

Hongxin Wei

PERSONAL INFORMATION

Assistant Professor, Southern University of Science and Technology, Shenzhen.

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Date of Birth: December 23, 1995

Nationality: China

Gender: Male

EDUCATION

- **Nanyang Technological University, Singapore** Jan 2020 - May 2023
Ph.D. in Computer Science. Supervised by Prof. Bo An.
- **Huazhong University of Science and Technology, Wuhan, China** Sep 2012 - Jul 2016
B.E. in Software Engineering.

RESEARCH APPOINTMENTS

- **Assistant Professor** (May 2023 - Present): Department of Statistic and Data Science, Southern University of Science and Technology, China.
- **Visiting Scholar/Intern** (Dec 2021 - Nov 2022): Department of Computer Sciences, University of Wisconsin Madison, US. Supervised by Prof. Yixuan Li.
- **Project Officer** (Aug 2018 - May 2023): School of Computer Science and Engineering, Nanyang Technological University, Singapore.
- **Research Intern** (Jun 2019 - Sep 2019): WeBank (Tencent), China.
- **Research Assistant** (Aug 2017 - June 2018): Institute for Interdisciplinary Information Sciences, Tsinghua University, China.

RESEARCH INTERESTS

Robust Deep Learning, AI Safety and Alignment, Data-centric Artificial Intelligence.

Research topics that I am currently working on include:

- Data-efficient foundation models
- Robustness of foundation models
- Protecting data privacy
- Conformal prediction

Published Papers

32. Hongfu Gao, Feipeng Zhang, Wenyu Jiang, Jun Shu, Feng Zheng, Hongxin Wei*. On the Noise Robustness of In-Context Learning for Text Generation. *Proceedings of the 38th Annual Conference on Neural Information Processing Systems (NeurIPS'24)*.
31. Huiping Zhuang, Yizhu Chen, Di Fang, Run He, Kai Tong, Hongxin Wei, Ziqian Zeng, Cen Chen. GACL: Exemplar-Free Generalized Analytic Continual Learning. *Proceedings of the 38th Annual Conference on Neural Information Processing Systems (NeurIPS'24)*.
30. Shuoyuan Wang, Jindong Wang, Guoqing Wang, Bob Zhang, Kaiyang Zhou, Hongxin Wei*. Open-Vocabulary Calibration for Vision-Language Models. *Proceedings of the 41st International Conference on Machine Learning (ICML'24)*.
29. Jianguo Huang, Huajun Xi, Linjun Zhang, Huaxiu Yao, Yue Qiu, Hongxin Wei*. Conformal Prediction for Deep Classifier via Label Ranking. *Proceedings of the 41st International Conference on Machine Learning (ICML'24)*.
28. Zhenlong Liu, Lei Feng, Huiping Zhuang, Xiaofeng Cao, Hongxin Wei*. Mitigating Privacy Risk in Membership Inference by Convex-Concave Loss. *Proceedings of the 41st International Conference on Machine Learning (ICML'24)*.
27. Xiaobo Xia, Jiale Liu, Shaokun Zhang, Qingyun Wu, Hongxin Wei, Tongliang Liu. Towards Minimal Coreset Size under Model Performance Constraints . *Proceedings of the 41st International Conference on Machine Learning (ICML'24)*, (Spotlight).
26. Chuanyang Zheng, Yixuan Wang, Yuqi Cheng, Xuesong Wang, Hongxin Wei, Irwin King, Yu Li. scNovel: a scalable deep learning-based network for novel rare cell discovery in single-cell transcriptomics. *Briefings in Bioinformatics* , (BiB),2024.
25. Senlin Shu, Deng-Bao Wang, Suqin Yuan, Hongxin Wei, Jiuchuan Jiang, Lei Feng, Min-Ling Zhang. Multiple-instance Learning from Triplet Comparison Bags. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2024.
24. Shiyu Tian, Hongxin Wei, Yiqun Wang, Lei Feng. Consistent Multi-Class Classification from Multiple Unlabeled Datasets. *Proceedings of The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024)*. (Oral).
23. Zixi Wei, Senlin Shu, Yuzhou Cao, Hongxin Wei, Bo An, Lei Feng. Consistent Multi-Class Classification from Multiple Unlabeled Datasets. *Proceedings of the 12th International Conference on Learning Representations (ICLR 2024)*. (Spotlight).

