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, and currently, I'm working on optimizing **data selection methods for training foundational models**. Furthermore, I am always enthusiastic about understanding the essence of intelligence and exploring the cross-cutting areas of mathematics, physics, and AI.

⊙ Preprint

* denotes equal contribution or alphabetical ordering.

1. **Variance Alignment Score: A Simple But Tough-to-Beat Data Selection Method for Multimodal Contrastive Learning** [Arxiv] [Code]
   Yiping Wang*, Yifang Chen*, Wendan Yan, Kevin Jamieson, Simon Shaolei Du

⊙ Publications

* denotes equal contribution or alphabetical ordering.

1. **JoMA: Demystifying Multilayer Transformers via JOint Dynamics of MLP and Attention** [Arxiv]
   Yuandong Tian, Yiping Wang, Zhenyu Zhang, Beidi Chen, Simon Du
   International Conference on Learning Representations (ICLR) 2024.
2. **Scan and Snap: Understanding Training Dynamics and Token Composition in 1-layer Transformer** [Arxiv]
   Yuandong Tian, Yiping Wang, Beidi Chen, Simon Du
   Conference on Neural Information Processing Systems (NeurIPS) 2023.
   Selected as Oral presentation at High-dimensional learning dynamics workshop at ICML 2023
3. **Improved Active Multi-Task Representation Learning via Lasso** [Arxiv]
   Yiping Wang, Yifang Chen, Kevin Jamieson, Simon Du
   International Conference on Machine Learning (ICML) 2023.
4. **C-Mixup: Improving Generalization in Regression** [Arxiv] [Code]
   Huaxiu Yao*, Yiping Wang*, Linjun Zhang, James Zou, Chelsea Finn
   Conference on Neural Information Processing Systems (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: NeurIPS 2023, ICLR 2024, ICML 2024.
- UW CSE Ph.D. Admission Reviewer: 2024.