**SHAOCONG MA**

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| **Phone**: +1 (385)-439-4778 | **Email:** [s.ma@utah.edu](mailto:s.ma@utah.edu) | **Website:** [mshaocong.github.io](https://mshaocong.github.io) |

# **EDUCATION**

**PhD in Electrical and Computer Engineering,** University of UtahSep. 2019-Jun. 2024

**M.A. in Statistics,** University of California, Santa BarbaraSep. 2017-Jun. 2019

**B.S. in Statistics,** Sichuan UniversitySep. 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**

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

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

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

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

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

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