Feng Liu

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Date of Birth	2 November 1990
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Summary

Research Goal – I am a machine learning researcher with research interests in trustworthy machine learning and hypothesis testing. My long-term goal is to develop trustworthy intelligent systems that can learn reliable knowledge from massive related but different domains automatically. Researching trustworthy machine learning and hypothesis testing is the first step for achieving my long-term goal.

Current Position and Degree – I am currently an ARC DECRA Fellow and an Assistant Professor in Machine Learning at the School of Computing and Information Systems, The University of Melbourne, Australia. I am also a Visiting Scientist at RIKEN-AIP, Japan, and a Visting Fellow at the Australian Artificial Intelligence Institute, University of Technology Sydney (UTS). I was the recipient of the Australian Laureate postdoctoral fellowship. I received my Ph.D. degree in computer science at UTS in 2020.

Professional Activities – I am the organizer of the Workshop on Weakly Supervised Learning (2021 and 2022). I have served as an area chair (AC) for top-tier machine learning conferences ICML, NeurIPS, and ICLR, a senior program committee (SPC) member for AAAI, IJCAI, ECAI, AJCAI. I also serve as an Editor for ACM Transactions on Probabilistic Machine Learning, Associate Editor for the International Journal of Machine Learning and Cybernetics, Action Editor for Neural Networks, and reviewer for many academic journals, such as JMLR, IEEE-TPAMI, and so on. I received the Outstanding Reviewer Award of NeurIPS (2021) and the Outstanding Reviewer Award of ICLR (2021) for outstanding service.

International Collaborations – I am a visiting research scientist with the AI Residency Program at RIKEN Center for Advanced Intelligence Project (RIKEN-AIP), working with Prof. Masashi Sugiyama (Japan) and Dr. Gang Niu (Japan). I visited Gatsby Computational Neuroscience Unit at UCL and worked on the hypothesis testing project with Prof. Arthur Gretton (UK), Dr. Danica J. Sutherland (USA), and Dr. Wenkai Xu (UK). Currently, I actively work with them. I also worked with Prof Kun Zhang (MBZUAI and CMU) on causal discovery project with the tools I developed in the field of statistical hypothesis testing.

Publications and Awards – I have published 78 papers including 34 peer-reviewed journal papers (including 13 ERA Tier A* papers/29 JCR Q1 papers/7 highly-cited papers), 43 peer-reviewed CORE Tier A*/A conference papers (including 34 top-tier machine-learning and artificial-intelligence conference papers: 14 NeurIPS (**three spotlight papers**, **two oral papers**, **one outstanding paper**), 14 ICML (**one spotlight paper**, **one oral paper**), 3 ICLR (**two spotlight**), 1 KDD, 1 AAAI, 1 IJCAI) and 1 peer-reviewed book chapter. These papers have received over 3,500 citations (Source: Google Scholar). My *H-index* is 31 and *i10-index* is 50. I received the **ARC Discovery Early Career Researcher Award (2024)**, the Best Research-in-Progress Paper Runner-up Award of ECIS (2023), the **Outstanding Paper Award of NeurIPS (2022)**, the Outstanding Reviewer Award of NeurIPS (2021), the Outstanding Reviewer Award of ICLR (2021), UTS Best Thesis Award (Dean's list, 2021), and the Best Student Paper Award of FUZZ-IEEE (2019).

Teaching and Supervision – I have experience as lecturers and subject coordinators at The University of Melbourne. I have (co-)supervised twenty-six research students, including twenty-one PhD students, two master students, and one undergraduate students. Until now, they have completed **44** academic papers, where **22** papers have been published in CORE Tier **A*** conferences or CORE&ERA Tier **A*/A** journals.

Grants – As leading chief investigator/chief investigators, I have eight projects, and the total amount of the projects is **5.05 million** Australian Dollars (including **one ARC DP project**, **one ARC DECRA project**, **one NSF-CSIRO project**, **one CSIRO Next Generation project**, and **one DSTG project**).