22. Hao Chen, Jindong Wang, Ankit Shah, Ran Tao, Hongxin Wei, Xing Xie, Masashi Sugiyama, Bhiksha Raj. Understanding and Mitigating the Label Noise in Pre-training on Downstream Tasks. *Proceedings of the 12th International Conference on Learning Representations (ICLR 2024)*. (Spotlight).
21. Wenyu Jiang, Hao Cheng, MingCai Chen, Chongjun Wang, Hongxin Wei*. DOS: Diverse Outlier Sampling for Out-of-Distribution Detection. *Proceedings of the 12th International Conference on Learning Representations (ICLR 2024)*.
20. Shuoyuan Wang, Jindong Wang, HuaJun Xi, Bob Zhang, Lei Zhang, Hongxin Wei. Optimization-Free Test-Time Adaptation for Cross-Person Activity Recognition. *The ACM international joint conference on Pervasive and Ubiquitous Computing (IMWUT/Ubicomp 2024)*.
19. Renchunzi Xie, Hongxin Wei*, Lei Feng, Yuzhou Cao, Bo An. On the Importance of Feature Separability in Predicting Out-Of-Distribution Error. *Proceedings of the 37th Annual Conference on Neural Information Processing Systems (NeurIPS'23)*.
18. Yuzhou Cao, Hussein Mozannar, Lei Feng, Hongxin Wei, Bo An. In Defense of Softmax Parametrization for Calibrated and Consistent Learning to Defer. *Proceedings of the 37th Annual Conference on Neural Information Processing Systems (NeurIPS'23)*.
17. Xin Cheng, Yuzhou Cao, Haobo Wang, Hongxin Wei, Bo An, Lei Feng. Regression with Cost-based Rejection. *Proceedings of the 37th Annual Conference on Neural Information Processing Systems (NeurIPS'23)*.
16. Hongxin Wei, Huiping Zhuang, Renchunzi Xie, Lei Feng, Gang Niu, Bo An, Yixuan Li. Mitigating Memorization of Noisy Labels by Clipping the Model Prediction. *Proceedings of the 40th International Conference on Machine Learning (ICML'23)*.
15. Eng Aik Chan, Carolina Rendón-Barraza, Benquan Wang, Tanchao Pu, Jun-Yu Ou, Hongxin Wei, Giorgio Adamo, Bo An, Nikolay I. Zheludev. Counting and mapping of subwavelength nanoparticles from a single shot scattering pattern. **Nanophotonics**.
14. Lei Feng, Senlin Shu, Yuzhou Cao, Lue Tao, Hongxin Wei, Tao Xiang, Bo An, Gang Niu. Multiple-Instance Learning from Unlabeled Bags with Pairwise Similarity. *Transactions on Knowledge and Data Engineering (TKDE)*.
13. Senlin Shu, Shuo He, Haobo Wang, Hongxin Wei, Tao Xiang, Lei Feng. A Generalized Unbiased Risk Estimator for Learning with Augmented Classes. *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI'23)*.
12. Lue Tao, Lei Feng, Hongxin Wei, Jinfeng Yi, Shengjun Huang, Songcan Chen. Can Adversarial Training Be Manipulated By Non-Robust Features? *Proceedings of the 36th Annual Conference on*

