

# Zijian Guo

CONTACT INFORMATION	Center for Data Science Zhejiang University, China	zijguo@zju.edu.cn <a href="https://statweb.rutgers.edu/zijguo/">https://statweb.rutgers.edu/zijguo/</a>
EDUCATION	Ph.D. Statistics, Wharton School, University of Pennsylvania <i>Thesis advisor: T. Tony Cai</i> <i>“Statistical Inference For High-Dimensional Linear Models”</i>	2017
	B.S. Mathematics, The Chinese University of Hong Kong <i>First Class Honor</i>	2012
POSITIONS	<i>Qiushi Chair Professor</i> Center for Data Science Zhejiang University	Aug 2025- present
	<i>Associate Professor</i> (with tenure) Department of Statistics Rutgers, the State University of New Jersey	July 2022- July 2025
	<i>Assistant Professor</i> Department of Statistics Rutgers, the State University of New Jersey	Sep 2017- June 2022
RESEARCH INTERESTS	Optimization and Statistics, Multi-source Learning, Nonstandard Inference, Causal Inference, High-dimensional Inference, and Applications to Genetics and Health Studies.	
HONORS AND AWARDS	<ul style="list-style-type: none"> <li>• ICSA Outstanding Young Researcher Award</li> <li>• Honorary Mention for Bernoulli Society New Researcher Award 2023</li> <li>• ICSA New Researcher Award, ICSA 2019</li> <li>• IMS travel Award, JSM</li> <li>• President Gutmann Leadership Award, University of Pennsylvania</li> <li>• J. Parker Bursk Prize <i>Awarded by the Wharton School for excellence in research.</i></li> <li>• Statistics in Epidemiology Young Investigator Award, JSM <i>Awarded by the ASA section on Statistics in Epidemiology.</i></li> </ul>	July. 2023 Nov. 2022 Dec. 2019 Aug. 2017 Apr. 2017 Sept. 2016 Aug. 2013
VISITING POSITIONS	<i>Invited Research Fellow</i> (Nov 2018, Sep-Oct 2023, Apr-May 2024, June 2025) Forschungsinstitut für Mathematik, ETH, Zürich (Host: Peter Bühlmann)  <i>Invited Research Fellow</i> (Apr-May 2024, Dec 2024, June 2025) Inria, Paris (Host: Francis Bach)  <i>Invited Research Fellow</i> (June 2024) Department of Statistics/Economics, University of Oxford (Host: Frank Windmeijer)  <i>Invited Research Fellow</i> (Apr 2024) Department of Mathematics, Cambridge University (Host: Richard Samworth)  <i>Invited Research Fellow</i> (March 2024) University of Twente (Host: Johannes Schmidt-Hieber)  <i>Invited Research Fellow</i> (Sep 2019, Sep 2023, Feb-Mar 2024)	

The Chan School of Public Health, Harvard University (Host: Tianxi Cai)

*Invited Research Fellow* (Feb 2024)

Department of Economics, Yale University (Host: Xiaohong Chen)

*Invited Research Fellow* (Jan-Feb 2024)

Statistics & Data Science, Carnegie Mellon University (Host: Larry Wasserman)

*Invited Research Fellow* (Aug 2017)

Perelman School of Medicine, University of Pennsylvania (Host: Hongzhe Li)

REPRESENTATIVE  
WORK

\* indicates alphabetical ordering authorship; underline indicates supervised students; # indicates equal contribution; ☒ indicates the co-corresponding authorship.

- (R1) \*Cai, T. T., and **Guo, Z.** (2017). Confidence intervals for high-dimensional linear regression: Minimax rates and adaptivity. *Annals of Statistics*, 45(2), 615-646.
- (R2) **Guo, Z.**, Kang, H., Cai, T. T., and Small, D. S. (2018). Confidence Interval for Causal Effects with Invalid Instruments using Two-Stage Hard Thresholding. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 80(4), 793-815.
- (R3) **Guo, Z.**<sup>#</sup>, Ćevic, D.<sup>#</sup>, and Bühlmann, P. (2022). Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding. *Annals of Statistics*, 50(3), 1320-1347.
- (R4) **Guo, Z.** (2023). Causal Inference with Invalid Instruments: Post-selection Problems and A Solution Using Searching and Sampling. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 85(3), 959-985.
- (R5) **Guo, Z.** (2024). Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies. *Journal of the American Statistical Association*, 119(547), 1968-1984.
- (R6) Yao, M., Miller, G., Vardarajan, B., Baccarelli, A., **Guo, Z.** ☒, and Liu, Z. ☒. (2024+). Robust Mendelian Randomization Analysis by Automatically Selecting Valid Genetic Instruments with Applications to Identify Plasma Protein Biomarkers for Alzheimer's Disease. *Cell Genomics*, 2024 Dec 11;4(12):100700.
- (R7) Wang, Z.<sup>#</sup>, Hu, Y.<sup>#</sup>, Bühlmann, P.☒, & **Guo, Z.**☒(2024). Causal Invariance Learning via Efficient Optimization of a Nonconvex Objective. *arXiv preprint arXiv:2412.11850*.
- (R8) **Guo, Z.**, Wang, Z., Hu, Y., and Bach, F. (2025). Statistical Inference for Conditional Group Distributionally Robust Optimization With Cross-Entropy Loss. *arXiv preprint arXiv:2507.09905*
- (R9) Zheng, M., Bonvini, M.☒, and **Guo, Z.**☒(2025). Perturbed Double Machine Learning: Nonstandard Inference Beyond the Parametric Length. *arXiv preprint arXiv:2511.01222*