Education

2016-2020 Doctoral Degree in Computer Science
- Title: *Towards Realistic Transfer Learning Methods: Theory and Algorithms*
Supervisor: Prof. Guangquan Zhang, Dist. Prof. Jie Lu
University: University of Technology Sydney, Australia

2013-2015 Master Degree in Probability Theory and Statistics (by Research)
- Title: *Time Series Interpolation and Prediction for the Electricity Market*
Supervisor: Prof. Jianzhou Wang
University: Lanzhou University, China
- Note: *Graduation in advance due to the research excellence (3 years for normal)*

2009-2013 Bachelor Degree in Pure Mathematics
- Lanzhou University, Lanzhou (China)

Positions

2023.07-now Lecturer in Machine Learning
- School of Computing and Information Systems
- The University of Melbourne, Australia

2021.07-*now* Visiting Scientist
- Imperfect Information Learning Team
- RIKEN Center for Advanced Intelligence Project, Japan

2022.05-2023.07 Lecturer in Statistics (Data Science)
- School of Mathematics and Statistics
- The University of Melbourne, Australia

2020.05-2022.05 Australian Laureate Postdoctoral Fellowship - Working on Autonomous Learning
- Australian Artificial Intelligence Institute
- University of Technology Sydney, Australia
- Working with Australian Laureate Fellow, Distinguished Professor Jie Lu

2019.08-11 Visiting Researcher - Working on Non-parametric Two Sample Test
- Gatsby Computational Neuroscience Unit
- University College London (UCL), United Kingdom
- Working with Prof. Arthur Gretton (UCL, UK) and Dr. Danica J. Sutherland (TTIC, USA)
- Designing a new nonparametric two sample test method via deep kernels.

2019.04-07 Research Intern - Working on Wildly Unsupervised Domain adaptation
- Imperfect Information Learning Team
- RIKEN Center for Advanced Intelligence Project, Japan
- Working with Prof. Masashi Sugiyama, Dr. Gang Niu and Dr. Bo Han
- Developing a novel unsupervised domain adaptation methods when source domain contains noisy labels.

2015-2016 Research Assistant - Working on Time Series Interpolation and Prediction
- Statistical Science Institute, School of Statistics
- Dongbei University of Finance and Economics, China
- Working with Prof. Ping Jiang (Head of School of Statistics)
- Developing computational intelligence methods (i.e., feature selection, neural networks, evolutionary algorithms) to predict time series, i.e.,

wind speed, electricity load and PM2.5/10.
- Designing a new fractal interpolation methods to address missing values in the time series.

2014.05-08 Research Assistant - Working on Long-Term Wind Power Prediction
- State Key Laboratory of Numerical Modeling for Atmospheric Sciences and Geophysical Fluid Dynamics (LASG)
- The Institute of Atmospheric Physics (IAP)
- Chinese Academy of Science (CAS), China
- Working with Senior Scientist Zhenhai Guo (Director of LASG)
- Applying fuzzy logic and evolutionary algorithms to correct wind speed predicted by the Weather Research Forecasting (WRF).

Research Focus

- Trustworthy Machine Learning; Hypothesis Testing; Transfer Learning.

Teaching

I like to share my ideas with students. I am passionate about participating in educational activities.

- Subject Coordinator and lecturer, Statistical Machine Learning, COMP90051, The University of Melbourne (2024), ESS score: 4/5.
- Subject Coordinator and lecturer, Statistical Machine Learning, COMP90051, The University of Melbourne (2023), ESS score: 3.8/5.
- Lecturer, Probability for Statistics, MAST20006, The University of Melbourne (2023), ESS score: 4/5.
- Subject Coordinator and lecturer, Bayesian Statistical Learning, MAST90125, The University of Melbourne (2022), ESS score: 3.8/5.

I have interests and capability to teach subjects regarding machine learning or statistics related subjects.

