

ZHANPENG ZHOU

PH.D. CANDIDATE

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EDUCATION	School of Computer Science, Shanghai Jiao Tong University <i>Ph.D. in Computer Science and Engineering</i> <ul style="list-style-type: none">• Advisor: Prof. Junchi Yan• Research area: Theory of Deep Learning, Science of Large Language Models	Shanghai, China 2022 - 2027 (expected)
	UM-SJTU Joint Institute, Shanghai Jiao Tong University <i>B.E. in Electrical and Computer Engineering</i> <ul style="list-style-type: none">• Minor in Data Science.	Shanghai, China 2018 - 2022
EXPERIENCES	MiniMax. Shanghai, China <ul style="list-style-type: none">• Research Intern, focusing on LLM pre-training.	2025/04 - 2025/10
	RIKEN AIP. Tokyo, Japan <ul style="list-style-type: none">• Student Trainee, advised by Prof. Taiji Suzuki.	2025/04 - 2025/10
	National Institute of Informatics. Tokyo, Japan <ul style="list-style-type: none">• Visiting Ph.D. Student, advised by Prof. Mahito Sugiyama.	2023/09 - 2024/03
	Mila Quebec. Montreal, Canada <ul style="list-style-type: none">• Research Intern, advised by Prof. Jian Tang.	2021/03 - 2021/06
WORKING PAPERS	(* indicates equal contributions; †indicates correspondence.)	
	<ol style="list-style-type: none">1. Zhanpeng Zhou*†, Yuhang Sun*, Bingrui Li, Jinbo Wang, Huaijin Wu, Lei Wu, Junchi Yan. How Does Local Landscape Geometry Evolve in Language Model Pre-Training? In Submission.2. Zhanpeng Zhou†, Yongyi Yang, Mahito Sugiyama, Junchi Yan. New Evidence of the Two-Phase Learning Dynamics of Neural Networks. ICML 2025 Workshop.3. Tongcheng Zhang*, Zhanpeng Zhou*†, Mingze Wang, Andi Han, Wei Huang, Taiji Suzuki, Junchi Yan. On the Learning Dynamics of Two-Layer Networks with Label Noise SGD. ICML 2025 Workshop.4. Tongtian Zhu, Tianyu Zhang, Mingze Wang, Zhanpeng Zhou†, Can Wang. On the Surprising Effectiveness of a Single Global Merging in Decentralized Learning. ICLR 2025 Workshop.5. Xuan Cui, Yunfei Zhao, Bo Liu, Wei Duan, Huiyue Li, Run Zeng, Jinrui Qian, Zhanpeng Zhou. IGU-LoRA: Adaptive Rank Allocation via Integrated Gradients and Uncertainty-Aware Scoring. In Submission.6. Jinbo Wang, Binghui Li, Zhanpeng Zhou, Mingze Wang, Yuxuan Sun, Jiaqi Zhang, Xunliang Cai, Lei Wu. Towards Revealing the Effect of Batch Size Scheduling on Pre-training. In Submission.7. Bingrui Li, Jiaxin Wen, Zhanpeng Zhou, Jun Zhu, Jianfei Chen. Efficient Hyperparameter Tuning via Trajectory Invariance Principle. In Submission.8. Huaijin Wu, Bingrui Li, Yebin Yang, Yi Tu, Zhanpeng Zhou, Jianfei Chen, Junchi Yan. Achieving Low-Bit Muon Through Subspace Preservation and Grid Quantization. In Submission.9. Qibing Ren, Xinhao Song, Ke Fan, Lijun Li, Zhanpeng Zhou, Gongshen Liu, Junchi Yan, Lizhuang Ma, Jing Shao. Unintended Harmful Knowledge Elicitation Issue in Large Reasoning Models and a RL Solution. In Submission.10. Qiu et al. (Co-author). On Path to Multimodal Historical Reasoning: HistBench and HistAgent. In Submission.	

PUBLICATIONS (* indicates equal contributions; †indicates correspondence.)