11. Huiping Zhuang, Zhenyu Weng, **Hongxin Wei**, Renchunzi Xie, Toh Kar-Ann, Zhiping Lin. Analytic Class-Incremental Learning with Absolute Memorization and Privacy Protection. *Proceedings of the 36th Annual Conference on Neural Information Processing Systems (NeurIPS'22)*.
10. **Hongxin Wei**, Renchunzi Xie, Hao Cheng, Lei Feng, Bo An, Yixuan Li. Mitigating Neural Network Overconfidence with Logit Normalization. *Proceedings of the 39th International Conference on Machine Learning (ICML'22)*, pp.23631-23644, 2022.
9. **Hongxin Wei**, Lue Tao, Renchunzi Xie, Lei Feng, Bo An. Open-Sampling: Exploring Out-of-Distribution Data for Re-balancing Long-tailed Datasets. *Proceedings of the 39th International Conference on Machine Learning (ICML'22)*, pp.23615-23630, 2022.
8. **Hongxin Wei**, Renchunzi Xie, Lei Feng, Bo Han, Bo An. Deep Learning from Multiple Noisy Annotators as A Union. *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*.
7. Renchunzi Xie, **Hongxin Wei**^{*}, Lei Feng, Bo An. GearNet: Stepwise Dual Learning for Weakly Supervised Domain Adaptation. *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI'22)*, 2022.
6. **Hongxin Wei**, Lue Tao, Renchunzi Xie, Bo An. Open-set Label Noise Can Improve Robustness Against Inherent Label Noise. *Proceedings of the 35th Annual Conference on Neural Information Processing Systems (NeurIPS'21)*, pp.7978-7992, 2021.
5. Lei Feng, Senlin Shu, Yuzhou Cao, Lue Tao, **Hongxin Wei**, Tao Xiang, Bo An, Gang Niu. Multiple-Instance Learning from Similar and Dissimilar Bags. *Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery and Data (KDD'21)*, pp.374-382, 2021.
4. Ziqi Zhang, Yuexiang Li, **Hongxin Wei**, Kai Ma, Tao Xu, Yefeng Zheng. Alleviating Noisy-label Effects in Image Classification via Probability Transition Matrix. *Proceedings of the 32nd British Machine Vision Conference (BMVC'21)*, 2021.
3. Rundong Wang[†], **Hongxin Wei**[†], Bo An, Zhouyan Feng, Jun Yao. Commission Fee is not Enough: A Hierarchical Reinforced Framework for Portfolio Management. *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI'21)*, pp.626-633, 2021.
2. Lei Feng, **Hongxin Wei**^{*}, Qingyu Guo, Zhuoyi Lin, Bo An. Embedding-Augmented Generalized Matrix Factorization for Recommendation with Implicit Feedback. *IEEE Intelligent Systems (IEEE-IS)*, in press.
1. **Hongxin Wei**, Lei Feng, Xiangyu Chen, Bo An. Combating noisy labels by agreement: A joint training method with co-regularization, *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'20)*, pp.13726-13735, 2020.

ACADEMIC SERVICES

Conference Area Chair:

- Neural Information Processing Systems (NeurIPS): 2024

Conference Program Committee Member (Reviewer):

- Neural Information Processing Systems (NeurIPS): 2021, 2022, 2023
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR): 2022, 2023, 2024
- International Conference on Machine Learning (ICML): 2021, 2022, 2023, 2024
- International Conference on Computer Vision (ICCV): 2023
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): 2021, 2022, 2023, 2024
- International Conference on Learning Representations (ICLR): 2022, 2023, 2024, 2025
- International Joint Conference on Artificial Intelligence (IJCAI): 2023
- SIAM International Conference on Data Mining (SDM): 2022

Conference Service Award:

- NeurIPS 2021 Outstanding Reviewer Award
- NeurIPS 2022 Top Reviewer Award

Journal Reviewer:

- ACM Computing Surveys
- Journal of Machine Learning Research (JMLR)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- Pattern Recognition (PR)
- Applied Soft Computing (ASC)