PREPRINTS



\* indicates alphabetical ordering authorship; underline indicates supervised students; # indicates equal contribution; ☒ indicates the co-corresponding authorship

1. Koo, T. and **Guo, Z.** (2025). Distributionally Robust Synthetic Control: Ensuring Robustness Against Highly Correlated Controls and Weight Shifts. *arXiv preprint arXiv:2511.02632*
2. Zheng, M., Bonvini, M.☒, and **Guo, Z.**☒(2025). Perturbed Double Machine Learning: Nonstandard Inference Beyond the Parametric Length. *arXiv preprint arXiv:2511.01222*
3. **Guo, Z.**, Wang, Z., Hu, Y., and Bach, F. (2025). Statistical Inference for Conditional Group Distributionally Robust Optimization With Cross-Entropy Loss. *arXiv preprint arXiv:2507.09905*

4. Wang, Z., Liu, M., Lei, J., Bach, F. , & **Guo, Z.**  (2025). StablePCA: Learning Shared Representations across Multiple Sources via Minimax Optimization. *arXiv preprint arXiv:2505.00940*.
5. Scheidegger, C., **Guo, Z.**, & Bühlmann, P. (2025). Inference for Heterogeneous Treatment Effects with Efficient Instruments and Machine Learning. *arXiv preprint arXiv:2503.03530*.
6. Gu, Y., Fang, C., Xu, Y., **Guo, Z.**, & Fan, J. (2025). Fundamental Computational Limits in Pursuing Invariant Causal Prediction and Invariance-Guided Regularization. *arXiv preprint arXiv:2501.17354*.
7. Wang, Z. <sup>#</sup>, Hu, Y. <sup>#</sup>, Bühlmann, P., & **Guo, Z.** (2024). Causal Invariance Learning via Efficient Optimization of a Nonconvex Objective. *arXiv preprint arXiv:2412.11850*.
8. Rakshit, P., & **Guo, Z.** (2024). Statistical Inference in High-dimensional Poisson Regression with Applications to Mediation Analysis. *arXiv preprint arXiv:2410.20671*.
9. Wang, Z., Si, N., **Guo, Z.**, and Liu, M. (2024). Multi-source Stable Variable Importance Measure via Adversarial Machine Learning. *arXiv preprint arXiv:2409.07380*.
10. Zhan, K., Xiong, X., **Guo, Z.**, Cai, Tianxi, and Liu, M. (2024). Transfer Learning Targeting Mixed Population: A Distributional Robust Perspective. *arXiv preprint arXiv:2407.20073*.
11. \*Fan, Q., **Guo, Z.**, Mei, Z., and Zhang, C. (2023). Uniform Inference for Nonlinear Endogenous Treatment Effects with High-Dimensional Covariates. *arXiv preprint arXiv:2310.08063*.
12. Xiong, X., **Guo, Z.** , and Cai, Tianxi  (2023). Distributionally Robust Transfer Learning. *arXiv preprint arXiv:2309.06534*.
13. Liu, Y., Liu, M., **Guo, Z.**, and Cai, Tianxi. (2023). Surrogate-Assisted Federated Learning of high dimensional Electronic Health Record Data. *arXiv preprint arXiv:2302.04970*.
14. **Guo, Z.**, Zheng, M., and Bühlmann, P. (2022). Robustness Against Weak or Invalid Instruments: Exploring Nonlinear Treatment Models with Machine Learning. *arXiv preprint arXiv:2203.12808*.
15. \***Guo, Z.**, Yuan, W. and Zhang, C. (2019). Decorrelated Local Linear Estimator: Inference for Non-linear Effects in High-dimensional Additive Models. *arXiv preprint arXiv:1907.12732*. Reject and Resubmit at *Journal of Machine Learning Research*.

#### PUBLICATIONS

\* indicates alphabetical ordering authorship; underline indicates the supervised students;  indicates the co-corresponding authorship.