1. Jinbo Wang*, Mingze Wang*, Zhanpeng Zhou*, Junchi Yan, Weinan E, Lei Wu. **The Sharpness Disparity Principle in Transformers for Accelerating Language Model Pre-Training.** ICML 2025.
2. Andi Han*, Wei Huang*, Zhanpeng Zhou*†, Gang Niu, Wuyang Chen, Junchi Yan, Akiko Takeda, Taiji Suzuki. **On the Role of Label Noise in the Feature Learning Process.** ICML 2025.
3. Zijun Chen*, Zhanpeng Zhou*†, Bo Zhang, Weinan Zhang, Xi Sun, Junchi Yan. **SE-Merging: A Self-Enhanced Approach for Dynamic Model Merging.** IJCNN 2025.
4. Zhanpeng Zhou*†, Mingze Wang*, Yuchen Mao, Bingrui Li, Junchi Yan. **Sharpness-Aware Minimization Efficiently Selects Flatter Minima Late in Training.** ICLR 2025 (Spotlight).
5. Zhanpeng Zhou†, Yongyi Yang, Jie Ren, Mahito Sugiyama, Junchi Yan. **On the Cone Effect in the Learning Dynamics.** ICLR 2025 Workshop.
6. Bingrui Li, Wei Huang, Andi Han, Zhanpeng Zhou, Taiji Suzuki, Jun Zhu, Jianfei Chen. **On the Optimization and Generalization of Two-layer Transformers with Sign Gradient Descent.** ICLR 2025 (Spotlight).
7. Zhanpeng Zhou*, Zijun Chen*, Yilan Chen, Bo Zhang, Junchi Yan. **On the Emergence of Cross-Task Linearity in the Pretraining-Finetuning Paradigm.** ICML 2024.
8. Yiting Chen, Zhanpeng Zhou, Junchi Yan. **Going Beyond Neural Network Feature Similarity: The Network Feature Complexity and Its Interpretation Using Category Theory.** ICLR 2024.
9. Zhanpeng Zhou*, Wen Shen*, Huixin Chen*, Ling Tang, Quanshi Zhang. **Batch Normalization Is Blind to the First and Second Derivatives of the Loss.** AAAI 2024 (Oral).
10. Zhanpeng Zhou, Yongyi Yang, Xiaojiang Yang, Junchi Yan, Wei Hu. **Going Beyond Linear Mode Connectivity: The Layerwise Linear Feature Connectivity.** NeurIPS 2023.
11. Ling Tang*, Wen Shen*, Zhanpeng Zhou, Quanshi Zhang. **Defects of Convolutional Decoder Networks in Frequency Representation.** ICML 2023.
12. Jie Ren, Zhanpeng Zhou, Qirui Chen, Quanshi Zhang. **Can We Faithfully Represent Absence States to Compute Shapley Values on a DNN?** ICLR 2023.
13. Jie Ren*, Die Zhang*, Yisen Wang*, Lu Chen, Zhanpeng Zhou, Yiting Chen, Xu Cheng, Xin Wang, Meng Zhou, Jie Shi, Quanshi Zhang. **A Unified Game-Theoretic Interpretation of Adversarial Robustness.** NeurIPS 2021.

AWARDS
AND
HONORS

- **Top Reviewer Award**, NeurIPS 2025 2025/10
- **National Scholarship (top 0.2%)**, Ministry of Education 2024/11
- **Top Internship Evaluation**, National Institute of Informatics 2024/03
- **Outstanding Graduate Student**, Shanghai Jiao Tong University, 2022/05
- **Yu Liming Scholarship**, Shanghai Jiao Tong University 2021/11
- **John Wu & Jane Sun Scholarship**, Shanghai Jiao Tong University 2020/11
- **Best Technology Award in Summer Expo**, Shanghai Jiao Tong University 2019/08

ACADEMIC
SERVICES

- Area Chair:** CPAL '26
Conference Reviewer: ICML ('22-25), NeurIPS ('22-25), ICLR ('24-26)
Journal Reviewer: T-PAMI, Intelligent Computing (Science Partner)