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AREAS OF INTEREST

Causal inference (design and analysis of randomized experiments; natural experiments; causal mechanisms). Missing data. Measurement error. Survey sampling.

EDUCATION

2016	Ph.D. , Statistics, Harvard University Advisor: Tirthankar Dasgupta Thesis: Unravel the mystery of split-plot designs via the potential outcomes prism
2010	B.Sc. , Statistics, Peking University, China

EMPLOYMENT

2023.7–	Assistant professor Fuqua School of Business, Duke University
2019–2023.6	Assistant professor Department of Statistics and Data Science National University of Singapore
2017–2019	Management consultant McKinsey & Company
2016–2017	Preceptor Harvard University
2015–2017	Online course developer HarvardX, Harvard University Co-developer of edx online course “Introduction to Probability” http://www.edx.org/course/introduction-to-probability

PUBLICATIONS & MANUSCRIPTS

Peer-reviewed journal articles

1. **ZHAO, A.** & DING, P. (2022). Covariate adjustment in multi-armed, possibly factorial experiments. *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*, accepted. <http://arxiv.org/abs/2112.10557>
2. **ZHAO, A.** & DING, P. (2022). To adjust or not to adjust? Estimating the average treatment effect in randomized experiments with missing covariates. *Journal of American Statistical Association*, in press.
3. **ZHAO, A.** & DING, P. (2022). Regression-based causal inference with factorial experiments: estimands, model specifications and design-based properties. *Biometrika* **109**, 799–815.
4. **ZHAO, A.**, LEE, Y., SMALL, D. & KARMAKAR, B. (2022). Evidence factors from multiple, possibly invalid, instrumental variables. *The Annals of Statistics* **50**, 1266–1296.
5. **ZHAO, A.** & DING, P. (2022). Reconciling design-based and model-based causal inferences for split-plot experiments. *The Annals of Statistics* **50**, 1170–1192.
6. **ZHAO, A.** & DING, P. (2021). Covariate-adjusted Fisher randomization tests for the average treatment effect. *Journal of Econometrics* **225**, 278–294.
7. **ZHAO, A.**, DING, P., MUKERJEE, R. & DASGUPTA, T. (2018). Randomization-based causal inference from split-plot designs. *The Annals of Statistics* **46**, 1876–1903.
8. LI, W. V., **ZHAO, A.**, ZHANG, S. & LI, J. J. (2018). MSIQ: Joint modeling of multiple RNA-seq samples for accurate isoform quantification. *Annals of Applied Statistics* **12**, 510–539.
9. **ZHAO, A.**, FENG, Y., WANG, L. & TONG, X. (2016). Neyman–Pearson classification under high-dimensional settings. *Journal of Machine Learning Research* **17**, 1–39.

Technical reports

1. SHI, W., **ZHAO, A.** & LIU, H. (2022). Rerandomization and covariate adjustment in split-plot designs. <http://arxiv.org/abs/2209.12385>.
2. **ZHAO, A.** & DING, P. (2021). No star is good news: A unified look at rerandomization based on p -values from covariate balance tests. <http://arxiv.org/abs/2112.10545>.

HONORS & AWARDS

- 2022 NSF Travel Grant, American Causal Inference Conference
- 2016 Arthur P. Dempster Award for best student paper, Department of Statistics, Harvard University
- 2012, 2014 Distinction in Teaching Award, Harvard University

GRANTS

- 2022 Ministry of Education Academic Research Fund Tier 1, Singapore. Role: PI. SG\$121,860

PRESENTATIONS

Workshops and tutorials

1. Workshop on “Randomization inference for experiments and observational studies: a holistic look.” American Causal Inference Conference, 2022.

Invited conference presentations

1. Joint Statistical Meetings, 2023 (scheduled)
2. International Conference on Econometrics and Statistics, 2023 (scheduled)
3. WNAR, 2023
4. CFE-CMStatistics, 2022
5. IMS International Conference on Statistics and Data Science, 2022
6. Pacific Causal Inference Conference, 2022
7. International Symposium on Probability and Statistics, 2022
8. BIRS workshop on “Emerging Challenges for Statistics and Data Sciences,” 2022
9. New England Statistics Symposium, 2022
10. American Causal Inference Conference, 2022
11. Pacific Causal Inference Conference, 2020
12. International Causal Inference Conference, 2019
13. Joint Statistical Meetings, 2014

Departmental seminars or presentations

1. Southwestern University of Finance and Economics, School of Statistics, 2023
2. UCLA, the Junction of Statistics and Biology, 2022
3. University of Hong Kong, Department of Statistics and Actuarial Science, 2022
4. Renmin University of China, the Institute of Statistics and Big Data, 2022
5. Peking University, Department of Biostatistics, 2021
6. East China Normal University, School of Statistics, 2019
7. Tsinghua University, Center for Statistical Science, 2019
8. Harvard University, Department of Statistics. Arthur P. Dempster Awardee Talk, 2016

TEACHING

Instructor, National University of Singapore

Undergraduate level: Design and Analysis of Clinical Trials (Fall 2019, 2021)

Graduate level: Multivariate Data Analysis (Fall 2022)

Applied Regression Analysis (Spring 2022, 2023)

Survival Analysis (Spring 2021)

Teaching Assistant & Preceptor, Harvard University

Undergraduate level: Introduction to Probability, Introduction to Stochastic Processes

Graduate level: Time Series Analysis and Forecasting

STUDENT ADVISING

Master's advisees

Wenhao Sun (2020)

Undergraduate advisees

Kiat Kai Lee (2020), Yi Sheng Wong (2021)

SERVICE

Conferences and workshops

1. Session organizer, ICSA Applied Statistics Symposium, 2023
2. Workshop organizer & poster judge, American Causal Inference Conference, 2022
3. Session chair, Joint Statistical Meetings, 2019

Peer review activities

Annals of Applied Statistics, Biometrical Journal, Biometrika, Canadian Journal of Statistics, Computational Statistics and Data Analysis, Electronic Journal of Statistics, Journal of Causal Inference, Journal of American Statistical Association, Journal of Applied Econometrics, Journal of Business & Economic Statistics, Journal of Educational and Behavioral Statistics, Journal of Statistical Theory and Practice, Scandinavian Journal of Statistics

Academic services

Fuqua School of Business, Duke University

2023–24 Decision Sciences seminar organizing committee

Department of Statistics and Data Science, National University of Singapore

2020–23 Graduate coursework program committee (admission and curriculum)

2019–20 Student exchange coordinator