WEI XIONG

Mathematics, The Hong Kong University of Science and Technology

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SHORT BIO

Wei Xiong is a first-year PhD student in mathematics at The Hong Kong University of Science and Technology, advised by Prof. Tong Zhang. He received a B.S. in mathematics from the University of Science and Technology of China in 2021, where he worked closely with Prof. Cong Shen and Prof. Haishan Ye.

His current research interests focus on learning theory, reinforcement learning, multi-armed bandit, and optimization.

EDUCATION

The Hong Kong University of Science and Technology *Hong Kong, China*
Ph.D. student, *Department of Mathematics* *2021.9 - present*
Advisor: Prof. Tong Zhang

University of Science and Technology of China *Hefei, China*
Bachelor of Science, *Department of Probability and Statistics*
Department of Electronic Engineering
GPA: 3.96/4.3, ranking: 1/72 in Statistics, 2/356 in EE.

Shanghai Jiao Tong University *Shanghai, China*
Exchange student at School of Electronic Information and Electrical Engineering
Weighted average score: 92.6/100

EXPERIENCE

The Hong Kong University of Science and Technology:
Teaching Assistant: MATH 6913W - Reading Course: Statistical Learning Theory *Spring 2022*
Teaching Assistant: MATH 2023 - Multivariable Calculus (Best TA Award) *Spring 2022*

Microsoft Research Asia (MSRA):
Intern: Networking Research and Machine Learning Group *Spring 2021*
Worked on bandwidth estimation for real-time communications with reinforcement learning

University of Science and Technology of China:
Teaching Assistant: Mathematical Statistics *Fall 2020*
Teaching Assistant: Data Structures and Databases *Spring 2020*
Teaching Assistant: Algorithms and Data Structures *Fall 2018*

University of Virginia:
Research Assistant: worked on multi-player multi-armed bandit (MPMAB) *2019.8 - 2019.11*

PUBLICATIONS AND PREPRINTS

[1] Wei Xiong*, Han Zhong*, Chengshuai Shi, Cong Shen, Liwei Wang, and Tong Zhang, "Nearly Minimax Optimal Offline Reinforcement Learning with Linear Function Approximation: Single-Agent MDP and Markov Game", Preprint.

[2] Wei Xiong, Han Zhong, Chengshuai Shi, Cong Shen, and Tong Zhang, "A Self-Play Posterior Sampling Algorithm for Zero-Sum Markov Game", ICML 2022.

[3] Han Zhong*, <u>Wei Xiong</u>*, Jiyuan Tan*, Liwei Wang, Tong Zhang, Zhaoran Wang, and Zhuoran Yang, "Pessimistic Minimax Value Iteration: Provably Efficient Equilibrium Learning from Offline Datasets", ICML, 2022.

[4] <u>Wei Xiong</u>, Yong Lin, "An Alternative Analysis of High-Probability Generalization Bound for Uniformly Stable Algorithms", Preprint, not intended for publication.

[5] Haishan Ye*, and <u>Wei Xiong</u>*, "A practical method for trace estimation of Matrix inverse", Submitted.

[6] Haishan Ye*, <u>Wei Xiong</u>*, and Tong Zhang, "PMGT-VR: A decentralized proximal-gradient algorithmic framework with variance reduction", Revision at TPAMI.

[7] Chengshuai Shi, <u>Wei Xiong</u>, Cong Shen, and Jing Yang, "Heterogeneous Multi-player Multi-armed Bandits: Closing the Gap and Generalization", Neurips, 2021.

[8] Chengshuai Shi, Haifeng Xu, <u>Wei Xiong</u>, and Cong Shen, "(Almost) Free Incentivized Exploration from Decentralized Learning Agents", Neurips, 2021.

[9] Pushi Zhang, Xiaoyu Chen, Li Zhao, <u>Wei Xiong</u>, Tao Qin, and Tie-Yan Liu, "Distributional Reinforcement Learning for Multi-Dimensional Reward Functions", Neurips, 2021.

[10] Chengshuai Shi, <u>Wei Xiong</u>, Cong Shen, and Jing Yang, "Decentralized multi-player multi-armed bandits with no collision information", AISTATS, 2020.

where * means alpha-order or equal contribution.

HONORS AND AWARDS

Best Teaching Assistant Award *May 2022*
The Hong Kong University of Science and Technology

Outstanding graduate of USTC and Anhui province *June 2021*
University of Science and Technology of China

Honor Program in Electronic Engineering/Artificial Intelligence *2017 - 2019*
Department of Electronic Engineering, University of Science and Technology of China

Best Soccer Referee of USTC Women Soccer League *March 2017*
Soccer Association, University of Science and Technology of China

FELLOWSHIP AND SCHOLARSHIP

Hong Kong PhD Fellowship *April 2021*
Yuanqing Yang Scholarship *November 2020*
Chinese Academy of Sciences Institute of Electronics Scholarship *October 2018*
National Scholarship *October 2017*
Zhuang Caifang Scholarship *July 2016*

PROFESSIONAL ACTIVITY

Conference Reviewer: Neurips 2022, ICML 2022.