Jie Wang

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia, USA 2020.08-2024.06 (Expected)
Ph.D. Student in Industrial Engineering at Statistic Track GPA: 3.93/4.00
Department: H. Milton Stewart School of Industrial and Systems Engineering (ISyE)
Research Focus: Decision-making Under Uncertainty Through the Lens of Optimization and Statistics
Advisor: Dr. Yao Xie

The Chinese University of Hong Kong, Shenzhen, China 2016.08-2020.06
B.S in Pure Mathematics GPA: 3.605/4.000
Department: School of Science and Engineering (SSE)

RESEARCH INTERESTS

Reliable decision-making under uncertainty, with a particular interest in distributionally robust optimization, reliable hypothesis testing, and network information theory. He develops robust and computationally efficient methodology with strong performance guarantees for statistical learning problems with offline/noisy/small-sample/high-dimensional data.

HONOR & AWARDS

Finalist, Data Challenge Competition on Offline Pricing, 2023 INFORMS Workshop on DMDA
Winner, Data Mining Best Theoretical Paper, 2023 INFORMS Workshop on DMDA
2022 ISyE Robert Goodell Brown Research Excellence award (Data Science and Statistics Track)
Honorable Mention, Best Student Poster Award, Georgia Statistics Day 2022
Winner, 2022 INFORMS Poster Competition
Best Performance Award for Ph.D. Comprehensive Exam in Statistics, 2021
Travel Award, IEEE International Symposium on Information Theory 2019

PUBLICATIONS

Journal Articles Published

1. **J. Wang**, R. Gao and H. Zha. Reliable Off-policy Evaluation for Reinforcement Learning. *Operations Research*, 2022.
2. **J. Wang**, M. Chen, T. Zhao, W. Liao and Y. Xie. A Manifold Two-Sample Test Study: Integral Probability Metric with Neural Networks. *Information and Inference: A Journal of the IMA*, 2023.

Journal Articles Submitted

1. **J. Wang**, R. Gao and Y. Xie. Sinkhorn Distributionally Robust Optimization. *Under Reviewed by Operations Research*, 2023.
   - Previous review decision on August 2022: Reject and Resubmit
   - Winner of INFORMS 2022 Best Poster Award.

2. **J. Wang**, S. Yang, Y. Dong and Y. Zhang. On Capacity of Line Networks with Generalized Batched Network Coding. *Submitted to IEEE Journal on Selected Areas in Communications*, 2023.

3. Y. Dong, **J. Wang** and S. Yang. Achievable Rate and Latency of Line Networks with Outage Links. *Submitted to IEEE Journal on Selected Areas in Communications*, 2023.

Conference Papers Published

1. Y. Hu, **J. Wang**, Y. Xie, A. Krause and Daniel Kuhn. Conditional Stochastic Bilevel Optimization. *Neural Information Processing Systems (NeurIPS) 2023*. (Journal version to be submitted to Operations Research)

2. **J. Wang**, T. Bozkus, Y. Xie and U. Mitra. Reliable Adaptive Recoding for Batched Network Coding with Burst-Noise Channels. *Asilomar Conference on Signals, Systems, and Computers 2023*. (Journal version to be submitted to IEEE Transactions on Signal Processing)

3. **J. Wang**, R. Moore, R. Kamaleswaran and Y. Xie. Improving Sepsis Prediction Model Generalization With Optimal Transport. *Machine Learning for Health (ML4H) 2022*.

4. **J. Wang** and Y. Xie. A Data-Driven Approach to Robust Hypothesis Testing Using Sinkhorn Uncertainty Sets. *IEEE International Symposium on Information Theory (ISIT), 2022*.

5. **J. Wang**, R. Gao and Y. Xie. Two-sample Test with Kernel Projected Wasserstein Distance. *Artificial Intelligence and Statistics, 2022*.
   - Oral Presentation, acceptance rate 44/1685 = 2.6%.

6. **J. Wang**, R. Gao and Y. Xie. Two-sample Test using Projected Wasserstein Distance. *IEEE International Symposium on Information Theory (ISIT), 2021*.

7. **J. Wang**, Z. Jia, H. H. Yin and S. Yang. Small-Sample Inferred Adaptive Recoding for Batched Network Coding. *IEEE International Symposium on Information Theory (ISIT), 2021*.

8. S. Yang and **J. Wang**. Upper Bound Scalability on Achievable Rates of Batched Codes for Line Networks. *IEEE International Symposium on Information Theory (ISIT), 2020*.

9. S. Yang, **J. Wang**, Y. Dong and Y. Zhang. On the Capacity Scalability of Line Networks with Buffer Size Constraints. *IEEE International Symposium on Information Theory (ISIT), 2019*.

10. **J. Wang**, S. Yang and C. Li. On the Tightness of a Cut-Set Bound on Network Function Computation. *IEEE International Symposium on Information Theory (ISIT), 2018*.

11. **J. Wang**, J. Ma, J. Yang and S. Yang. Efficient Underwater Sensor Network Data Collection Employing Unmanned Ships. *The 14th ACM International Conference on Underwater Networks & Systems (wuwnet), 2019*.

Preprints

1. **J. Wang**, S. Dey and Y. Xie. Variable Selection for Kernel Two-Sample Testing.
   - Selected for Poster Presentation at Mixed Integer Programming (MIP) Workshop 2023.

2. **J. Wang**, Y. Lin, S. Wei, R. Gao and Y. Xie. Entropic Regularization for Adversarial Robust Learning.
   - Winner of 18th INFORMS DMDA Workshop Best Paper Competition - Theoretical Track.

TEACHING

Teaching Assistant at Georgia Tech (Online) Fall 2020 - Spring 2021

Engineering Optimization (ISYE 3133)

Teaching Assistant at Georgia Tech (In-person) Fall 2021

Design and Analysis of Experiments (ISYE 6413)

PROFESSIONAL SERVICE

Journal Referee for:

- IEEE Transactions on Signal Processing
- IEEE Journal on Selected Areas in Information Theory
- IEEE Transactions on Information Theory
- Mathematical Programming
- Optimization Letters
- Systems & Control Letters
- PLOS ONE

Conference Reviewer for:

- AISTATS 2020, 2021, 2022, 2023, 2024.
- ICLR 2024.
- NeurIPS 2022, 2023.
- ICML 2023.

PRESENTATIONS

2023 INFORMS Annual Meeting, oral talk and poster presentation

2023 INFORMS Workshop on DMDA

2023 SIAM Conference on Optimization

2023 Mixed Integer Programming (MIP) Workshop

2023 ICERM Linear and Non-Linear Mixed Integer Optimization Workshop

2022 INFORMS Annual Meeting, oral talk and poster presentation

2022 SIAM Conference on Mathematics of Data Science

2022 International Conference on Continuous Optimization

2022 North American School of Information Theory, poster presentation

2022 Artificial Intelligence and Statistics, virtual

2021 INFORMS Annual Meeting, virtual

2021 IEEE International Symposium on Information Theory (ISIT), virtual

2020 ISIT, virtual

2019 ISIT, Paris, France

2019 International Conference on Underwater Networks & Systems, Atlanta, Georgia, USA

2018 ISIT, Vail, Colorado, USA