1. Wang, Z., Bühlmann, P., and **Guo, Z.** (2025+). Distributionally Robust Learning for Multi-source Unsupervised Domain Adaptation. *Annals of Statistics*, to appear.
2. **Guo, Z.**, Li, X., Han, L., and Cai, Tianxi. (2025+). Robust Inference for Federated Meta-Learning. *Journal of the American Statistical Association*, to appear.
3. Chang, T. H., **Guo, Z.**, and Malinsky, D. (2025+). Post-selection inference for causal effects after causal discovery. *Biometrika*, to appear.
4. Scheidegger, C., **Guo, Z.**, and Bühlmann, P. (2024+). Spectral Deconfounding for High-Dimensional Sparse Additive Models. *ACM/IMS Journal of Data Science*, to appear.
5. Yao, M., Miller, G., Vardarajan, B., Baccarelli, A., **Guo, Z.** , and Liu, Z . (2024+). Robust Mendelian Randomization Analysis by Automatically Selecting Valid Genetic

- Instruments with Applications to Identify Plasma Protein Biomarkers for Alzheimer’s Disease. *Cell Genomics*, to appear.
6. Lin, Y., **Guo, Z.**, Sun, B., and Lin, Z. (2024+). Testing High-Dimensional Mediation Effect with Arbitrary Exposure-Mediator Coefficients. *Test*, to appear.
  7. Carl, D., Emmenegger, C., Bühlmann, B., **Guo, Z.** (2024+). TSCI: Two Stage Curvature Identification for Causal Inference with Invalid Instruments. *Journal of Statistical Software*, to appear.
  8. \*Fan, Q., **Guo, Z.**, and Mei, Z. (2024+). A Heteroskedasticity-Robust Overidentifying Restriction Test with High-Dimensional Covariates. *Journal of Business & Economic Statistics*, to appear.
  9. **Guo, Z.** (2024). Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies. *Journal of the American Statistical Association*, 119(547), 1968-1984.
  10. Kang, H., **Guo, Z.**, Liu, Z., and Small, D. (2024). Identification and Inference with Invalid Instruments. *Annual Review of Statistics and Its Application*, to appear.
  11. Ma, R., **Guo, Z.**, Cai, T. T., and Li, H. (2024). Statistical Inference of Genetic Relatedness using High-Dimensional Logistic Regression. *Statistica Sinica*, 34 (2024): 1023-1043..
  12. Rakshit, P., Wang, Z., Cai, T. T., and **Guo, Z.** (2024). SIHR: An R Package for Statistical Inference in High-dimensional Linear and Logistic Regression Models. *R Journal*, to appear.
  13. \*Cai, T. T., **Guo, Z.**, and Xia, Y. (2023). Statistical inference and large-scale multiple testing for high-dimensional regression models. *Test (with discussion)*, 32(4), 1135-1171.
  14. **Guo, Z.** (2023). Causal Inference with Invalid Instruments: Post-selection Problems and A Solution Using Searching and Sampling. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 85(3), 959-985.
  15. \*Cai, T. T., **Guo, Z.**, and Ma, R. (2023). Statistical Inference for High-Dimensional Generalized Linear Models with Binary Outcomes. *Journal of the American Statistical Association*, 118 (542), 1319-1332.
  16. Koo, T., Lee, Y., Small, D. S., and **Guo, Z.** (2023). RobustIV and controlfunctionIV: Robustiv and controlfunctioniv: Causal inference for linear and nonlinear models with invalid instrumental variables. *Observational Studies*, 9(4), 97-120.
  17. Hou, J., **Guo, Z.**, and Cai, T. (2023). Surrogate assisted semi-supervised inference for high dimensional risk prediction. *Journal of Machine Learning Research*, 24(265), 1-58.
  18. Wang, X., Zhou, H., ..., 4CE, Avillach, P.✉, **Guo, Z.**✉, and Cai, Tianxi✉. (2022) SurvMaximin: Robust Federated Approach to Transporting Survival Risk Prediction Models. *Journal of Biomedical Informatics*, 134 (2022): 104-176.
  19. **Guo, Z.**, Cévid, D., and Bühlmann, P. (2022). Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding. *Annals of Statistics*, 50 (3), 1320 - 1347.
  20. \***Guo, Z.** and Zhang, C. (2022). Extreme Nonlinear Correlation for Multiple Random Variables and Stochastic Processes with Applications to Additive Models. *Stochastic Processes and their Applications*. 150, 1037-1058.
  21. **Guo, Z.**, Renaux, C., Bühlmann, P., and Cai, T. T. (2021). Group Inference in High Dimensions with Applications to Hierarchical Testing. *Electronic Journal of Statistics*, 15(2), 6633-6676.