Advising

- As a **main supervisor** (on-going supervision):
  Mr. Zhi-Jian Zhou (PhD@UniMelb), on the topic: Advanced Statistical Hypothesis Testing;
  Mr. Muxing Li (PhD@UniMelb), on the topic: Privacy-leakage Evaluation for Generative Models;
  Mr. Ruijiang Dong (PhD@UniMelb), on the topic: Foundation-model-based transfer learning;
  Mr. Jinhao Li (PhD@UniMelb), on the topic: Foundation-model-based transfer learning;
  Mr. Jiacheng Zhang (PhD@UniMelb), on the topic: Trustworthy machine learning;
  Miss Chengyi Cai (PhD@UniMelb), on the topic: Foundation-model-based transfer learning;
  Mr. Xunye Tian (PhD@UniMelb), on the topic: Data-adaptive Hypothesis Testing;
  Mr. Yiyi Guo (PhD@UniMelb), on the topic: Machine learning for Meteorology.

- As a **co-supervisor** (on-going supervision):
  Mr. Wenjie Wang (PhD@UniMelb), on the topic: Learning causal representations;
  Mr. Guangzheng Hu (PhD@UniMelb), on the topic: Statistical learning with noisy labels;
  Miss Xinyu Su (PhD@UniMelb), on the topic: Machine learning for transportation;
  Mr. Qizhou Wang (PhD@HKBU), on the topic: Trustworthy machine learning;
  Mr. Haoang Chi (Visiting PhD@HKBU), on the topic: Foundation-model-based transfer learning;
  Miss Xue Jiang (PhD@HKBU), on the topic: Trustworthy machine learning;
  Mr. Shuhai Zhang (Visiting PhD@HKBU), on the topic: Trustworthy machine learning;
  Mr. Xiong Peng (PhD@HKBU), on the topic: Trustworthy machine learning;
  Mr. Guangzhi Ma (PhD@UTS), on the topic: Learning from imprecise observations;
  Mr. Ke Liu (PhD@ZJU), on the topic: Image generation and representation;
  Mr. Hongduan Tian (PhD@HKBU), on the topic: Few-shot learning;
  Miss Yongfeng Zhang (PhD@HKPolyU), on the topic: Foundation-model-based transfer learning.

- As a **co-supervisor** (completed supervision):
  Mr. Ning Ma (PhD@ZJU), on the topic: Domain generalization;
  Mr. Yicheng Wang (PhD@XJTU), on the topic: Novel-class discovery;
  Miss Chenghong Zhou (PhD@HKBU), on the topic: Open-world segmentation;
  Miss Yiyang Zhang (Visiting Master@UTS), on the topic: Towards realistic transfer learning;
  Mr. Li Zhong (Visiting Master@UTS), on the topic: Towards realistic transfer learning;
  Mr. Ruize Gao (Undergraduate RA@HKBU), on the topic: Trustworthy machine learning.

Grants Regarding Responsible AI

- **RESILIENCE: Graph Representation Learning for Fair Teaming in Crisis Response**

  Chief Investigators - Yizhou Sun, Ying Ding, Yi Zhang, **Feng Liu**.
  Duration - 2023.06∼2026.06
  Amount - *approximate* AUD$1,500,000
  Supported by - National Science Foundation (NSF) and CSIRO
  Grant No. - 2303037

- **AI-empowered privacy and ethics risk assessment tool**

  Chief Investigators - George Tian, Yi Zhang, Yiliao Song, **Feng Liu**.
  Duration - 2022.07∼2023.07
  Amount - AUD$15,000
  Supported by - The University of Technology Sydney
  Grant No. - PRO2215246

Grants Regarding Trustworthy Machine Learning

- **Adversarial Reinforcement Learning: Attacks and Defences**

  Chief Investigators - Ben Rubinstein, Andrew Cullen, Chris Leckie, Sarah Erfani,
  Chief Investigators - Tansu Alpcan, **Feng Liu**.
  Duration - 2024.01∼2026.7
  Amount - AUD$1,250,188
  Supported by - Defence Science and Technology Group (DSTG)
  Grant No. - 11447

- **Trustworthy Hypothesis Transfer Learning**

  Chief Investigators - **Feng Liu**.
  Duration - 2024.01∼2026.12
  Amount - AUD$436,847 + AUD$50,000 (Support from Uni)
  Supported by - Australian Research Council (ARC)
  Grant No. - DE240101089

