Yifei Wang

Beijing, China
+86-176-1113-6518 yifei_wang@pku.edu.cn yifeiwang77.github.io

EDUCATION

Peking University, School of Mathematical Sciences **09 2017 – 07 2023 (expected)**
Ph.D. Candidate in Applied Mathematics *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 *Beijing, China*

RESEARCH INTERESTS

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

HONORS

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

PUBLICATIONS (* marks equal contribution)

I. Self-Supervised Learning

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**)

How Mask Matters: Towards Theoretical Understandings of Masked Autoencoders
- Qi Zhang*, **Yifei Wang***, Yisen Wang
- Advances in Neural Information Processing Systems (**NeurIPS 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**)
- A preliminary version 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)** in the Research Track

II. 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**)

III. 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 – 03 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, MATLAB, C, R, STATA
Technologies/Frameworks: PyTorch, JAX, TensorFlow, Linux, Git, LaTeX