22. **Guo, Z.**, Rakshit, P., Herman, D., and Chen, J. (2021). Inference for Case Probability in High-dimensional Logistic Regression. *Journal of Machine Learning Research*, 22(254), 1-54.
23. \*Cai, Tianxi, Cai, T. T., and **Guo, Z.** (2021). Optimal Statistical Inference for Individualized Treatment Effects in High-dimensional Models. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 83(4), 669-719.
24. \*Cai, T. T., and **Guo, Z.** (2020). Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 82(2), 391-419.
25. **Guo, Z.**, Wang, W., Cai, T. T., and Li, H. (2019). Optimal Estimation of Genetic Relatedness in High-dimensional Linear Models. *Journal of the American Statistical Association*, 114(525), 358-369.
26. **Guo, Z.**, Kang, H., Cai, T. T., and Small, D. S. (2018). Testing Endogeneity with High Dimensional Covariates. *The Journal of Econometrics*, 207(1), 175-187.
27. **Guo, Z.**, Kang, H., Cai, T. T., and Small, D. S. (2018). Confidence Interval for Causal Effects with Invalid Instruments using Two-Stage Hard Thresholding. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 80(4), 793-815.
28. \*Cai, T. T., and **Guo, Z.** (2018). Accuracy assessment for high-dimensional linear regression. *Annals of Statistics*, 46(4), 1807-1836.
29. **Guo, Z.**, Small, D. S., Gansky, S. A., and Cheng, J. (2018). Mediation analysis for count and zero-inflated count data without sequential ignorability and its application in dental studies. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 67(2), 371-394.
30. Cheng, J., Cheng N. F., **Guo, Z.**, Gregorich, S., Amid I. I., and Gansky, S. A. (2018). Mediation analysis for count and zero-inflated count data. *Statistical Methods in Medical Research*, 27(9), 2756-2774.
31. \*Cai, T. T., and **Guo, Z.** (2017). Confidence intervals for high-dimensional linear regression: Minimax rates and adaptivity. *Annals of Statistics*, 45(2), 615-646.
32. **Guo, Z.**, and Small, D. S. (2016). Control function instrumental variable estimation of nonlinear causal effect models. *Journal of Machine Learning Research*, 17(100), 1-35.
33. **Guo, Z.**, Cheng, J., Lorch, S. A., and Small, D. S. (2014). Using an instrumental variable to test for unmeasured confounding. *Statistics in Medicine*, 33(20), 3528-3546.
34. **Guo, Z.**, Kogan, R., Qiu, H., and Strichartz, R. S. (2014). Boundary value problems for a family of domains in the Sierpinski gasket. *Illinois Journal of Mathematics*, 58(2), 497-519.

#### SOFTWARE

1. R package **SIHR**: statistical inference in high-dimensional regression. Available at <https://cran.r-project.org/web/packages/SIHR/index.html>
2. R package **RobustIV**: robust causal inference with possibly invalid instruments. Available at <https://cran.r-project.org/web/packages/RobustIV/index.html>
3. R package **TSCI**: two stage curvature identification with machine learning. Available at <https://cran.r-project.org/web/packages/TSCI/index.html>
4. R package **maczic**: mediation analysis for count and zero-inflated count data. Available at <https://cran.r-project.org/web/packages/maczic/index.html>.
5. R package **MaximinInfer**: inference for maximin effects in high-dimensional settings. Available at <https://cran.r-project.org/web/packages/MaximinInfer/index.html>

6. R package **DLL**: inference for function derivative in high-dimensional additive models. Available at <https://cran.r-project.org/web/packages/DLL/index.html>
7. R package **DDL**: inference for regression parameters in high-dimensional models with hidden confounders. Available at <https://cran.r-project.org/web/packages/DDL/index.html>
8. R package **controlfunctionIV**: control function method with possibly invalid instruments. Available at <https://cran.r-project.org/web/packages/controlfunctionIV/index.html>

R codes are available at <https://github.com/zijguo>.

#### PAST GRANTS

1. National Institute of Health  
R01AG086379 “Robust Mendelian Randomization Framework with Multi-Omics Data for Alzheimer’s Disease and Related Dementias”  
- Role: Co-Principal Investigator (PI: Dr. Zhonghua Liu)
2. National Institute of Health  
R01LM013614 “Semi-supervised Approaches to Denoising Electronic Health Records Data for Risk Prediction”  
- Role: Co-Principal Investigator (PI: Dr. Tianxi Cai)
3. National Institute of Health  
R01GM140463 “Predictive Modeling with High-Dimensional Incomplete Data.”  
- Role: Principal Investigator (Co-PI: Dr. Jinbo Chen)
4. National Science Foundation  
DMS 2015373 “Repro Sampling Method: A Transformative Artificial-Sample-Based Inferential Framework with Applications to Discrete Parameter, High-Dimensional Data, and Rare Events Inferences.”  
- Role: Co-Principal Investigator (PI: Dr. Min-ge Xie)
5. National Science Foundation  
DMS 1811857 “Inference in High-Dimensional Linear Models: Methods, Theory and Applications.”  
- Role: Principal Investigator
6. National Institute of Health  
R56-HL-138306-01 “Statistics Methods for Analyzing Electronic Health Record Data.”  
- Role: Co-Investigator (PI: Dr. Jinbo Chen)
7. University of Pennsylvania Medical School  
“Statistics Methods for Analyzing Electronic Health Record Data.”  
- Role: Senior Investigator (PI: Dr. Jinbo Chen)

