

Haonan Wang

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EDUCATION

Ph.D. at National University of Singapore

Singapore

Doctor of philosophy in Computer Science

2023 – 2026

- **Advisor:** Kenji Kawaguchi

Ph.D. at University of Illinois at Urbana–Champaign

Urbana-Champaign, IL

Doctor of philosophy in Computer Science

2020 – 2021

- **Advisor:** Jingrui He

B.Sc. at University of Illinois at Urbana–Champaign

Urbana-Champaign, IL

Bachelor of science in Computer Science & Statistics

2017 – 2020

- Overall GPA: 3.86 / 4.00
- **Advisor:** Jiawei Han

AWARDS & HONORS

- ICML 2026 Gold Reviewer May 2026
- Research Achievement Award, National University of Singapore August 2024
- ICML 2024 Oral Paper Award June 2024
- NeurIPS 2023 Spotlight Paper Award December 2023
- NeurIPS 2022 Best Paper Award December 2022
- C.W. Gear Outstanding Undergraduate Student (*Two Students per year*) April 2020

OPEN-SOURCE PROJECT

- **MiroMind AI.** *MiroThinker: Pushing the Performance Boundaries of Open-Source Research Agents via Model, Context, and Interactive Scaling* [[Project Page](#)][[arXiv](#)]
- **Sailor Team.** *Sailor2: Sailing in South-East Asia with Inclusive Multilingual LLMs.* [[Project Page](#)]

PUBLICATION

First author

(* denotes joint-first author)

- **Haonan Wang**, Weida Liang, Zihang Fu, Nie Zheng, Yifan Zhang, Yao Tong, Tongyao Zhu, Hao Jiang, Chuang Li, Jiaying Wu, Kenji Kawaguchi. *From Harm to Help: Turning Reasoning In-Context Demos into Assets for Reasoning LMs.* arXiv preprint arXiv: 2509.23196 (2025).

- **Haonan Wang**, Chao Du, Kenji Kawaguchi, Tianyu Pang. *Think in Parallel, Answer as One: Logit Averaging for Open-Ended Reasoning*. International Conference on Learning Representations (ICLR), 2026.
- Yao Tong*, **Haonan Wang***, Siquan Li, Kenji Kawaguchi, Tianyang Hu. *SeedPrints: Fingerprints Can Even Tell Which Seed Your Large Language Model Was Trained From*. International Conference on Learning Representations (ICLR), 2026.
- **Haonan Wang***, Hongfu Liu*, Xiangyan Liu, Chao Du, Kenji Kawaguchi, Ye Wang, and Tianyu Pang. *Fostering Video Reasoning via Next-Event Prediction*. International Conference on Learning Representations (ICLR), 2026.
- **Haonan Wang**, Brian Chen, Siquan Li, Xinhe Liang, Tianyang Hu, Hwee Kuan Lee, and Kenji Kawaguchi. *Prefix-Tuning+: Modernizing Prefix-Tuning through Attention Independent Prefix Data*. International Conference on Learning Representations (ICLR), 2026.
- **Haonan Wang**, James Zou, Michael Mozer, Linjun Zhang, Anirudh Goyal, Alex Lamb, Zhun Deng, Michael Qizhe Xie, Hannah Brown, and Kenji Kawaguchi: *Can AI Be as Creative as Humans?*. arXiv preprint arXiv:2401.01623 (2024).
- **Haonan Wang**, Qian Liu, etc. *When Precision Meets Position: BFloat16 Breaks Down RoPE in Long-Context Training*. Transactions on Machine Learning Research (TMLR), 02-2025.
- **Haonan Wang***, Minbin Huang*, Runhui Huang, Lanqing Hong, Hang Xu, Tianyang Hu, Xiaodan Liang, Zhenguo Li *Boosting Visual-Language Models by Exploiting Hard Samples*. Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL), 2025.
- **Haonan Wang**, Qianli Shen, Yao Tong, Yang Zhang, Kenji Kawaguchi: *The Stronger the Diffusion Model, the Easier the Backdoor: Data Poisoning to Induce Copyright Breaches Without Adjusting Fine-tuning Pipeline*. International Conference on Machine Learning (ICML), 2024. **Oral Paper (Top 2.37%)**.
- **Haonan Wang***, Ziwei Wu*, Jingrui He: *Training Fair Deep Neural Networks by Balancing Influence*. The 17th ACM International Conference on Web Search and Data Mining (WSDM), 2023.
- **Haonan Wang**, Jieyu Zhang, Qi Zhu, Wei Huang, Kenji Kawaguchi, Xiaokui Xiao: *Can Single-Pass Contrastive Learning Work for Both Homophilic and Heterophilic Graph?*. Transactions on Machine Learning Research (TMLR), 08-2023.
- **Haonan Wang**, Wei Huang, Andrew Margenot, Hanghang Tong, Jingrui He: *Deep Active Learning by Leveraging Training Dynamics*. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2022.
- Jieyu Zhang*, **Haonan Wang***, Cheng-Yu Hsieh, Alexander Ratner: *Understanding Programmatic Weak Supervision via Source-aware Influence Function*. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2022.
- **Haonan Wang**, Chang Zhou, Honxia Yang, Carl Yang, Jingrui He: *Controllable Gradient Item Retrieval*. Proceedings of the International World Wide Web Conference (WWW), 2021.

