with post-treatment variables: instrumental variable, principal stratifiation;
Causal inference in complex settings: panel data, functional data, spatio-temporal data;
Individual treatment rule: policy evaluation and learning, algorithmic fairness;
Measurement error and missing data;
Applied statistics in social sciences and biomedical studies.

GRANT SUPPORT

- National Science Foundation (2021–2023). Evaluating the Impacts of Machine Learning Algorithms on Human Decisions. (Methodology, Measurement, and Statistics Program). Co-PI (with Kosuke Imai and James Greiner)
- Cisco Systems, Inc. (2020–2022). Evaluating the Impacts of Algorithmic Recommendations on the Fairness of Human Decisions. (Ethics in AI). Subcontract PI (with Kosuke Imai and James Greiner)

- UMass Interdisciplinary Faculty Research Awards (2020-2022). Intelligent 3D Optical Coherence Tomography for Assessment of Transplant Organ Viability. Co-PI (with Yu Chen and Xian Du)

PUBLICATIONS

∗ Corresponding authorship; # Equal contribution

Refereed Journal Articles

25. Ben-Michael, E., Imai, K. and **Jiang, Z.** (2024) Policy Learning with Asymmetric Counterfactual Utilities. *Journal of the American Statistical Association*

24. **Jiang, Z.**#, Chen, S.# and Ding, P. (2023) An Instrumental Variable Method for Point Processes: Generalized Wald Estimation Based on Deconvolution. *Biometrika*, **110**, 989–1008.

23. **Jiang, Z.** and Imai, K. (2023) Statistical Inference and Power Analysis for Direct and Spillover Effects in Two-Stage Randomized Experiments. *Biometrics*, **79**, 2370–2381.

22. Imai, K., **Jiang, Z.**, Greiner, J., Halen, R. and Shin, S. (2023). Experimental Evaluation of Algorithm-Assisted Human Decision-Making: Application to Pretrial Public Safety Assessment (With Discussion). *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, **186**, 167–189.

21. Imai, K. and **Jiang, Z.**∗ (2023) Principal Fairness for Human and Algorithmic Decision-Making. *Statistical Science*, **38**, 317–328.

20. **Jiang, Z.**, Yang, S. and Ding, P. (2022). Multiply Robust Estimation of Causal Effects Under Principal Ignorability. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, **84**, 1423–1445.

19. **Jiang, Z.** and Ding, P. (2021). Identification of Causal Effects Within Principal Strata Using Auxiliary Variables. *Statistical Science*, **36**, 493–508.

18. Imai, K., **Jiang, Z.**∗ and Malani, A. (2021). Causal inference with interference and noncompliance in the two-stage randomized experiments. *Journal of the American Statistical Association*, **116**, 632–644.

17. **Jiang, Z.** and Ding, P. (2020). Measurement errors in the binary instrumental variable model. *Biometrika*, **107**, 238–245.

16. Imai, K. and **Jiang, Z.**∗ (2020). Identification and sensitivity analysis of contagion effects with randomized placebo-controlled trials. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, **183**, 1637–1657.

15. Kuang, K., Li, L., Geng, Z., Xu, L., Zhang, K., Liao, B., ..., and **Jiang, Z.** (2020). Causal inference. *Engineering*, **6**, 253–263.

14. Imai, K. and **Jiang, Z.** (2019). Comment: The Challenges of Multiple Causes. *Journal of the American Statistical Association*, **114**, 1605–1610.

13. **Jiang, Z.** and VanderWeele, T. J. (2019). Causal mediation analysis in the presence of a misclassified binary exposure. *Epidemiologic Methods*.

12. Imai, K., and **Jiang, Z.**∗ (2018). A sensitivity analysis for missing outcomes due to truncation-by-death under the matched-pairs design. *Statistics in Medicine*, **37**, 2907–2922.

11. **Jiang, Z.** and Ding, P. (2018). Using missing types to improve partial identification with application to a study of HIV prevalence in Malawi. *Annals of Applied Statistics*, **12**, 1831–1852.

10. Li, W., **Jiang, Z.**, Geng, Z. and Zhou, XH. (2018). Identification of causal effects in the presence of measurement error and latent confounding. *Biometrical Journal*, **60**, 498–515.

9. **Jiang, Z.** and Ding, P. (2017). The Directions of Selection Bias. *Statistics and Probability Letters*, **125**, 104–109.

8. **Jiang, Z.**, Ding, P. (2016). Robust modeling using non-elliptically contoured multivariate t distributions. *Journal of Statistical Planning and Inference*, **177**, 50–63.

7. **Jiang, Z.**, Ding, P. and Geng, Z. (2016). Principal causal effect identification and surrogate endpoint evaluation by multiple trials. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, **78**, 829–848.

6. **Jiang, Z.** and VanderWeele, T. J. (2015). When is the difference method conservative for mediation? (With discussion). *American Journal of Epidemiology*, **182**, 105–108.

5. **Jiang, Z.** and VanderWeele, T. J. (2015). Bounds or sensitivity analysis? Which to prefer for mediation? (Rejoinder to discussion). *American Journal of Epidemiology*, **182**, 115–117.

4. **Jiang, Z.**, Ding, P. and Geng, Z. (2015). Qualitative evaluation of associations by the transitivity of the association signs. *Statistica Sinica*, **25**, 1065–1079.

3. **Jiang, Z.** and VanderWeele, T. J. (2015). Causal mediation analysis in the presence of a mismeasured outcome. *Epidemiology*, **26**, e8–e9.

2. **Jiang, Z.**, VanderWeele T. J. (2015). Additive interaction in the presence of a mismeasured outcome. *American Journal of Epidemiology*, **181**, 81–82.

1. **Jiang, Z.**, Chiba, Y. and VanderWeele, T. J. (2014). Monotone confounding, monotone treatment selection, and monotone treatment response. *Journal of Causal Inference*, **2**, 1–12.

PROFESSIONAL ACTIVITIES

Journal Associate Editor: *The Annals of Applied Statistics* (2023-)

Journal reviews: *American Journal of Epidemiology, Annals of Statistics, Biometrics, Biometrika, Biostatistics, Biostatistics & Epidemiology, Computational Statistics and Data Analysis, Epidemiologic Methods, International Journal of Epidemiology, Journal of Business & Economic Statistics, Journal of Causal Inference, Journal of the American Statistical Association, Journal of the Royal Statistical Society, Nature Communication, Proceedings of the National Academy of Sciences, Scandinavian Journal of Statistics, Statistics in Medicine, Statistical Methods & Applications, Statistical Methods in Medical Research, The Annals of Applied Statistics, The Review of Economics and Statistics.*

Seminar organizer: Causal reading group, Harvard University, 2018

Session organizer: Causal inference with interference, *Atlantic Causal Inference Conference*, May 2018; Causal inference under interference, *Joint Statistical Meetings*, Aug 2021

Session chair: Recent developments for causal effect estimation in observational studies, *ICSA Applied Statistics Symposium*, Jun 2018

TEACHING

Sun Yat-sen University

    Causal inference, Fall 2023

    Statistical inference, Spring 2023, Spring 2024

    Linear model, Fall 2022

University of Massachusetts Amherst

    Causal inference: special topics, Spring 2020, Spring 2022

    Introduction to data science using R, Fall 2020, Spring 2021, Fall 2021