#### TEACHING EXPERIENCE

##### Course Instructor

- **Rutgers University (Ph.D. level)**

STAT 593: Theory of Statistics Fall 2024

STAT 593: Theory of Statistics Fall 2023

STAT 594: Advanced Modern Statistical Inference II Spring 2019

*Instructor Rating*: 4.82 out of 5.0

- **Rutgers University (Master level)**
  - FSRM 588: Financial Data Mining Spring 2025
  - FSRM 588: Financial Data Mining Fall 2021
  - Instructor Rating:* 4.75 out of 5.0
  - FSRM 588: Financial Data Mining (Virtual) Spring 2021
  - FSRM 588: Financial Data Mining Spring 2020
  - Instructor Rating:* 4.50 out of 5.0
  - FSRM 588: Financial Data Mining Fall 2019
  - Instructor Rating:* 4.75 out of 5.0
  - FSRM 588: Financial Data Mining Fall 2018
  - Instructor Rating:* 4.71 out of 5.0
  - FSRM 588: Financial Data Mining Fall 2017
  - Instructor Rating:* 4.82 out of 5.0
- **Rutgers University (Undergraduate level)**
  - STAT 384: Intermediate Statistical Analysis (Virtual) Spring 2021
  - STAT 484: Basic Applied Statistics (Virtual)
- **The Wharton School, University of Pennsylvania**
  - STAT 111 : Introductory Statistics Summer 2016

**Recitation Instructor**

The Wharton School, University of Pennsylvania  
STAT 111: Introductory Statistics

**Teaching Assistant**

The Wharton School, University of Pennsylvania  
STAT 102: Business Statistics Spring 2017  
STAT 970: Mathematical Statistics Fall 2016  
STAT 622: Statistical Modeling Spring 2016  
STAT 550: Mathematical Statistics Fall 2015

**STUDENT  
SUPERVISION**

**PhD Thesis Advisor:**

1. Prabrisha Rakshit (Graduated in 2023; Assistant Professor in the Department of Operations Management, Quantitative Methods, and Information Systems at the Indian Institute of Management Udaipur);
2. Taehyeon Koo (Graduated in 2025; Joint with Dr. Nicole Pashley; first position: Post-doctoral fellow at Columbia University);
3. Zhenyu Wang (Rutgers, Expected 2027);
4. Mengchu Zheng (Rutgers, Expected 2028);
5. Chao Qin (Zhejiang University)
6. Yuebei Shi (Zhejiang University)
7. Chen Ling (Zhejiang University)
8. Jiahang Shao (Zhejiang University)
9. Wenyan Shu (Zhejiang University)

**Postdoc Advisor:**

ACADEMIC  
SERVICE

1. Yichuan Bai (Ph.D. at Iowa State)
  1. Associate Editor
    - *Journal of the American Statistical Association*, 2023-
  2. Organizer of Causal Inference Reading Group (Joint with Nicole Pashley and Tirthankar Dasgupta), Department of Statistics, Rutgers
  3. Department Retreat Chair (2019-2020), Department of Statistics, Rutgers
  4. Department Seminar Chair (2018-2019), Department of Statistics, Rutgers
  5. Other Rutgers Committee service:
    - Department website committee (2020-2023)
    - Department retreat committee (2017-2018)
    - FSRM/MSDS committee (2017-2023)
    - Ph.D. Exam committee (2018-2020)
    - Graduate Curriculum committee (2019-2021)
  6. Organizing Committee for 2019 Rutgers Statistics Symposium
  7. Program Committee for ICSA 2019 11th International Conference
  8. Local Organizing Committee for 2018 ICSA Applied Symposium.
  9. Reviewer for the following journals: *Annals of Statistics*, *Journal of the American Statistical Association*, *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, *Biometrika*, *Journal of Machine Learning*, *Journal of Econometrics*, *Biometrics*, *Statistica Sinica*, *IEEE International Symposium on Information Theory*, *Journal of Applied Statistics*, *COLT*.