Others (Selected)

- Xiangxin Zhou, Zichen Liu, Anya Sims, **Haonan Wang**, Tianyu Pang, Chongxuan Li, Liang Wang, Min Lin, and Chao Du. Reinforcing General Reasoning without Verifiers. International Conference on Learning Representations, (ICLR) 2026.
- Xiangxin Zhou, Zichen Liu, **Haonan Wang**, Chao Du, Min Lin, Chongxuan Li, Liang Wang, Tianyu Pang. Variational Reasoning for Language Models. International Conference on Learning Representations, (ICLR) 2026.
- Jianyang Gu, **Haonan Wang**, Ruoxi Jia, Saeed Vahidian, Vyacheslav Kungurtsev, Wei Jiang, Yiran Chen: CONCORD: Concept-Informed Diffusion for Dataset Distillation. (WACV) 2026
- Xiangyan Liu, Jinjie Ni, Zijian Wu, Chao Du, Longxu Dou, **Haonan Wang**, Tianyu Pang, Michael Qizhe Shieh: NoisyRollout: Reinforcing Visual Reasoning with Data Augmentation. (NeurIPS) 2025.
- Tongyao Zhu, Qian Liu, **Haonan Wang**, Shiqi Chen, Xiangming Gu, Tianyu Pang, and Min-Yen Kan. SkyLadder: Better and Faster Pretraining via Context Window Scheduling. (NeurIPS) 2025.
- Wei Huang, Yuan Cao, **Haonan Wang**, Xin Cao, Taiji Suzuki: Graph Neural Networks Provably Benefit from Structural Information: A Feature Learning Perspective. International Conference on Machine Learning (AISTATS), 2025.
- Qianli Shen, Yezhen Wang, Zhouhao Yang, Xiang Li, Haonan Wang, Yang Zhang, Jonathan Scarlett, Zhanxing Zhu, Kenji Kawaguchi. Memory-Efficient Gradient Unrolling for Large-Scale Bi-level Optimization Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2024.
- Yao Zhou, Haonan Wang, Jingrui He, Haixun Wang. Based Explainable Recommendations: A Transparency Perspective. ACM Transactions on Recommender Systems (RecSys), 2024.
- Jianyang Gu, Saeed Vahidian, Vyacheslav Kungurtsev, Haonan Wang, Wei Jiang, Yang You, and Yiran Chen. Efficient Dataset Distillation via Minimax Diffusion. Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- Hailin Zhang, Yujing Wang, Qi Chen, Ruiheng Chang, Ting Zhang, Ziming Miao, Yingyan Hou, Yang Ding, Xupeng Miao, Haonan Wang, Bochen Pang, Yuefeng Zhan, Hao Sun, Weiwei Deng, Qi Zhang, Fan Yang, Xing Xie, Mao Yang, Bin Cui: Model-enhanced Vector Index. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2023.
- Tianyang Hu, Fei Chen, Haonan Wang, Jiawei Li, Wenjia Wang, Jiacheng Sun, Zhenguo Li: Complexity Matters: Rethinking the Latent Space for Generative Modeling. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2023. **Spotlight Paper (Top 3.06%)**.
- Chengkai Hou, Jieyu Zhang, Haonan Wang, Tianyi Zhou: Subclass-balancing Contrastive Learning for Long-tailed Recognition. International Conference on Computer Vision (ICCV), 2023.
- Zhengyu Hu, Jieyu Zhang, Haonan Wang, Siwei Liu, Shangsong Liang: Leveraging Relational Graph Neural Network for Transductive Model Ensemble. SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2023.

