HAIBO YANG

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RESEARCH INTERESTS

- Large-scale stochastic optimization
- Distributed and federated learning
- Multi-objective learning
- Robust machine learning

EDUCATION

The Ohio State University, United States *Jan. 2021 - May. 2023*
PhD Student in Electrical and Computer Engineering

Iowa State University, United States *Aug. 2018 - Dec. 2020*
PhD Student in Computer Science

Lanzhou University, China *Sep. 2015 - Jun. 2018*
Master of Engineering, Mechanics Engineering

Lanzhou University, China *Sep. 2011 - Jun. 2015*
Bachelor of Science, Theoretical and applied mechanics

EMPLOYMENT IN ACADEMIA AND INDUSTRY

Assistant Professor, Dept. of Computing and Information Sciences Ph.D.,
Rochester Institute of Technology, United States *Aug. 2023 - Present*
Software Engineer Intern, Machine Learning (PhD),
Meta *May. 2022 - Aug. 2022*

PUBLICATIONS

1. Zhe Li, Bicheng Ying, Zidong Liu, Chaosheng Dong, and Haibo Yang, "Achieving Dimension-Free Communication in Federated Learning via Zeroth-Order Optimization." in Proc. **ICLR**, 2025 (acceptance rate: 32.08%).

2. Minghong Fang, Seyedsina Nabavirazavi, Zhuqing Liu, Wei Sun, Sundararaja Sitharama Iyengar, and Haibo Yang, "Do We Really Need to Design New Byzantine-robust Aggregation Rules?." **NDSS**, 2025 (acceptance rate: 16.1%).

3. Mingjing Xu, Peizhong Ju, Jia Liu, and Haibo Yang, "PSMGD: Periodic Stochastic Multi-Gradient Descent for Fast Multi-Objective Optimization." **AAAI**, 2025 (acceptance rate: 23.4%).

4. Peizhong Ju, Haibo Yang, Jia Liu, Yingbin Liang, and Ness B. Shroff, "Can We Theoretically Quantify the Impacts of Local Updates on the Generalization Performance of Federated Learning?," in Proc. **ACM MobiHoc**, 2024 (acceptance rate: 24.5%).

5. Haibo Yang, Peiwen Qiu, Prashant Khanduri, Minghong Fang, and Jia Liu, "Understanding Server-Assisted Federated Learning in the Presence of Incomplete Client Participation," in Proc. **ICML**, 2024 (acceptance rate: 27.5%).

6. Tianchen Zhou, FNU Hairi, Haibo Yang, Jia Liu, Tian Tong, Fan Yang, Michinari Momma, Yan Gao, "Finite-Time Convergence and Sample Complexity of Actor-Critic Multi-Objective Reinforcement Learning," in Proc. **ICML**, 2024 (acceptance rate: 27.5%).

7. Haibo Yang, Zhuqing Liu, Jia Liu, Chaosheng Dong, and Michinari Momma, "Federated Multi-Objective Learning," in Proc. **NeurIPS**, 2023 (acceptance rate: 26.1%).

8. Haibo Yang, Peiwen Qiu, Prashant Khanduri, and Jia Liu, "With a Little Help from My Friend: Server-Aided Federated Learning with Partial Client Participation," International Workshop on Federated Learning **FL-NeurIPS**, 2022.

9. Haibo Yang, Peiwen Qiu, and Jia Liu, "Taming Fat-Tailed ('Heavier-Tailed' with Potentially Infinite Variance) Noise in Federated Learning," in Proc. **NeurIPS**, 2022 (acceptance rate: 25.6%).

10. Haibo Yang, Zhuqing Liu, Xin Zhang, and Jia Liu, "SAGDA: Achieving $\mathcal{O}(\epsilon^{-2})$ Communication Complexity in Federated Min-Max Learning," in Proc. **NeurIPS**, 2022 (acceptance rate: 25.6%).

11. Xin Zhang, Minghong Fang, Zhuqing Liu, Haibo Yang, Jia Liu, and Zhengyuan Zhu, "NETFLEET: Achieving Linear Convergence Speedup for Fully Decentralized Federated Learning with Heterogeneous Data," in Proc. **ACM MobiHoc**, 2022 (acceptance rate: 19.8%).

12. Haibo Yang, Xin Zhang, Prashant Khanduri, and Jia Liu, "Anarchic Federated Learning," in Proc. **ICML**, 2022 (**Long Presentation**, long presentation rate: 2%, acceptance rate: 21.9%).

13. Jiayu Mao*, Haibo Yang*, Peiwen Qiu, Jia Liu, and Aylin Yener, "CHARLES: Channel-QualityAdaptive Over-the-Air Federated Learning over Wireless Networks," in Proc. **IEEE SPAWC**, 2022. (equal contribution)

14. Haibo Yang, Peiwen Qiu, Jia Liu, Aylin Yener, "Over-the-Air Federated Learning with Joint Adaptive Computation and Power Control," in Proc. **IEEE ISIT**, 2022.

15. Prashant Khanduri, Haibo Yang, Mingyi Hong, Mingyi Hong, Jia Liu, Hoi To Wai, Sijia Liu, "Decentralized Learning for Overparameterized Problems: A Multi-Agent Kernel Approximation Approach," in Proc. **ICLR**, 2022 (acceptance rate: 32%).

16. Prashant Khanduri, Pranay Sharma, Haibo Yang, Mingyi Hong, Jia Liu, Ketan Rajawat and Pramod K. Varshney, "STEM: A Stochastic Two-Sided Momentum Algorithm Achieving Near-Optimal Sample and Communication Complexities for Federated Learning," in Proc. **NeurIPS**, 2021 (acceptance rate: 26%).

17. Haibo Yang, Jia Liu, and Elizabeth S. Bentley, "CFedAvg: Achieving Efficient Communication and Fast Convergence in Non-IID Federated Learning," in Proc. **IEEE/IFIP WiOpt**, 2021.

18. Haibo Yang, Minghong Fang, and Jia Liu,"Achieving Linear Speedup with Partial Worker Participation in Non-IID Federated Learning," in Proc. **ICLR**, 2021 (acceptance rate: 28.6%).

19. Haibo Yang, Xin Zhang, Minghong Fang, and Jia Liu, "Adaptive Multi-Hierarchical signSGD for Communication-Efficient Distributed Optimization," in Proc. **IEEE SPAWC**, 2020.

20. Haibo Yang, Xin Zhang, Minghong Fang, and Jia Liu, "Byzantine-Resilient Stochastic Gradient Descent for Distributed Learning: A Lipschitz-Inspired Coordinate-wise Median Approach," **IEEE CDC**, 2019.

PROFESSION SERVICE

Program Committee: ICDCS'24, SDM'24, PML-ICLR'24, FL-ICML'23, FL-NeurIPS'22, FL-NeurIPS'23, KDD (2023)

Conference Reviewer: KDD (2024), ICLR(2023, 2024), ICML(2022, 2023,2024), NeurIPS(2022, 2023), ISIT(2022), SPAWC(2022), CDC(2020)

Journal Reviewer:

- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Network Science and Engineering

- IEEE Open Journal of the Communications Society
- IEEE Transactions on Mobile Computing
- International Journal of Computer Vision

AWARDS

- ICML 2022 Long Oral Presentation
- Scholar Award, NeurIPS 2022
- Chun-Tsung Scholar, Chun-Tsung Endowment 2015