SHORT COURSES

1. “*Nonregular Inference*”, Department of Economics, Yale University, Feb. 2024
2. “*Nonregular Inference*”, CELEHS Distinguished Lecture Series, Department of Biostatistics, Harvard University, Feb. 2024
3. “*Robust Deconfounding*”, Department of Biostatistics, Harvard University, Feb. 2024

INVITED TALKS

1. Department seminar, Department of Economics, University of Oxford, UK, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, June 2024
2. Department seminar, Department of Statistics, University of Oxford, UK, “*Robust Instrumental Variable Analysis.*”, June 2024
3. Department seminar, University of Geneva, Switzerland, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, May 2024
4. Department seminar, EPFL, Switzerland, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, May 2024
5. Department seminar, Seminar for Statistics, ETH Zurich, Switzerland, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, May 2024
6. Department seminar, Inria, France, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, April 2024
7. Seminar, Amsterdam Machine Learning Lab, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, March 2024



8. Department seminar, Department of Economics, Yale University, USA, “*Robust Instrumental Variable Analysis.*”, Feb 2024
9. Causal Reading Group, Department of Statistics & Data Science, Carnegie Mellon University, USA, “*Robust Deconfounding.*”, Jan 2024
10. Machine Learning Reading Group, Department of Statistics & Data Science, Carnegie Mellon University, USA, “*Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, Jan 2024
11. Department seminar, Department of Statistics, The Hong Kong Polytechnic University, Hong Kong, “*Domain Generalization with Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, Jan 2024
12. Department seminar, Department of Statistics, The Chinese University of Hong Kong, Hong Kong, “*Domain Generalization with Adversarially Robust Learning: Identification, Estimation, and Uncertainty Quantification.*”, Jan 2024
13. Invited talk, ICSDS, Lisbon, Portugal, “*Distributionally Robust Machine Learning with Multi-source Data.*”, Sep 2023
14. Department seminar, Department of Mathematics, NJIT, USA, “*Two Stage Curvature Identification with Machine Learning: Causal Inference with Possibly Invalid Instrumental Variables.*”, Oct 2023
15. ETH/UZH Research Seminar on Statistics and FDS seminar series, Zurich, Switzerland, “*Robust Causal Inference with Possibly Invalid Instruments: Post-selection Problems and A Solution Using Searching and Sampling.*”, Sep 2023
16. Harvard Cai Lab seminar, The Chan School of Public Health, Harvard University, USA, “*Distributionally Robust Machine Learning with Multi-source Data.*”, Sep 2023
17. Department seminar, ISOM, HKUST, Hong Kong, China, “*Robust Inference for Federated Meta-Learning.*”, Aug 2023
18. Invited talk, 2023 Hangzhou Data Science Conference, Hangzhou, China, “*Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies.*”, Aug 2023
19. Invited speaker (virtual), EcoSta 2023, Tokyo, Japan, “*Two Stage Curvature Identification with Machine Learning: Causal Inference with Possibly Invalid Instrumental Variables.*”, Aug 2023
20. Invited speaker, 9th RUC-IFS, Beijing, China, “*Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies.*”, July 2023
21. Invited speaker, JCSDS, Beijing, China, “*Robust Inference for Federated Meta-Learning.*”, July 2023
22. Invited speaker, ICSA 2023, Hong Kong, China, “*Causal Inference with Invalid Instruments: Post-selection Problems and A Solution Using Searching and Sampling.*”, July 2023
23. Invited talk (virtual), joint statistics seminar of ENSAE/Ecole Polytechnique, France, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, June 2023
24. Invited talk (virtual), Inria, France, “*Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies.*”, May 2023
25. Invited talk (virtual), Beijing Normal University, China, “*Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies.*”, May 2023
26. Invited talk (virtual), Peking University, China, “*Robust Inference for Federated Meta-Learning.*”, March 2023

