WENHAO YANG

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EDUCATION

- **Peking University, Beijing, China** *September 2018 - Present*
  Academy for Advanced Interdisciplinary Studies
  Ph.D. Candidate in Data Science of Statistics (Advisor: Prof. Zhihua Zhang)
  Ph.D. is anticipated in June 2023.
- **Peking University, Beijing, China** *September 2014 - July 2018*
  School of Mathematical Sciences
  B.S. in Statistics

RESEARCH INTERESTS

- Reinforcement Learning: theory and algorithms.
- Statistical Learning Theory.
- Other Topics: Semi-parametric statistics, Optimization, Applied probability.

RESEARCH EXPERIENCES

- **Face++(Megvii)** *October 2017 - February 2018*
  Research Intern (Advisor: Dr. Shuchang Zhou)
- **University of Alberta** *February 2022 - Present*
  Visiting Ph.D. Student (Advisor: Prof. Martha White)

SELECTED AWARDS AND SCHOLARSHIP

- Second Prize, Outstanding Freshman Scholarship, Peking University *October 2014*
- Yizheng Scholarship, Peking University *October 2016*
- May Forth Scholarship, Peking University *October 2017*
- Principal Scholarship, Peking University *October 2019*
- NeurIPS Travel Award *December 2019*
- First Prize, Peking University Scholarship *October 2020*

PROFESSIONAL SERVICES

- Journal reviewer for:
  Automatica.
- Conference Reviewer for:
  NeurIPS 2022, 2020 & 2019; ICLR 2023, 2022 & 2021; ICML 2022, 2021 & 2020; AISTATS 2023.

PUBLICATIONS

* denotes equal contribution or alphabetical order.

1. **Polyak-Ruppert-Averaged Q-Learning is Statistically Efficient**
   Xiang Li, **Wenhao Yang**, Jiadong Liang, Zhihua Zhang, Michael I. Jordan
   International Conference on Artificial Intelligence and Statistics (AISTATS) 2023

2. **Towards Theoretical Understandings of Robust Markov Decision Processes: Sample Complexity and Asymptotics**
   Wenhao Yang, Liangyu Zhang, Zhihua Zhang
   The Annals of Statistics 2022, Vol. 50, No. 6, 3223-3248

3. **Semi-infinitely Constrained Markov Decision Processes**
   Liangyu Zhang, Yang Peng, **Wenhao Yang**, Zhihua Zhang
   Neural Information Processing Systems (NeurIPS) 2022

4. **Federated Reinforcement Learning with Environment Heterogeneity**
   Hao Jin, Yang Peng, **Wenhao Yang**, Shusen Wang, Zhihua Zhang
   International Conference on Artificial Intelligence and Statistics (AISTATS) 2022

5. **On the Convergence of FedAvg on Non-IID Data**
   Xiang Li*, Kaixuan Huang*, **Wenhao Yang***, Shusen Wang, Zhihua Zhang
   International Conference on Learning Representations (ICLR) 2020

6. **A Regularized Approach to Sparse Optimal Policy in Reinforcement Learning**
   Wenhao Yang*, Xiang Li*, Zhihua Zhang
   Neural Information Processing Systems (NeurIPS) 2019

PREPRINTS

* denotes equal contribution or alphabetical order.

1. **Avoiding Model Estimation in Robust Markov Decision Processes with a Generative Model**
   Wenhao Yang, Han Wang, Tadashi Kozuno, Scott M. Jordan, Zhihua Zhang
   (Under-review)

2. **Semiparametrically Efficient Off-Policy Evaluation in Linear Markov Decision Processes**
   Chuhan Xie, **Wenhao Yang**, Zhihua Zhang
   (Under-review)

3. **Regularization and Variance-Weighted Regression Achieves Minimax Optimality in Linear MDPs: Theory and Practice**
   Toshinori Kitamura, Tadashi Kozuno, Yunhao Tang, Nino Vieillard, Michal Valko, **Wenhao Yang**, Jincheng Mei, Pierre MENARD, Mohammad Gheshlaghi Azar, Remi Munos, Olivier Pietquin, Matthieu Geist, Csaba Szepesvari, Wataru Kumagai, Yutaka Matsuo
   (Under-review)

4. **KL-Entropy-Regularized RL with a Generative Model is Minimax Optimal**
   Tadashi Kozuno, **Wenhao Yang**, Nino Vieillard, Toshinori Kitamura, Yunhao Tang, Jincheng Mei, Pierre Ménard, Mohammad Gheshlaghi Azar, Michal Valko, Rémi Munos, Olivier Pietquin, Matthieu Geist, Csaba Szepesvári
   (Under-review)

5. **Statistical Estimation of Confounded Linear MDPs: An Instrumental Variable Approach**
   Miao Lu*, **Wenhao Yang***, Liangyu Zhang*, Zhihua Zhang*
   (Under-review)

6. **Finding the Near Optimal Policy via Adaptive Reduced Regularization in MDPs**
   Wenhao Yang, Xiang Li, Guangzeng Xie, Zhihua Zhang
   Workshop on Reinforcement Learning Theory at ICML 2021

7. **Communication Efficient Decentralized Training with Multiple Local Updates** Xiang Li, **Wenhao Yang**, Shusen Wang, Zhihua Zhang

PRESENTATIONS

1. "Towards Theoretical understandings of Robust MDPs: Sample Complexity and Asymptotics"
   - School of Mathematical Sciences, Peking University, Jan 2022.
   - The China-R Conference 2022, Nov 2022.

TEACHING EXPERIENCES

- *"Reinforcement Learning: Theory and Algorithms"*, Fall 2019, PKU, Teaching Assistant