

# Qiwen Cui

Paul G. Allen School of Computer Science & Engineering  
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## RESEARCH INTERESTS

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Reinforcement Learning, Game Theory

## EDUCATION

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**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

## EXPERIENCE

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**ByteDance, Seattle**

Jan. 2024 - May. 2024

*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

## CONFERENCE PUBLICATIONS

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\* denotes equal contribution or alphabetical ordering

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

Refined Sample Complexity for Markov Games with Independent Linear Function Approximation

*In 37th Annual Conference on Learning Theory (COLT) 2024*

2. 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*

3. 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*

4. **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*

5. 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*
6. **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*
7. **Qiwen Cui**, Simon S. Du  
When is Offline Two-Player Zero-Sum Markov Game Solvable?  
*In Conference on Neural Information Processing Systems (NeurIPS) 2022*
8. **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*
9. 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*
10. Xinqi Wang, **Qiwen Cui**, Simon S. Du  
On Gap-dependent Bounds for Offline Reinforcement Learning  
*In Conference on Neural Information Processing Systems (NeurIPS) 2022*
11. 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*
12. **Qiwen Cui**, Lin F. Yang  
Minimax sample complexity for turn-based stochastic game  
*In Uncertainty in Artificial Intelligence (UAI) 2021*
13. **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

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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**

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

Learning Optimal Tax Design in Nonatomic Congestion Games

*In <https://arxiv.org/abs/2402.07437>*

## **AWARDS/HONORS**

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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**

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Paper Reviewer: COLT 2024, ALT 2023, COLT 2023, NeurIPS 2022, ICML 2022, NeurIPS 2021, ICML 2021, UAI2021, Artificial Intelligence, Journal of the American Statistical Association, Operations Research

UW CSE Ph.D. Admission Reviewer 2021

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