27. Invited talk (virtual), 1st joint webinar of the IMS New Researchers Group, Young Data Science Researcher Seminar Zürich and the YoungStatS Project, “*Statistical Inference for Maximin Effects: Identifying Stable Associations across Multiple Studies.*”, March 2023
28. Invited talk (virtual), CMStatistics 2022, London, UK, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, Dec 2022
29. Levin Lecture, Department of Biostatistics, Columbia University, USA, “*Multi-data Replicability via the Maximin Criterion: High-Dimensional Inference for Group Distributionally Robust Models.*”, Sep 2022
30. Lab seminar (virtual) led by Tianxi Cai, The Chan School of Public Health, Harvard University, USA, “*Robust Inference for Federated Meta-Learning.*”, Sep 2022
31. RAND Center Causal Inference Symposium (virtual), “*Two Stage Curvature Identification with Machine Learning: Causal Inference with Possibly Invalid Instrumental Variables.*”, Aug 2022
32. Invited speaker, JSM 2022, USA, “*Causal Inference with Invalid Instruments: Post-selection Problems and A Solution Using Searching and Sampling.*”, Aug 2022
33. Invited speaker (virtual), ICSA 2022, University of Florida, USA, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, June 2022
34. Online causal inference seminar (virtual, discussed by Professor Frank Windmeijer), “*Two Stage Curvature Identification with Machine Learning: Causal Inference with Possibly Invalid Instrumental Variables.*”, April 2022
35. Center for Causal Inference seminar (virtual), University of Pennsylvania, USA, “*Two Stage Curvature Identification with Machine Learning: Causal Inference with Possibly Invalid Instrumental Variables.*”, March 2022
36. Department seminar (virtual), Department of Biostatistics & Medical Informatics, University of Wisconsin–Madison, USA, “*Decorrelated Local Linear Estimator: Inference for Non-linear Effects in High-dimensional Additive Models.*”, Feb 2022
37. Lab seminar (virtual) led by Tianxi Cai, The Chan School of Public Health, Harvard University, USA, “*Transfer Learning with Multi-source Data: High-Dimensional Inference for Group Distributionally Robust Models.*”, Jan 2022
38. Invited speaker (virtual), CMStatistics 2021, “*Inference for Case Probability in High-dimensional Logistic Regression.*”, Dec 2021
39. Invited speaker (virtual), JSM 2021, Seattle, USA, “*Inference for High-dimensional Maximin Effects in Heterogeneous Regression Models Using a Sampling Approach.*”, Aug 2021
40. Invited speaker (virtual), The First International Conference on Statistics and Related Fields, Luxembourg, “*Inference for High-dimensional Maximin Effects in Heterogeneous Regression Models Using a Sampling Approach.*”, July 2021
41. Lab seminar (virtual) led by Tianxi Cai, The Chan School of Public Health, Harvard University, USA, “*Maximin Effect and Distributional Robustness: A Review and New Advances.*”, June 2021
42. Department seminar (virtual), Department of Statistics, East China Normal University, Shanghai, China, “*Inference for High-dimensional Maximin Effects in Heterogeneous Regression Models Using a Sampling Approach.*”, May 2021
43. Center for Causal Inference seminar (virtual), University of Pennsylvania, USA, “*Post-selection Problems for Causal Inference with Invalid Instruments: A Solution Using Searching and Sampling.*”, May 2021

44. Department seminar (virtual), Department of Economics, The Chinese University of Hong Kong, Hong Kong, China, “*Post-selection Problems for Causal Inference with Invalid Instruments: A Solution Using Searching and Sampling.*”, April 2021
45. Department seminar (virtual), Department of Statistics, The University of Hong Kong, Hong Kong, China, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, April 2021
46. Department seminar (virtual), Medical School, University of Exeter, Exeter, UK, “*Inference for Non-linear Treatment Effects with Control Function Methods.*”, Feb 2021
47. Invited talk (virtual), CMStatistics 2020, London, UK, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, Dec 2020
48. Department seminar (virtual), Department of Statistics, Cornell University, USA, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding.*”, Oct 2020
49. Invited talk (virtual), JSM 2020, Philadelphia, USA, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding and Measurement Errors.*”, Aug 2020
50. Invited participant (virtual), “*Mathematical and Statistical Challenges in Uncertainty Quantification.*”, Cambridge, UK, July 2020
51. Department seminar (virtual), Department of Statistics, UC Davis, USA, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding and Measurement Errors.*”, May 2020
52. Center for Causal Inference seminar (virtual), University of Pennsylvania, USA, “*Doubly Debiased Lasso: High-Dimensional Inference under Hidden Confounding and Measurement Errors.*”, May 2020
53. Biostatistics reading group (virtual, led by Jinbo Chen), University of Pennsylvania, USA, “*Group Inference in High Dimensions with Applications to Hierarchical Testing.*”, May 2020
54. Department seminar, Department of Statistics, East China Normal University, Shanghai, China, “*Group Inference in High Dimensions with Applications to Hierarchical Testing.*”, Dec 2019
55. Invited talk, 11th ICSA International Conference, Hangzhou, China, “*Group Inference in High Dimensions with Applications to Hierarchical Testing.*”, Dec 2019
56. Invited talk, International Statistical Conference in Memory of Professor Sik-Yum Lee, Hong Kong, China, “*Group Inference in High Dimensions with Applications to Hierarchical Testing.*”, Dec 2019
57. Causal reading group (led by James Robins), School of Public Health, Harvard University, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Sep 2019
58. Department seminar, Department of Statistics, East China Normal University, Shanghai, China, “*Individualized Treatment Selection: A Hypothesis Testing Approach in High-dimensional Models.*”, June 2019
59. Invited talk, 2019 Hangzhou Data Science Conference, Hangzhou, China, “*Local Inference in High-dimensional Sparse Additive Modeling.*”, May 2019
60. Department seminar, School of Data Science, City University of Hong Kong, Hong Kong, China, “*Individualized Treatment Selection: A Hypothesis Testing Approach in High-dimensional Models.*”, May 2019
61. Department seminar, ISOM, HKUST, Hong Kong, China, “*Local Inference in High-dimensional Sparse Additive Modeling.*”, May 2019

