Yuhao Wang

website https://yuhaow.github.io

APPOINTMENTS

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

Research Affiliate
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 to be commenced in 2025

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)

Submitted for Review

- 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
- Xin Lu, Fan Yang and **Y. Wang**. *Debiased regression adjustment in completely randomized experiments with moderately high-dimensional covariates*, major revision at the Annals of Statistics, preprint arXiv:2309.02073
- Lin Liu*, Xinbo Wang* and **Y. Wang***. *Root-n consistent semiparametric learning with high-dimensional nuisance functions under minimal sparsity*, preprint arXiv:2305.04174
- Kaiyue Wen*, Tengyao Wang* and **Y. Wang**. *Residual permutation test for high-dimensional regression coefficient testing*, major revision at the Annals of Statistics, preprint arXiv:2211.16182
- **Y. Wang***, Weiming Zhu*. *Profit-driven experimental design*, preprint at SSRN:`https://ssrn.com/abstract=3896229`

Referred Publications

- 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 Tsypkin)

- **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 09/2024 -
40470503-0 Advanced Applied Probability (English), Tsinghua University

Course Instructor 02/2021 -
80470282-0 Advanced Topics in Causal Inference (English), Tsinghua University

Course Instructor 09/2020 - 01/2023
30470303-0 Probability and Statisticcs (English), Tsinghua University

Teaching Assistant 09/2016 – 01/2017
6.867 Machine Learning, Massachusetts Institute of Technology

INTERNSHIP EXPERIENCE

Student Intern 07/2013 – 08/2013
School of Computer Science, Carnegie Mellon University. Advisor: Professor. Ziv Bar-Joseph

Undergraduate Research Assistant 2012.9 – 2013.3
Institute for Interdisciplinary Information Sciences, Tsinghua University. Advisor: Professor Jianyang Zeng

SELECTED CONFERENCES AND INVITED TALKS

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

Debiased regression adjustment in completely randomized experiments with moderately high-dimensional covariates,
Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany. 08/2024
American Causal Inference Conference, Seattle, WA, USA. 05/2024

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). 05/2023
- Discussant: Professor Rajarshi Mukherjee (Harvard University)

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). 02/2023
- Discussant: Professor Panos Toulis (University of Chicago)

Statistics and Data Science Seminar, Center for Statistical Science, Peking University, Beijing, China (virtual). 12/2022

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

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

Learning high-dimensional Gaussian graphical models under total positivity without tuning parameters,
Seminar at Barcelona Graduate School of Economics, Barcelona, Spain. 05/2019

Provable algorithms for statistical challenges in data driven decision making,
Seminar at Krannert School of Management, Purdue University, West Lafayette, IN, USA. 02/2019

Seminar at iDDA, The Chinese University of Hong Kong (Shenzhen), Shenzhen, China. 01/2019

Seminar at IIIS, Tsinghua University, Beijing, China. 12/2018

Permutation-based causal inference algorithms with interventions,
NeurIPS spotlight presentation, Long Beach, CA, USA. 12/2017