- **Advanced Machine Learning via Bi-level Optimization**

  Chief Investigators - Guangquan Zhang, **Feng Liu**, Hua Zuo.
  Duration - 2023.01∼2025.12
  Amount - AUD$480,000
  Supported by - Australian Research Council (ARC)
  Grant No. - DP230101540

Grants Regarding AI for Science

- **AI for Next Generation Food & Waste Systems**

  Chief Investigators - Andy Song, Benu Adhikari, Samantha Richardson, Huong Ha,
  Chief Investigators - Wei Xiang, **Feng Liu**.
  Duration - 2024.4∼2027.10
  Amount - AUD$1,200,000
  Supported by - CSIRO Next Generation Graduated Program
  Grant No. - TBA

- **Production Optimisation for more Sustainable Wineries and Breweries**

  Chief Investigators - Tingru Cui, Lu Aye, Philip Christopher **Feng Liu**.
  Duration - 2024.1∼2024.12
  Amount - AUD$28,000
  Supported by - The University of Melbourne

- **Research on Key problem of Photovoltaics power**

  Chief Investigator - **Feng Liu**, Weiwei Qi, Hao Kang
  Duration - 2012.03∼2013.01
  Amount - RMB$20,000 (AUD$4,000)
  Supported by - National Undergraduate Innovation Discovery Project
  Grant No. - 201210730105

Professional Service

- **Member** of the Institute of Electrical and Electronics Engineers (IEEE) and IEEE Computational Intelligence Society (CIS)

- **Conferences Organising Committee**
  Program Co-Chairs (**Leading**): Australasian Joint Conference on Artificial Intelligence (AJCAI 2026)
  Local Co-chairs: Australasian Joint Conference on Artificial Intelligence (AJCAI 2024)
  Sponsorship Co-chairs: Australasian Joint Conference on Artificial Intelligence (AJCAI 2023)
  Workshops Co-chairs: International Workshop on Weakly Supervised Learning 2023
  Workshops Co-chairs (**Leading**): ACML 2022 Workshop on Weakly Supervised Learning
  Workshops Co-chairs: ACML 2021 Workshop on Weakly Supervised Learning
  Session Chairs: Representation Learning (Part I) session, two tutorial sessions in ICML 2024
  Session Chairs: Oral Session 2D in ICLR 2024
  Session Chairs: Federated Learning and Transfer Learning in ACML 2021
  Session Chairs: Federated Learning and Transfer Learning in ACML 2021
  Session Chairs: Classification and Regression 2/2 in ECAI 2020
  Session Chairs: Dimensionality Reduction and Manifold Learning in IJCAI 2020

- **Conferences Area Chair/Senior Program Committee**
  Neural Information Processing Systems (**NeurIPS**)
  International Conference on Machine Learning (**ICML**)
  International Conference on Learning Representations (**ICLR**)
  Association for Computing Machinery (ACM) Multimedia (**ACMMM**)
  AAAI Conference on Artificial Intelligence (**AAAI**)
  International Joint Conference on Artificial Intelligence (**IJCAI**)
  European Conference on Artificial Intelligence (**ECAI**)
  Australasian Joint Conference on Artificial Intelligence (**AJCAI**)
  Chinese Conference on Pattern Recognition and Computer Vision (**PRCV**)

- **Conference Program Committee**
  Neural Information Processing Systems (**NeurIPS**)
  International Conference on Machine Learning (**ICML**)
  International Conference on Learning Representations (**ICLR**)
  International Conference on Artificial Intelligence and Statistics (**AISTATS**)
  Conference on Uncertainty in Artificial Intelligence (**UAI**)
  ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**)
  Asian Conference on Machine Learning (**ACML**)
  AAAI Conference on Artificial Intelligence (**AAAI**)
  International Joint Conference on Artificial Intelligence (**IJCAI**)

- **Journal Editor**
  Editor Board Member, Machine Learning Journal
  Action Editor, Neural Networks
  Associate Editor, ACM Transactions on Probabilistic Machine Learning

