

Zhenghao Zeng

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Research Interests

Causal inference, nonparametric statistics, high-dimensional statistics

Education

Carnegie Mellon University

Pittsburgh, PA

Ph.D. in Statistics

08/2020 – Present

Advisor: Prof. Edward H. Kennedy

Carnegie Mellon University

Pittsburgh, PA

M.S. in Statistics

08/2020 – 05/2021

University of Science and Technology of China

Hefei, Anhui

B.S. in Statistics

08/2016 – 06/2020

Honors and Awards

Student Paper Award, Statistical Learning and Data Science Section, ASA 2024

ENAR Distinguished Student Paper Award (International Biometric Society ENAR Spring Meeting) 2023

Guo Moruo Scholarship (summa cum laude at USTC) 2019

National Scholarship of China (USTC) 2018

Publications

Zeng, Z., Arbour, D., Feller, A., Addanki, R., Rossi, R., Sinha, R., and Kennedy, E.H. (2024). Continuous Treatment Effects with Surrogate Outcomes. *International Conference on Machine Learning*, 2024.

Zeng, Z., Gu, Y., and Xu, G. (2023). A Tensor-EM Method for Large-Scale Latent Class Analysis with Binary Responses. *Psychometrika*, 88(2), 580-612.

He, Y., Meng, B., **Zeng, Z.** and Xu, G. (2021). On the phase transition of Wilks' phenomenon. *Biometrika*, 108(3), 741-748.

Preprints

Zeng, Z., Balakrishnan, S., Han, Y. and Kennedy, E. H. (2024). Causal Inference with High-dimensional Discrete Covariates. arXiv preprint arXiv:2405.00118.

Du, J. H., **Zeng, Z.**, Kennedy, E. H., Wasserman, L. and Roeder, K. (2024). Causal Inference for Genomic Data with Multiple Heterogeneous Outcomes. arXiv preprint arXiv:2404.09119. Under review at *Journal of American Statistical Association*.

Bonvini, M., **Zeng, Z.**, Yu, M., Kennedy, E. H., and Keele, L. (2023). Flexibly Estimating and Interpreting Heterogeneous Treatment Effects of Laparoscopic Surgery for Cholecystitis Patients. arXiv preprint arXiv:2311.04359.

Zeng, Z., Kennedy, E. H., Bodnar, L. M., and Naimi, A. I. (2023). Efficient generalization and transportation. arXiv preprint arXiv:2302.00092. Minor Revision at *Statistical Science*.

Levis, A. W., Bonvini, M., **Zeng, Z.**, Keele, L., and Kennedy, E. H. (2023). Covariate-assisted bounds on causal effects with instrumental variables. arXiv preprint arXiv:2301.12106. Reject and Resubmit at *Journal of the Royal Statistical Society: Series B*.

Working Papers

Zeng, Z., Levis, A.W., Kennedy, E.H., and Keele, L. Nonparametric Estimation of Derivative of Dose-Response Curve: with Application to Estimating Local Instrumental Variable Curves.

Zeng, Z., Arbour, D., Feller, A., Dasgupta, I., Sinha, A. Missing Response under Cluster Dependence.

Experience

Adobe Research San Jose, CA
Research Intern 05/2024 – 08/2024
Mentors: David Arbour, Ishita Dasgupta, Atanu Sinha and Avi Feller (Berkeley)

Adobe Research San Jose, CA
Research Intern 05/2023 – 08/2023
Mentors: David Arbour and Avi Feller (Berkeley)
Continuous treatment effects with surrogate outcomes.

University of Michigan, Ann Arbor Ann Arbor, MI
Research Assistant 06/2019 – 09/2019
Mentor: Prof. Gongjun Xu
Large-scale latent class analysis and high-dimensional testing.

Teaching

Teaching assistant, Carnegie Mellon University 08/2020–05/2022
36-225 Introduction to Probability
36-401 Modern Regression
36-402 Advanced Methods for Data Analysis (×2)

Teaching assistant, USTC 09/2019 – 05/2020
Single-variable Calculus
Regression Analysis

Talks

International Conference on Computational & Methodological Statistics (CMStatistics) Virtual
Continuous treatment effects with surrogate outcomes 12/2024

Joint Statistical Meetings (JSM) Causal inference with high-dimensional discrete covariates	Portland, OR 08/2024
American Causal Inference Conference (ACIC) Causal inference with high-dimensional discrete covariates	Seattle, WA 05/2024
Causal Inference and Missing Data Group at Inria Efficient generalization and transportation	Virtual 02/2024
American Causal Inference Conference (ACIC) Causal inference with high-dimensional discrete covariates	Austin, TX 05/2023
International Biometric Society ENAR Spring Meeting Efficient generalization and transportation	Nashville, TN 03/2023

Academic Service

Reviewer

American Journal of Epidemiology (1)

Biometrika (3)

Electronic Journal of Statistics (5)

Journal of American Statistical Association (2)

Journal of Causal Inference (1)

Journal of the Royal Statistical Society: Series B (1)

Organizer

CMU Causal Inference Reading Group (2024-)