Hongxin Wei

PERSONAL INFORMATION

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

Homepage: https://hongxin001.github.io/

Google Scholar Profile: https://scholar.google.com/citations?user=cABH034AAAAJ&hl=en

Email: weihx@sustech.edu.cn, hongxin001@e.ntu.edu.sg

Phone: (+65)96429923, (+86)18818550154

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 - Present): 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

PUBLICATIONS (†equal contribution; ⋆corresponding author)

Published Papers

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**), accepted.

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**), accepted.

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**), accepted.

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**), accepted.

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**, accepted.

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**), accepted.

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**), accepted.

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 Neural Information Processing Systems* (**NeurIPS'22**), accepted.

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**), accepted.

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.

Preprints (Under-Review Submissions)

3. Shiyu Tian, **Hongxin Wei**, Yiqun Wang, Lei Feng. CroSel: Cross Selection of Confident Pseudo Labels for Partial-Label Learning.

2. Senlin Shu, Dengbao Wang, Suqin Yuan, **Hongxin Wei**, Jiuchuan Jiang, Lei Feng, Minling Zhang. Multiple-Instance Learning from Triplet Comparison Bags.

1. **Hongxin Wei**, Lei Feng, Rundong Wang, Bo An. Learning to Learn Task-Guided Information for Sample Reweighting.

ACADEMIC SERVICES

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
- International Conference on Machine Learning (ICML): 2021, 2022, 2023
- International Conference on Computer Vision (ICCV): 2023
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): 2021, 2022, 2023
- International Conference on Learning Representations (ICLR): 2022, 2023, 2024
- 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:

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