Yiping Wang

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Education

University of Washington, Seattle Sept. 2023 - Present
Ph.D. student in Paul G. Allen School of Computer Science & Engineering
Adviser: Prof. Simon Shaolei Du

Zhejiang University Sept. 2019 - June 2023
B.Eng. in Computer Science & Technology at College of Computer Science and Technology

- **Minor Program**: Mathematics and Applied Mathematics, Earned Credits: 45.5.
- **Performance**: Grade: 3.97/4.0 (91.7/100), Rank: Top 1%.

Research Interest

My main research interest lies in **machine learning theory**, especially **the foundations of deep learning and representation learning**. I am also keen on developing practical machine learning algorithms with strong theoretical guarantees. Currently, I'm working on optimizing **data selection methods for training foundational models**, together with accelerating model inference and video generation. Furthermore, I am always enthusiastic about understanding the essence of intelligence and exploring the cross-cutting areas of mathematics, physics, and AI, like to explore how to use LLM for complex reasoning and proving mathematical problems.

Professional Experiences

1. **Research Intern @ Microsoft, Weizhu Chen's Group** June 2024 - Present
   Mentor: Yelong Shen and Shuohang Wang
   Project: Video Generation

Preprint

* denotes equal contribution or alphabetical ordering.

1. **SHARP: Accelerating Language Model Inference by SHaring Adjacent layers with Recovery Parameters**
   Under Review.
   Yiping Wang, Hanxian Huang, Yifang Chen, Jishen Zhao, Simon S. Du, Yuandong Tian

Selected Publications

Check out my Google Scholar page for the comprehensive list.
(* denotes equal contribution or alphabetical ordering)

1. **CLIPLoss and Norm-Based Data Selection Methods for Multimodal Contrastive Learning** [Arxiv]
   Yiping Wang*, Yifang Chen*, Wendan Yan, Alex Fang, Wenjing Zhou, Kevin Jamieson, Simon S. Du
   NeurIPS 2024 (Spotlight)
2. **JoMA: Demystifying Multilayer Transformers via JOint Dynamics of MLP and Attention** [Arxiv]
   Yuandong Tian, **Yiping Wang**, Zhenyu Zhang, Beidi Chen, Simon S. Du
   ICLR 2024.
3. **Scan and Snap: Understanding Training Dynamics and Token Composition in 1-layer Transformer** [Arxiv]
   Yuandong Tian, **Yiping Wang**, Beidi Chen, Simon S. Du
   NeurIPS 2023.
   Oral presentation at High-dimensional learning dynamics workshop at ICML 2023

4. **Improved Active Multi-Task Representation Learning via Lasso** [Arxiv]
   Yiping Wang, Yifang Chen, Kevin Jamieson, Simon S. Du
   ICML 2023.
5. **C-Mixup: Improving Generalization in Regression** [Arxiv] [Code]
   Huaxiu Yao*, **Yiping Wang***, Linjun Zhang, James Zou, Chelsea Finn
   NeurIPS 2022.

Honors and Awards

Chu Kochen Scholarship in Zhejiang University (Top 12 in 20000+ undergraduates) 2022
National Scholarship in Chu Kochen Honor College (Top 2% in 600+ students) 2020
1st Prize for Academic Excellence in Chu Kochen Honor College 2020&2021&2022
1st Prize in Zhejiang Division of National Mathematics Competition for College Students 2020

Professional Activities

- Paper Reviewer: NeurIPS23, ICLR24, ICML24, TF2M@ICML24, DMLR@ICML24, NeurIPS24
- UW CSE Ph.D. Admission Reviewer: 2024.