62. Department seminar, Department of Statistics, University of Virginia, USA, “*Local Inference in High-dimensional Sparse Additive Modeling.*”, March 2019
63. Invited talk, 2019 ICSA Data Science Conference, Xishuangbanna, Yunnan, China, “*Individualized Treatment Selection: A Hypothesis Testing Approach in High-dimensional Models.*”, Jan 2019
64. Young Research Session, Memorial Workshop for Lawrence D. Brown, University of Pennsylvania, USA, “*Individualized Treatment Selection: A Hypothesis Testing Approach in High-dimensional Models.*”, Nov 2018
65. Department seminar, Seminar for Statistics, Department of Mathematics, ETH Zurich, Switzerland, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Nov 2018
66. Department seminar, Department of Mathematics, NJIT, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Nov 2018
67. Department seminar, ORFE, Princeton University, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Oct 2018
68. Department seminar, ISOM, HKUST, Hong Kong, China, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, July 2018
69. Department seminar, Department of Statistics, Nankai University, China, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, July 2018
70. Invited talk, IMS Asia Pacific Rim Meeting, Singapore, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, June 2018
71. Invited talk, Hong Kong EcoStat Conference, Hong Kong, China, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, June 2018
72. Invited talk, ICSA Symposium 2018, New Brunswick, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, June 2018
73. Invited talk, Purdue Symposium on Statistics, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, June 2018
74. Invited talk, 2018 Hangzhou Data Science Conference, Hangzhou, China, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, May 2018
75. Invited talk, Lorentz Center, Leiden University, Netherlands, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Apr 2018
76. Department seminar, Department of Statistics, Columbia University, USA, “*Semi-supervised Inference for Explained Variance in High-dimensional Linear Regression and Its Applications.*”, Apr 2018
77. Invited talk, “*Statistical Foundations of Uncertainty Quantification for Inverse Problems.*”, Cambridge, UK, June 2017

78. Seminar, Center for Statistical Methods in Big Data, University of Pennsylvania, USA, “*Inference with High-dimensional Covariates and Possibly Invalid Instruments.*”, Apr 2017
79. Seminar, Institute of Data Science, Fox School of Business, Temple University, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Feb 2017
80. Department seminar, Department of Biostatistics, UC Berkeley, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Feb 2017
81. Department seminar, Department of Statistics, Rutgers University, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Feb 2017
82. Department seminar, Department of Statistics, University of Michigan, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Jan 2017
83. Department seminar, Department of Statistics, University of Minnesota, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Jan 2017
84. Department seminar, Department of Statistics, UIUC, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Jan 2017
85. Department seminar, DPMMS, University of Cambridge, UK, “*Inference for High-dimensional Linear Regression: Fundamental Limits and Algorithms.*”, Jan 2017
86. Department seminar, Department of Statistics, UC Santa Barbara, USA, “*Inference for High-dimensional Linear Models: Fundamental Limits and Algorithms.*”, Jan 2017
87. Invited talk, Mathematical Meeting in Statistics, Fréjus, France, “*Optimal Estimation of Genetic Correlation in High-dimensional Linear Models.*”, Dec 2016
88. Econometrics Lunch, Department of Economics, University of Pennsylvania, USA, “*Confidence Intervals for Treatment Effects in High-dimensional Linear Models.*”, Nov 2016

#### OTHER TALKS

1. Topic contributed talk, Joint Statistical Meetings, Baltimore, USA, “*Optimal Estimation of Co-Heritability in High-Dimensional Linear Models*”, Aug. 2017
2. Contributed talk, Joint Statistical Meetings, Chicago, USA, “*Accuracy Assessment for High-dimensional Linear Regression*”, Aug. 2016
3. Contributed talk, Eastern North American Region, Austin, USA, “*Confidence Intervals for High-Dimensional Linear Regression: Minimax Rates and Adaptivity*”, Mar. 2016
4. Poster presentation, John W. Tukey Conference, Princeton University, “*Confidence Intervals for High-Dimensional Linear Regression: Minimax Rates and Adaptivity*”, Sept. 2015
5. Contributed talk, Joint Statistical Meetings, Seattle, USA, “*Distance Matrix Estimation from Noisy Observation of Low Rank Position Matrix*”, Aug. 2015
6. Contributed talk, Joint Statistical Meetings, Boston, USA, “*Instrumental Variable Approach for Mediation Analysis of Count Model*”, Aug. 2014
7. Topic Contributed talk, Joint Statistical Meetings, Montreal, Canada, “*Instrumental Variable Approach for Mediation Analysis of Zero-Inflated Count Model*”, Aug. 2013
8. Poster presentation, Atlantic Causal Inference Conference, Harvard University, “*Control Function Instrumental Variable Estimation of Nonlinear Causal Effect Models*”, May. 2013

## MEMBERSHIPS

- Institute of Mathematical Statistics
- American Statistical Association
- Royal Statistical Society
- Bernoulli Society for Mathematical Statistics and Probability
- International Chinese Statistical Association
- The Econometric Society