

YULAI ZHAO

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EDUCATION

PRINCETON UNIVERSITY

Ph.D. in Electrical and Computer Engineering, expected 2027

Major: Machine Learning

Advisors: S.Y. Kung and Jason D. Lee

8/22

–Present

TSINGHUA UNIVERSITY

Bachelor of Engineering

Major: Electrical Engineering

8/18

–6/22

RESEARCH EXPERIENCE

PRINCETON UNIVERSITY, NJ, U.S.

Research Assistant, Department of Electrical and Computer Engineering

- Focused on theories for multi-agent reinforcement learning.
- Presented the first provable convergent multi-agent PPO algorithm with rates.
- Completed a first-author paper accepted by ICML 2023.

8/22

–1/23

ETH ZURICH, Switzerland

Research Assistant, Institute for Machine Learning at ETH Zurich

- Studied Optimization in a novel scheme called performative prediction.
- Raised mild assumptions that implied weak convexity of the performative risks.
- Completed a first-author paper accepted by OPT 2022 (NeurIPS 2022 Workshop).

6/21

–9/21

UNIVERSITY OF WASHINGTON, remote

Research Assistant, Paul G. Allen School of Computer Science and Engineering

- Studied representation learning theory under a transfer learning scheme.
- Presented a new statistical theory aiming at explain the success of NLP.
- Proved that pre-training could significantly improve sample efficiency of downstream tasks.
- Use a regularization inspired by the new theory to improve the base BERT model.
- Completed a first-author paper accepted as oral presentation at AISTATS 2023.

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–5/21

UNIVERSITY OF WASHINGTON, remote

Research Assistant, Paul G. Allen School of Computer Science and Engineering

- Studied Theoretical Reinforcement Learning in a multi-agent environment.
- Applied natural policy gradients in solving two-player zero-sum games.
- Completed a first-author paper accepted by AISTATS 2022.

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–1/21

SELECTED PUBLICATIONS

1. Local Optimization Achieves Global Optimality in Multi-Agent Reinforcement Learning
Yulai Zhao, Zhuoran Yang, Zhaoran Wang, Jason Lee
International Conference on Machine Learning (ICML) 2023
2. Blessing of Class Diversity in Pre-training
Yulai Zhao, Jianshu Chen, Simon S. Du
International Conference on Artificial Intelligence and Statistics 2023 (**Oral & Notable Paper**)
3. Optimizing the Performative Risk under Weak Convexity Assumptions
Yulai Zhao
OPT 2022: Optimization for Machine Learning (NeurIPS 2022 Workshop)
4. Provable Efficient Policy Optimization for Two-Player Zero-Sum Markov Games
Yulai Zhao, Yuandong Tian, Jason D. Lee, Simon S. Du
International Conference on Artificial Intelligence and Statistics 2022

AWARDS

Scholarship of Academic Excellence, Tsinghua University, 2020
Friends of Tsinghua-Toyota scholarship, Tsinghua University 2019
Scholarship of Academic Excellence, Tsinghua University, 2019

Top 10 in “Infinity of Math” competition, Tsinghua University, 2018

PROGRAMMING AND COMPUTING SKILLS

C++, Python (NumPy, pandas, PyTorch), MATLAB, PowerPoint