Jeffrey Zhang

Statistics PhD Student

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Education

University of Pennsylvania (Philadelphia, PA), Ph.D. in Statistics and Data Science, 2025 (expected). Thesis Advisor: Dylan Small.

Johns Hopkins University (Baltimore, MD), B.A. in Mathematics; B.S. and M.S.E. in Applied Mathematics and Statistics, 2020.

Publications (* denotes equal contribution)

Working manuscripts

[13] **J. Zhang**, F. Li. Addressing noncompliance in the REDAPS stepped-wedge trial cluster randomized trial: a randomization inference approach.

[12] **J. Zhang**, J. Lee. A general condition for bias attenuation by a nondifferentially mismeasured confounder. Available at arXiv.

[11] **J. Zhang**, E. Tchetgen Tchetgen. On Identification of Dynamic Treatment Regimes with Proxies of Hidden Confounders. Available at arXiv.

[10] **J. Zhang**, J. Connett, D. Small. The effects of a smoking cessation intervention on mortality over a 32.5-year follow-up period: a randomized clinical trial.

Manuscripts submitted/under review

[9] **J. Zhang**, S. Heng. Bridging the Gap Between Design and Analysis: Randomization Inference and Sensitivity Analysis for Matched Observational Studies with Treatment Doses. Available at arXiv.

[8] A. Chakraborty*, **J. Zhang***, E. Katsevich. Doubly robust and computationally efficient high-dimensional variable selection. Available at arXiv.

Published/Accepted

[7] **J. Zhang**, D. Small, S. Heng. Sensitivity analysis for matched observational studies with continuous exposures and binary outcomes. Accepted at *Biometrika*, 2024. Available at Oxford University Press.

[6] M. S. Goyal, L. Vidal, K. Chetcuti, C. Chilingulo, K. Ibrahim, **J Zhang**, D. Small, K. B Seydel, N. O'Brien, T. E. Taylor, D. G. Postels MRI-Based Brain Volume Scoring in Cerebral Malaria Is Externally Valid and Applicable to Lower-Resolution Images. *American Journal of Neuroradiology*, 2:205-210, 2024. Available at AJNR.

[5] F. Wan, S. Sutcliffe, **J. Zhang**, D. Small. Does matching introduce confounding or selection bias into the matched case-control design? *Observational Studies*, 10:1-9, 2024. Available at Project MUSE.

[4] **J. Zhang**, D. Small. Sensitivity Analysis for Observational Studies with Recurrent Events. *Lifetime Data Analysis*, 30:237–261, 2024. Available at Springer.

[3] **J. Zhang**, W. Li, W. Miao, E. Tchetgen Tchetgen. Proximal causal inference without uniqueness assumptions. *Statistics and Probability Letters*, 198, 2023. Available at Science Direct.

[2] **J. Zhang**, B. Zhang, D. Small. A method to aid statistical judgment on outliers: Comment on Hill's The Statistician in Medicine. *Statistics in Medicine*, 40:58–63, 2021. Available at Wiley.

[1] K. Bessey, M. Mavis, J. Rebaza, **J. Zhang**. Global Stability Analysis of a General Model of Zika Virus *Nonautonomous Dynamical Systems*, 6:18–34, 2019. Available at DeGruyter.

Software

- `doseSens`: R package for conducting sensitivity analyses in matched observational studies with continuous exposures. Available at CRAN and Github. The Github version is always the most up to date.

Awards

- J. Parker Bursk Prize (2024). *Awarded by the Department of Statistics and Data Science at the Wharton School for excellence in research.*

- Norman Breslow Early Career Award (2024). *Awarded by the ASA Section on Statistics in Epidemiology for the top paper in statistics in epidemiology to be presented at JSM.*

- 3rd Place - Merck Datathon (2023).

- Bloomberg Scholarship (2016-20). *A highly competitive need-based scholarship funded by Michael Bloomberg.*

Teaching

Courses Served as Teaching Assistant at Penn

- STAT 9220: Advanced Causal Inference, Fall '24 – Graduate Level.
- STAT 921: Observational Studies, Spring '24 – Graduate Level.
- STAT 101: Introduction to Business Statistics, Spring '23 – Undergraduate Level.
- STAT 102: Introduction to Business Statistics, Fall '21 – Undergraduate Level.
- STAT 111: Introductory Statistics, Fall '20, Spring '21 – Undergraduate Level. (Grader)

Presentations

Contributed talks

- *Sensitivity analysis for matched observational studies with continuous exposures and binary outcomes.* Joint Statistical Meetings, Aug. 3–Aug. 8, 2024, in Portland, Oregon.

Poster presentations

- *Universal Randomization Inference and Sensitivity Analysis for Matched Observational Studies with Continuous Treatments*
  American Causal Inference Conference, May 14–17, 2024, in Seattle, Washington.

- *Sensitivity analysis for continuous exposures and binary outcomes in matched observational studies.*
  American Causal Inference Conference, May 24–26, 2024, in Austin, Texas.

Last updated: October 25, 2024