

Yuhao Wang

website <https://yuhaow.github.io>

APPOINTMENTS

Assistant Professor

Institute of Interdisciplinary Information Sciences, Tsinghua University, Beijing, China 08/2020 - present

Principal Investigator

Shanghai Qi Zhi Institute, Shanghai, China 08/2020 - present

Research Associate

Statistical Laboratory, University of Cambridge, Cambridge, UK 08/2019 - 07/2020
Advisor: Professor Rajen Shah

EDUCATION

Doctor of Philosophy

Department of EECS, Massachusetts Institute of Technology, Cambridge, MA, USA 06/2019
Advisor: Professor Caroline Uhler

Master of Science

Department of EECS, Massachusetts Institute of Technology, Cambridge, MA, USA 06/2016
Advisor: Professor Bonnie Berger

Bachelor of Engineering

Department of Automation, Tsinghua University, Beijing, China 07/2014

AWARDS

Forbes China 30 under 30 (2021) 09/2021

CONFERENCE AND WORKSHOP ORGANIZATIONS

Randomization-Based Inference and Experimental Design Session, Bernoulli-IMS 11th World Congress in Probability and Statistics, Ruhr University Bochum, Bochum, Germany 08/2024
- Co-organizers: Xinran Li (University of Chicago)

2024 Shanghai Workshop on Robustness Meets Causality: Theory and Applications, Shanghai Qi Zhi Institute, Shanghai, China 07/2024

- Co-organizers: Xinran Li (University of Chicago), Rajen Shah (University of Cambridge)

- Website: <https://sqz.ac.cn/workshop/rmc2024/>

ACADEMIC SERVICE

Associate editor

Electronic Journal of Statistics 2025 - present

Editorial board reviewer

Journal of Machine Learning Research 2020 - present

Senior program committee (SPC)

IJCAI 2021; AAAI 2023; AAAI 2024

PUBLICATIONS

(*: equal contribution or alphabetical order)

Preprint

- Xin Lu*, **Y. Wang*** and Zhiheng Zhang*. *Adjusting auxiliary variables under approximate neighborhood interference*, major revision at Journal of the American Statistical Association, preprint arXiv:2411.19789
- Xingjian Zhang and **Y. Wang**. *On the physics of nested Markov models: a generalized probabilistic theory perspective*, preprint arXiv:2411.11614
- **Y. Wang**, Pengkun Yang and Alexandre B. Tsybakov. *Minimax estimation of functionals in sparse vector model with correlated observations*, preprint arXiv:2407.14778
- **Y. Wang** and Xinran Li. *Asymptotic theory of the best-choice rerandomization using the Mahalanobis distance*, minor revision at Journal of Econometrics, preprint arXiv:2312.02513
- Lin Liu*, Xinbo Wang* and **Y. Wang***. *Root-n consistent semiparametric learning with high-dimensional nuisance functions under minimal sparsity*, preprint arXiv:2305.04174
- **Y. Wang***, Weiming Zhu*. *Profit-driven experimental design*, preprint at SSRN:<https://ssrn.com/abstract=3896229>

Referred Publications

- Xin Lu, Fan Yang and **Y. Wang**. *Debiased regression adjustment in completely randomized experiments with moderately high-dimensional covariates*, The Annals of Statistics (accepted).
- Kaiyue Wen*, Tengyao Wang* and **Y. Wang**. *Residual permutation test for high-dimensional regression coefficient testing*, The Annals of Statistics (accepted).
- Guido Imbens*, Nathan Kallus*, Xiaojie Mao*, **Y. Wang***. *Long-term causal inference under persistent confounding via data combination*, Journal of the Royal Statistical Society, Series B (accepted).
- **Y. Wang**, Rajen D. Shah. *Debiased inverse propensity score weighting for estimation of average treatment effects with high-dimensional confounders*, The Annals of Statistics 52.5 (2024): 1978-2003.
- **Y. Wang**, Xinran Li. *Rerandomization with diminishing covariate imbalance and diverging number of covariates*, The Annals of Statistics 50.6 (2022): 3439-3465.
- Madeline Navarro, **Y. Wang**, Antonio G. Marques, Caroline Uhler and Santiago Segarra. *Joint inference of multiple graphs from matrix polynomials*, Journal of Machine Learning Research 23.76 (2022): 1-35.
- Alexandra Carpentier*, Olivier Collier*, Laetitia Comminges*, Alexandre B. Tsybakov*, **Y. Wang***. *Estimation of the ℓ_2 -norm and testing in sparse linear regression with unknown variance*, Bernoulli 28.4 (2022): 2744-2787.
- Liam Solus, **Y. Wang**, Caroline Uhler. *Consistency guarantees for greedy permutation-based causal inference algorithms*, Biometrika 108.4 (2021): 795-814.
- **Y. Wang**, Uma Roy, Caroline Uhler. *Learning High-dimensional Gaussian Graphical Models under Total Positivity without Adjustment of Tuning Parameters*, International Conference on Artificial Intelligence and Statistics, Virtual online, Aug. 26-28, 2020.
- Basil Saeed, Anastasiya Belyaeva, **Y. Wang**, Caroline Uhler. *Anchored causal inference in the presence of measurement error*, UAI 2020.
- Chandler Squires, **Y. Wang**, Caroline Uhler. *Permutation-based causal structure learning with unknown intervention targets*, UAI 2020.
- **Y. Wang**, Santiago Segarra, Caroline Uhler. *High-dimensional joint estimation of multiple directed Gaussian graphical models*, Electronic Journal of Statistics 14.1 (2020): 2439-2483.