Associate Editor, International Journal of Machine Learning and Cybernetics
Guest Editor, Frontiers in Big Data
Guest Editor, Frontiers in Artificial Intelligence

- **Journal Reviewer**
  Journal of Machine Learning Research
  Foundations and Trends® in Machine Learning
  Transactions on Machine Learning Research
  Machine Learning Journal
  IEEE Transactions on Pattern Analysis and Machine Intelligence
  IEEE Transactions on Neural Networks and Learning Systems
  IEEE Transactions on Big Data

- **Funding Reviewer**
  Australian Research Council – Discovery Projects
  Australian Research Council – Linkage Projects
  Australian Research Council – Future Fellowship Projects
  Australian Research Council – Discovery Early Career Researcher Award

Publications (* Corresponding author, †Equal contribution)

I have published 78 papers including 34 peer-reviewed journal papers (including 13 ERA Tier A* papers/29 JCR Q1 papers/7 highly-cited papers), 43 peer-reviewed CORE Tier A*/A conference papers (including 34 top-tier machine-learning and artificial-intelligence conference papers: 14 NeurIPS (**three spotlight papers**, **two oral papers**, **one outstanding paper**), 14 ICML (**one spotlight paper**, **one oral paper**), 3 ICLR (**two spotlight papers**), 1 KDD, 1 AAAI, 1 IJCAI) and 1 peer-reviewed book chapter. These papers have received over $3,500$ citations (Source: Google Scholar). My *H-index* is 31 and *i10-index* is 50. I received the Best Research-in-Progress Paper Runner-up Award of ECIS (2023), the Outstanding Paper Award of NeurIPS (2022), and the Best Student Paper Award of FUZZ-IEEE (2019).

Ten Representative works:

1. **Feng Liu**†, Wenkai Xu†, Jie Lu, Danica J. Sutherland.
   Meta Two-Sample Testing: Learning Kernels for Testing with Limited Data.
   In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

2. **Feng Liu**†, Wenkai Xu†, Jie Lu, Guangquan Zhang, Arthur Gretton, Danica J. Sutherland.
   Learning Deep Kernels for Nonparametric Two-Sample Test.
   In *Proceedings of the 37th International Conference on Machine Learning* (**ICML**), 2020.

3. Xue Jiang, **Feng Liu**, Zhen Fang, Hong Chen, Tongliang Liu, Feng Zheng, Bo Han.
   Negative Label Guided OOD Detection with Pretrained Vision-Language Models.
   In *International Conference on Learning Representations* (**ICLR**), 2024.
   [Spotlight]

4. Qizhou Wang†, **Feng Liu**†, Yonggang Zhang, Jing Zhang, Chen Gong, Tongliang Liu, Bo Han.
   Watermarking for Out-of-distribution Detection.
   In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2022.
   [Spotlight]

5. Haoang Chi†, **Feng Liu**†, Bo Han, Wenjing Yang, Long Lan, Tongliang Liu, Gang Niu, Mingyuan Zhou, Masashi Sugiyama.
   Meta Discovery: Learning to Discover Novel Classes given Very Limited Data.
   In *International Conference on Learning Representations* (**ICLR**), 2022.
   [Spotlight]

6. Haoang Chi†, **Feng Liu**†, Wenjing Yang, Long Lan, Tongliang Liu, Bo Han, William Cheung, James T. Kwok,
   TOHAN: A One-step Approach towards Few-shot Hypothesis Adaptation.
   In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.
   [Spotlight]

7. Jiahan Zhang, Qi Wei, **Feng Liu**, Lei Feng.
Candidate Pseudolabel Learning: Enhancing Vision-Language Models by Prompt Tuning with Unlabeled Data.
In *International Conference on Machine Learning* (**ICML**), 2024.
[Oral]

8. Chengyi Cai, Zesheng Ye, Lei Feng, Jianzhong Qi, **Feng Liu**.
Sample-specific Masks for Visual Reprogramming-based Prompting.
In *International Conference on Machine Learning* (**ICML**), 2024.
[Spotlight]

9. Xiaoxu Guo, Fanghe Lin, Juan Song, Sun Di, Li Lin, Zhixing Zhong, Zhaorun Wu, Xiaoyu Wang, Yingkun Zhang, Jin Li, Huimin Zhang, **Feng Liu***, Jia Song, Chaoyong Yang.
Deep transfer learning enables lesion tracing of circulating tumor cells,
Nature Communications, 2022.