- Yujing Wang, Yingyan Hou, Haonan Wang, Ziming Miao, Shibin Wu, Hao Sun, Qi Chen, Yuqing Xia, Chengmin Chi, Guoshuai Zhao, Zheng Liu, Xing Xie, Hao Sun, Weiwei Deng, Qi Zhang, Mao Yang. *A Neural Corpus Indexer for Document Retrieval.* Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2022. 🏆 **Best Paper Award (Top 7/3391) !**
- Qi Zhu, Yidan Xu, Haonan Wang, Chao Zhang, Jiawei Han, Carl Yang: *Transfer Learning of Graph Neural Networks with Ego-graph Information Maximization.* Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2021.
- Carl Yang, Haonan Wang, Lichao Sun and Bo Li: *Secure Network Release with Link Privacy.* Proceedings of the International Joint Conference on Artificial Intelligence (**IJCAI**), 2021.
- Carl Yang, Jieyu Zhang, Haonan Wang, Sha Li, Myunghwan Kim, Matthew Walker, Yiou Xiao and Jiawei Han: *Relation Learning on Social Networks with Multi-Modal Graph Edge Variational Autoencoder.* Proceedings of the ACM International Conference on Web Search and Data Mining (**WSDM**), 2020.
- Carl Yang, Jieyu Zhang, Haonan Wang, Bangzheng Li and Jiawei Han: *Neural Concept Map Generation for Effective Document Classification with Interpretable Structured Summarization.* Proceedings of the ACM International Conference on Research and Development in Information Retrieval (**SIGIR**), 2020.

TEACHING EXPERIENCE

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| • NUS CS5339, Theory and Algorithms for Machine Learning | <i>January 2025 – May 2025</i> |
| • UIUC IS 577, Data Mining | <i>August 2021 – December 2021</i> |
| • UIUC ECE 490, Introduction to Optimization | <i>January 2020 – May 2020</i> |

PROFESSIONAL SERVICE

- Conference Reviewer: ICLR, NeurIPS, ICML, KDD, AISTATS
- Journal Reviewer: TPAMI, TMLR

INDUSTRY EXPERIENCE

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| MiroMind AI Lab
<i>Research Intern Supervisor: <u>Yifan Zhang</u></i> | Singapore, SG
August 2025 – Dec 2025 |
| Sea AI Lab
<i>Research Intern Supervisor: <u>Tianyu Pang, Chao Du</u></i> | Singapore, SG
June 2024 – May 2025 |
| Microsoft Research Lab – Asia
<i>Research Intern Supervisor: <u>Yujing Wang</u></i> | Beijing, CN
February 2022 – May 2022 |
| Alibaba Group
<i>Research Intern Supervisor: <u>Chang Zhou, Hongxia Yang</u></i> | Beijing, CN
June 2020 – September 2020 |