Yifei Wang

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EDUCATION

Peking University, School of Mathematical Sciences **09 2017 – 07 2023 (expected)**
Ph.D. Candidate in Applied Math *Beijing, China*
Member of ZERO Lab. Advisors: Yisen Wang, Jiansheng Yang, Zhouchen Lin

Peking University, School of Mathematical Sciences **09 2013 – 07 2017**
Bachelor of Science *Beijing, China*

Peking University, Department of Philosophy **09 2014 – 07 2017**
Bachelor of Art (Double Degree) *Beijing, China*

RESEARCH INTERESTS

- Self-Supervised Learning
- Robust Representation Learning
- Graph Representation Learning

SELECTED HONORS AND AWARDS

- **National Scholarship**, Peking University **(top 1%)**, 2021, 2022.
- **Principal Scholarship**, Peking University **(top 1%)**, 2022.
- **Academic Innovation Award**, Peking University **(top 1%)**, 2022.
- **Best Machine Learning Paper Award**, ECML-PKDD 2021 **(1/685)**.
- **Silver Best Paper Award**, ICML 2021 workshop on AML.
- **Meritorious Winner (First Prize)**, Mathematical Contest in Modeling, 2016.
- **Yizheng Scholarship**, Peking University, 2016.

SELECTED PUBLICATIONS (* marks equal contribution)

Self-Supervised Learning

How Mask Matters: Towards Theoretical Understandings of Masked Autoencoders
- Qi Zhang*, **Yifei Wang***, Yisen Wang
- Advances in Neural Information Processing Systems (**NeurIPS 2022**)

Chaos is a Ladder: A New Theoretical Understanding of Contrastive Learning via Augmentation Overlap
- **Yifei Wang***, Qi Zhang*, Yisen Wang, Jiansheng Yang, Zhouchen Lin
- International Conference on Learning Representations (**ICLR 2022**)

Residual Relaxation for Multi-view Representation Learning
- **Yifei Wang**, Zhengyang Geng, Feng Jiang, Chuming Li, Yisen Wang, Jiansheng Yang, Zhouchen Lin
- Advances in Neural Information Processing Systems (**NeurIPS 2021**)

A Unified Contrastive Energy-based Model for Understanding the Generative Ability of Adversarial Training
- **Yifei Wang**, Yisen Wang, Jiansheng Yang, Zhouchen Lin
- International Conference on Learning Representations (**ICLR 2022**)
- Won the **SILVER BEST PAPER AWARD** at ICML 2021 AML Workshop

Reparameterized Sampling for Generative Adversarial Networks
- **Yifei Wang**, Yisen Wang, Jiansheng Yang, Zhouchen Lin
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD 2021**)
- Won the **BEST MACHINE LEARNING PAPER AWARD (1/685)**

Robust Representation Learning

Improving Out-of-distribution Robustness by Adversarial Training with Structured Priors

- Qixun Wang*, **Yifei Wang***, Hong Zhu, Yisen Wang
- Advances in Neural Information Processing Systems (**NeurIPS 2022**)

When Adversarial Training Meets Vision Transformers: Recipes from Training to Architecture

- Yichuan Mo, Dongxian Wu, **Yifei Wang**, Yiwen Guo, Yisen Wang
- Advances in Neural Information Processing Systems (**NeurIPS 2022**)

Graph Representation Learning

Dissecting the Diffusion Process in Linear Graph Convolutional Networks

- **Yifei Wang**, Yisen Wang, Jiansheng Yang, Zhouchen Lin
- Advances in Neural Information Processing Systems (**NeurIPS 2021**)

Optimization-induced Graph Implicit Nonlinear Diffusion

- Qi Chen, **Yifei Wang**, Yisen Wang, Zhouchen Lin
- International Conference on Machine Learning (**ICML 2022**)

G^2CN: Graph Gaussian Convolution Networks with Concentrated Graph Filters

- Mingjie Li, Xiaojun Guo, **Yifei Wang**, Yisen Wang, Zhouchen Lin
- International Conference on Machine Learning (**ICML 2022**)

INTERNSHIP

Huawei Noah's Arch Lab **09 2021 – 09 2022**
Research Intern *Beijing, China*

- Research on the theory and algorithm design of Self-supervised Learning.

Huawei Noah's Arch Lab **09 2019 – 03 2020**
Research Intern *Beijing, China*

- Research on representation disentanglement of robust and non-robust features.

Baidu's Phoenix Nest **09 2018 – 03 2019**
Research Intern *Beijing, China*

- Research on end-to-end AD selection with Reinforcement Learning.

TECHNICAL SKILLS

Languages: Python, LaTeX, MATLAB, C, R, STATA
Technologies/Frameworks: Linux, Git, PyTorch, JAX, TensorFlow