Wenhao Zhan

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Email: wenhao.zhan@princeton.edu

EDUCATION

Princeton University *Aug 2021-Present*
Ph.D. Student, Advisor: Jason D. Lee, Yuxin Chen

Princeton University *Aug 2021-Aug 2023*
Master of Arts, Advisor: Jason D. Lee, Yuxin Chen

- **Academic:** Overall GPA 4.00/4.00.

Tsinghua University
Bachelor of Electronic Engineering *Aug 2017-Jul 2021*

- **Academic:** Major GPA 3.97/4.00, Overall GPA 3.92/4.00, rank 1/242.

RESEARCH INTERESTS

Reinforcement Learning, Statistics.

PUBLICATIONS&PREPRINTS

* = equal contributions, $^{+}$ = equal contributions and ordered randomly

- **W. Zhan**, S. Fujimoto, Z. Zhu, J. D. Lee, D. R. Jiang, Y. Efroni, "Exploiting Structure in Offline Multi-Agent RL: The Benefits of Low Interaction Rank ", 2024. Preprint.

- A. Huang, **W. Zhan**, T. Xie, J. D. Lee, W. Sun, A. Krishnamurthy, D. J. Foster, "Correcting the Mythos of KL-Regularization: Direct Alignment without Overoptimization via Chi-squared Preference Optimization", 2024. Preprint.

- Z. Gao, **W. Zhan**, J. D. Chang, G. Swamy, K. Brantley, J. D. Lee, W. Sun "Regressing the Relative Future: Efficient Policy Optimization for Multi-turn RLHF", 2024. Preprint.

- J. D. Chang*, **W. Zhan***, O. Oertell, K. Brantley, D. Misra, J. D. Lee, W. Sun, "Dataset Reset Policy Optimization for RLHF", 2024. Preprint.

- Z. Gao, J. D. Chang, **W. Zhan**, O. Oertell, G. Swamy, K. Brantley, T. Joachims, J. A. Bagnell, J. D. Lee, W. Sun, "REBEL: Reinforcement Learning via Regressing Relative Rewards", 2024. Accepted by Neurips 2024.

- Z. Zhang, **W. Zhan**, Y. Chen, S. S. Du, J. D. Lee, "Optimal Multi-Distribution Learning", 2024. The 37th Annual Conference on Learning Theory.

- **W. Zhan**, M. Uehara, W. Sun, J. D. Lee, "Provable Reward-Agnostic Preference-Based Reinforcement Learning", 2024. The 12th International Conference on Learning Representations, **Spotlight**.

- **W. Zhan***, M. Uehara*, N. Kallus, J. D. Lee, W. Sun, "Provable Offline Preference-Based Reinforcement Learning", 2024. The 12th International Conference on Learning Representations, **Spotlight**.

- Y. Zhao^{+}, **W. Zhan**$^{+}$, X. Hu^{+}, H. Leung, F. Farnia, W. Sun, J. D. Lee, "Provably Efficient CVaR RL in Low-rank MDPs", 2024. The 12th International Conference on Learning Representations.

- G. Li*, **W. Zhan***, J. D. Lee, Y. Chi, Y. Chen, "Reward-agnostic Fine-tuning: Provable Statistical Benefits of Hybrid Reinforcement Learning", 2023. The 37th Conference on Neural Information Processing Systems.

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- **W. Zhan***, S. Cen*, B. Huang, Y. Chen, J. D. Lee, Y. Chi, "Policy Mirror Descent for Regularized Reinforcement Learning: A Generalized Framework with Linear Convergence", 2023. SIAM Journal on Optimization.

- **W. Zhan**, M. Uehara, W. Sun, J. D. Lee, "PAC Reinforcement Learning for Predictive State Representations", 2023. The 11th International Conference on Learning Representations.

- **W. Zhan**, J. D. Lee, Z. Yang, "Decentralized Optimistic Hyperpolicy Mirror Descent: Provably No-Regret Learning in Markov Games", 2023. The 11th International Conference on Learning Representations.

- **W. Zhan**, B. Huang, A. Huang, N. Jiang, J. D. Lee, "Offline Reinforcement Learning with Realizability and Single-policy Concentrability", 2022. The 35th Annual Conference on Learning Theory.

- C. Z. Lee, L. P. Barnes, **W. Zhan**, A. Özgür, "Over-the-Air Statistical Estimation of Sparse Models", 2021. The 2021 IEEE Global Communications Conference.

- **W. Zhan**, H. Tang, J. Wang, "Delay Optimal Cross-Layer Scheduling Over Markov Channels with Power Constraint", 2020. The IEEE International Symposium on Broadband Multimedia Systems and Broadcasting 2020.

REVIEWING EXPERIENCES

- ICML 2022, 2023, 2024
- NeurIPS 2022, 2023, 2024
- ICLR 2024
- OPT 2022
- Operations Research (INFORMS)
- Mathematical Programming (Springer)
- Machine Learning (Springer)
- SIAM Journal on Mathematics of Data Science

WORKING EXPERIENCES

Meta *Jun 2024-Sep 2024*

Research Intern

Project: Efficient Multi-Agent Offline Reinforcement Learning

TEACHING EXPERIENCES

- **Foundations of Reinforcement Learning**
  TA, Spring 2024, Princeton University
- **Special Topics in Information Sciences and Systems: Theory of Deep Weakly Supervised Learning**
  TA, Fall 2022, Princeton University

HONORS&AWARDS

- 2024 Award for Excellence by Princeton SEAS

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- Honorable mention for the 2023 Jane Street Graduate Research Fellowship
- 2017-2020 Tsinghua Academic Excellence Award
- 2018-2020 Tsinghua Scientific Research Excellence Award
- 2018-2020 National Encouragement Scholarship

TECHNICAL SKILLS

- Programming languages: C/C++, Python, Matlab, Verilog