SHAOCONG MA

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EDUCATION

PhD in Electrical and Computer Engineering, University of Utah Sep. 2019-Jun. 2024

M.A. in Statistics, University of California, Santa Barbara Sep. 2017-Jun. 2019

B.S. in Statistics, Sichuan University Sep. 2013-Jun. 2017

RESEARCH EXPERIENCES

Postdoctoral Researcher Jun. 2024-Present

The University of Maryland Institute for Advanced Computer Studies (UMIACS)

PI: Professor Heng Huang

- Lead a research team on developing novel algorithms with a focus on improving efficiency and robustness in large-scale applications including LLMs.

Research Intern (AI4Science) May. 2022-Aug. 2022

Lawrence Livermore National Security, LLC

Mentors: James Diffenderfer, Bhavya Kailkhura

- Designed a hybrid model incorporating Physics-Informed Graph Neural Network and External Black-Box PDE Solvers, successfully addressing non-differentiability challenges in fluid flow predictions.

SELECTED PUBLICATIONS

Shaocong Ma, and Heng Huang. *Revisiting Zeroth-Order Optimization: Minimum-Variance Two-Point Estimators and Directionally Aligned Perturbations.* ICLR 2025.

Shaocong Ma, Ziyi Chen, Shaofeng Zou, Yi Zhou. *Decentralized Robust V-Learning for Solving Markov Games with Model Uncertainty.* Journal of Machine Learning Research (JMLR) 2023.

Ziyi Chen, *Shaocong Ma*, Yi Zhou. *Finding Correlated Equilibrium of Constrained Markov Game: A Primal-Dual Approach.* NeurIPS 2022.

Ziyi Chen, *Shaocong Ma*, Yi Zhou. *Sample Efficient Stochastic Policy Extragradient Algorithm for Zero-Sum Markov Game.* ICLR 2022.

Shaocong Ma, Ziyi Chen, Yi Zhou, Shaofeng Zou. *Greedy-GQ with Variance Reduction: Finite-time Analysis and Improved Complexity.* ICLR 2021.

Shaocong Ma, Yi Zhou, Shaofeng Zou. *Variance-Reduced Off-Policy TDC Learning: Non-Asymptotic Convergence Analysis.* NeurIPS 2020.

Shaocong Ma, Yi Zhou. *Understanding the Impact of Model Incoherence on Convergence of Incremental SGD with Random Reshuffle.* ICML 2020.