- Alexandra Carpentier*, Olivier Collier*, Laetitia Comminges*, Alexandre B. Tsybakov*, **Y. Wang***. *Minimax rate of testing in sparse linear regression*, Automation and Remote Control 80.10 (2019): 1817-1834. (special issue in memory of Yakov Tsympkin)
- **Y. Wang**, Chandler Squires, Anastasiya Belyaeva, Caroline Uhler. *Direct estimation of differences in causal graphs*, NeurIPS 2018.
- **Y. Wang**, Liam Solus, Karren D. Yang, Caroline Uhler. *Permutation-based causal inference algorithms with interventions*, NeurIPS 2017.
- Santiago Segarra, **Y. Wang**, Caroline Uhler, Antonio G Marques. *Joint inference of networks from stationary graph signals*, Asilomar Conference on Signals, Systems, and Computers 2017.
- Yaron Orenstein, **Y. Wang**, Bonnie Berger. *RCK: accurate and efficient inference of sequence and structure-based protein-RNA binding models from RNAcompete data*, Bioinformatics 32.12 (2016): i351-i359.
- Xin He*, A. Ercument Cicek*, **Y. Wang***, Marcel H. Schulz, Hai-Son Le, Ziv Bar-Joseph. *De novo ChIP-seq analysis*, Genome biology 16.1 (2015): 205.
- **Y. Wang**, Jianyang Zeng, *Predicting drug-target interactions using restricted Boltzmann machines*, Bioinformatics 29.13 (2013): i126-i134.

TEACHING EXPERIENCE

Course Instructor 40470503-0 Advanced Applied Probability (English), Tsinghua University	09/2024 -
Course Instructor 80470282-0 Advanced Topics in Causal Inference (English), Tsinghua University	02/2021 -
Course Instructor 30470303-0 Probability and Statistics (English), Tsinghua University	09/2020 - 01/2023
Teaching Assistant 6.867 Machine Learning, Massachusetts Institute of Technology	09/2016 – 01/2017

INTERNSHIP EXPERIENCE

Student Intern School of Computer Science, Carnegie Mellon University. Advisor: Professor. Ziv Bar-Joseph	07/2013 – 08/2013
Undergraduate Research Assistant Institute for Interdisciplinary Information Sciences, Tsinghua University. Advisor: Professor Jianyang Zeng	2012.9 – 2013.3

SELECTED CONFERENCES AND INVITED TALKS

Debiased regression adjustment in completely randomized experiments with moderately high-dimensional covariates, Conference on causal inference: bridging theory and practice, TSIMF, Sanya, China.	01/2025
Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany.	08/2024
American Causal Inference Conference, Seattle, WA, USA.	05/2024
Minimax estimation of functionals in sparse vector model with correlated observations, Meetings in Mathematical Statistics, C.I.R.M., Marseille, France	12/2024
On the physics of nested Markov models: a generalized probabilistic theory perspective, The 14th Tsinghua Logic Colloquium, Tsinghua University – University of Amsterdam Joint Research Centre for Logic, Beijing, China.	11/2024

Long-term causal inference under persistent confounding via data combination, Statistics Seminar at Eastern China Normal University, Shanghai, China.	09/2024
Workshop on Heterogeneous and Distributed Data, University of Warwick, Coventry, UK.	06/2024
Workshop on complex time series analysis, TSIMF, Sanya, China.	01/2024
Algebraic economics workshop, IMSI, Chicago, USA.	11/2023
IIM Seminar, HKU Business School, University of Hong Kong, Hong Kong, China (virtual).	06/2022
Root-n consistent estimators for average treatment effect with minimal sparsity, Pacific Causal Inference Conference, Eastern China Normal University, Shanghai, China.	07/2024
Online Causal Inference Seminar (virtual). - Discussant: Professor Rajarshi Mukherjee (Harvard University)	05/2023
Residual permutation test for high-dimensional regression coefficient testing, Statistics and Data Science Seminar Series, London School of Economics, London, UK	05/2024
Meetings in Mathematical Statistics, C.I.R.M., Marseille, France	12/2023
Seminar at Statistical Laboratory, University of Cambridge, Cambridge, UK	09/2023
Seminar at Department of Statistics, University of Warwick, Coventry, UK	09/2023
International Seminar on Selective Inference (virtual). - Discussant: Professor Panos Toulis (University of Chicago)	02/2023
Statistics and Data Science Seminar, Center for Statistical Science, Peking University, Beijing, China (virtual).	12/2022
Debiased inverse propensity score weighting for estimation of average treatment effects with high-dimensional confounders, Joint Econometrics and Statistics Seminar Series, the London School of Economics, London, UK (virtual).	02/2022
Seminar at School of Mathematical Sciences, Shanghai Jiao Tong University, Shanghai, China.	07/2021
Young Data Science Researcher Seminar, ETH Zurich, Zurich, Switzerland (virtual).	06/2021
Seminar at Center for Statistical Science, Tsinghua University, Beijing, China.	03/2021
Seminar of Statistics at ENSAE-CREST, Paris, France (virtual).	11/2020
Pacific Causal Inference Conference, Peking University, Beijing, China (virtual).	09/2020
Discussion of “A machine learning approach for causal structure estimation in high dimensions”, Online Causal Inference Seminar (virtual).	01/2022