Aochuan Chen
Ph.D. Student in Computer Science

 (+1) 517-721-0877 chenaoch@msu.edu cse.msu.edu/ chenaoch Phoveran Aochuan Chen

Personal Information

I am a graduate student in computer science at Michigan State University. I am interested in building **scalable and trustworthy** neural networks.

Education

Doctor of Computer Science   08 2022 — Present
Michigan State University, East Lansing, USA
Advisor: Dr. Sijia Liu
OPTML Lab

Bachelor of Engineering   08 2018 — 06 2022
Tsinghua University, Beijing, China

Awards

Scholarly Awards
- Top 3% Paper Recognition of ICASSP 2023   2023

Undergraduate Award
- Entrepreneurship Excellence Award by Qingshan Capital   2021
- Social Practice Excellence Scholarship by Tsinghua University   2020
- Academic Excellence Scholarship by Tsinghua University   2019

Publications

(* represents equal contributions)

Conference Papers

[1] **A. Chen**, Y. Yao, P. Chen, Y. Zhang, S. Liu "Understanding and Improving Visual Prompting: A Label-Mapping Perspective", The IEEE/CVF Conference on Computer Vision and Pattern Recognition 2023 (CVPR'23) [PDF]

[2] YH. Zhang*, YM. Zhang*, **A. Chen***, J. Jia, J. Liu, G. Liu, M. Hong, S. Chang, S. Liu "Selectivity Drives Productivity: Efficient Dataset Pruning for Enhanced Transfer Learning", Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS'23)

[3] **A. Chen***, P. Lorenz*, Y. Yao, P. Chen, S. Liu "Visual Prompting for Adversarial Robustness", 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'23) [PDF]

Papers under Submission

[4] **A. Chen***, YM. Zhang*, J. Jia, J. Diffenderfer, J. Liu, K. Parasyris, YH. Zhang, Z. Zhang, B. Kailkhura, S. Liu "DeepZero: Scaling Up Zeroth-Order Optimization for Deep Model Training", submitted to ICLR 2024.

[5] Y. Zhang, H. Li, Y. Yao, **A. Chen**, S. Zhang, P. Chen, M. Wang, S. Liu "Visual Prompting Reimagined: The Power of Activation Prompts", submitted to ICLR 2024.

Research of Interest

Efficient Machine Learning: Efficient Model and Efficient Data
Despite the remarkable success deep machine learning models have achieved, the training & inferencing costs remain high. My research interest in this topic is summarized as follows:

- Design parameter-efficient [1 and 5] & data-efficient [2] transfer learning algorithms.
- Design scalable zeroth-order optimization algorithms for deep neural network training [4].

Trustworthy Machine Learning: Robust AI and Calibration
The deep learning models' robustness has become a research hotspot. My research interest in this topic is summarized as follows:

- Design efficient test-time defense algorithms [3].
- Leverage Bayesian learning to improve calibration.

Professional Activities

- **Reviewer**: ICML'22, ICML'23, KDD'22, ICASSP'22, ICASSP'23.

Last updated: September 23, 2023.