Qiwen Cui

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RESEARCH INTERESTS

Reinforcement Learning, Game Theory

EXPERIENCE

ByteDance, Seattle **Jan. 2024 - May. 2025**
Research Scientist Intern in large language model

- Advisor: Tianyi Liu, Hongxia Yang
- Developed an AI agent system with a planning agent and multiple specialized agents
- Implemented SFT and RL methods to improve LLM planning ability

University of Washington, Seattle **Sep. 2021 - Jun. 2025 (Expected)**
Ph.D. student in Computer Science & Engineering

- Advisor: Simon Shaolei Du

Peking University **Sep. 2017 - July. 2021**
B.S. in Statistics

- Advisor: Zaiwen Wen

CONFERENCE PUBLICATIONS

* denotes equal contribution or alphabetical ordering

1. Haozhe Jiang, **Qiwen Cui**, Zhihan Xiong, Maryam Fazel, Simon S. Du

   A Black-box Approach for Non-stationary Multi-agent Reinforcement Learning

   In International Conference on Learning Representations (ICLR) 2024

2. Zhaoyi Zhou, Chuning Zhu, Runlong Zhou, **Qiwen Cui**, Abhishek Gupta, Simon S. Du

   Free from Bellman Completeness: Trajectory Stitching via Model-based Return-conditioned Supervised Learning

   In International Conference on Learning Representations (ICLR) 2024

3. **Qiwen Cui**, Kaiqing Zhang, Simon S. Du

   Breaking the Curse of Multiagents in a Large State Space: RL in Markov Games with Independent Linear Function Approximation

   In 36th Annual Conference on Learning Theory (COLT) 2023

4. Haozhe Jiang*, **Qiwen Cui***, Zhihan Xiong, Maryam Fazel, Simon S. Du

   Offline Congestion Games: How Feedback Type Affects Data Coverage Requirement

   In International Conference on Learning Representations (ICLR) 2023

5. **Qiwen Cui**, Simon S. Du

   Provably Efficient Offline Multi-agent Reinforcement Learning via Strategy-wise Bonus

   In Conference on Neural Information Processing Systems (NeurIPS) 2022

6. **Qiwen Cui**, Simon S. Du

   When is Offline Two-Player Zero-Sum Markov Game Solvable?

   In Conference on Neural Information Processing Systems (NeurIPS) 2022

7. **Qiwen Cui***, Zhihan Xiong*, Maryam Fazel, Simon S. Du

   Learning in Congestion Games with Bandit Feedback

   In Conference on Neural Information Processing Systems (NeurIPS) 2022

8. Zhihan Xiong*, Ruoqi Shen*, **Qiwen Cui***, Maryam Fazel, Simon S. Du

   Near-Optimal Randomized Exploration for Tabular MDP

   In Conference on Neural Information Processing Systems (NeurIPS) 2022

9. Xinqi Wang, **Qiwen Cui**, Simon S. Du

   On Gap-dependent Bounds for Offline Reinforcement Learning

   In Conference on Neural Information Processing Systems (NeurIPS) 2022

10. Haque Ishfaq*, **Qiwen Cui***, Viet Nguyen, Alex Ayoub, Zhuoran Yang, Zhaoran Wang, Doina Precup, Lin F. Yang

    Randomized Exploration for Reinforcement Learning with General Value Function Approximation

    In International Conference on Machine Learning (ICML) 2021

11. **Qiwen Cui**, Lin F. Yang

    Minimax sample complexity for turn-based stochastic game

    In Uncertainty in Artificial Intelligence (UAI) 2021

12. **Qiwen Cui**, Lin F. Yang

    Is Plug-in Solver Sample-Efficient for Feature-based Reinforcement Learning?

    In Conference on Neural Information Processing Systems (NeurIPS) 2020

JOURNAL PUBLICATIONS

1. Minghan Yang, Dong Xu, **Qiwen Cui**, Zaiwen Wen, Pengxiang Xu

   A Multi-Step Matrix-Product Natural Gradient Method for Deep Learning

   IEEE Transactions on Pattern Analysis and Machine Intelligence 2022

2. **Qiwen Cui**, Qingxiao Chen, Pufan Liu, Debin Liu, Zaiwen Wen

   Clinical decision support model for tooth extraction therapy derived from electronic dental records

   In The Journal of Prosthetic Dentistry 2021

PREPRINTS

1. **Qiwen Cui**, Maryam Fazel, Simon S. Du

   Learning Optimal Tax Design in Nonatomic Congestion Games

   In https://arxiv.org/abs/2402.07437

2. Yan Dai, **Qiwen Cui**, Simon S. Du

   Refined Sample Complexity for Markov Games with Independent Linear Function Approximation

   In https://arxiv.org/abs/2402.07082

AWARDS/HONORS

NeurIPS Travel Awards 2022

Paul G. Allen First-Year Graduate Student Fellowship

Elite Undergraduate Training Program of Applied Mathematics (top 15%)

1st Prize in Mathematics Competition of Chinese College Student

1st Prize in National High School Mathematics Competition

PROFESSIONAL ACTIVITIES

Paper Reviewer: ALT 2023, COLT 2023, NeurIPS 2022, ICML 2022, NeurIPS 2021, ICML 2021, UAI2021

UW CSE Ph.D. Admission Reviewer 2021

CS Ed Week Open House for Washington K-12 Students: 2022/2023