10. Zhen Fang, Yixuan Li, Jie Lu, Jiahua Dong, Bo Han, **Feng Liu**.
Is Out-of-distribution Detection Learnable?.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2022.
[Outstanding Paper]

Conference papers:

1. Hongduan Tian, **Feng Liu**, Zhanke Zhou, Tongliang Liu, Chengqi Zhang, Bo Han.
Mind the Gap Between Prototypes and Images in Cross-domain Finetuning.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

2. Chengyi Cai, Zesheng Ye, Lei Feng, Jianzhong Qi, **Feng Liu**.
Bayesian-Guided Label Mapping for Visual Reprogramming.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.
[Oral]

3. Xiong Peng, Bo Han, **Feng Liu**, Tongliang Liu, Mingyuan Zhou.
Pseudo-Private Data Guided Model Inversion Attacks.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

4. Haoang Chi, He Li, Wenjing Yang, **Feng Liu**, Long Lan, Xiaoguang Ren, Tongliang Liu, Bo Han
Unveiling Causal Reasoning in Large Language Models: Reality or Mirage?
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

5. Dongting Hu, Huan Fu, Jiaxian Guo, Liuhua Peng, Tingjin Chu, **Feng Liu**, Tongliang Liu, Mingming Gong
In-N-Out: Lifting 2D Diffusion Prior for 3D Object Removal via Tuning-Free Latents Alignment.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2024.

6. Hongduan Tian, **Feng Liu**, Tongliang Liu, Bo Du, Yiu-ming Cheung, Bo Han.
MOKD: Cross-domain Finetuning for Few-shot Classification via Maximizing Optimized Kernel Dependence.
In *International Conference on Machine Learning* (**ICML**), 2024.

7. Jiacheng Zhang, **Feng Liu**, Dawei Zhou, Jingfeng Zhang, Tongliang Liu
Improving Accuracy-robustness Trade-off via Pixel Reweighted Adversarial Training.
In *International Conference on Machine Learning* (**ICML**), 2024.

8. Chengyi Cai, Zesheng Ye, Lei Feng, Jianzhong Qi, **Feng Liu**.
Sample-specific Masks for Visual Reprogramming-based Prompting.
In *International Conference on Machine Learning* (**ICML**), 2024.
[Spotlight]

9. Jinhao Li, Haopeng Li, Sarah M. Erfani, Lei Feng, James Bailey, **Feng Liu**.
Visual-Text Cross Alignment: Refining the Similarity Score in Vision-Language Models.
In *International Conference on Machine Learning* (**ICML**), 2024.

10. Jiahan Zhang, Qi Wei, **Feng Liu**, Lei Feng.
Candidate Pseudolabel Learning: Enhancing Vision-Language Models by Prompt Tuning with Unlabeled Data.
In *International Conference on Machine Learning* (**ICML**), 2024.
[Oral]

11. Wenjie Wang, Biwei Huang, **Feng Liu**, Xinge You, Tongliang Liu, Kun Zhang, Mingming Gong.
Optimal Kernel Choice for Score Function-based Causal Discovery.
In *International Conference on Machine Learning* (**ICML**), 2024.

12. Xue Jiang, **Feng Liu**, Zhen Fang, Hong Chen, Tongliang Liu, Feng Zheng, Bo Han.
Negative Label Guided OOD Detection with Pretrained Vision-Language Models.
In *International Conference on Learning Representations* (**ICLR**), 2024.
[Spotlight]

13. Xilie Xu, Jingfeng Zhang, **Feng Liu**, Masashi Sugiyama, Mohan Kankanhalli.
Efficient Adversarial Contrastive Learning via Robustness-Aware Coreset Selection.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2023.
[Spotlight]

14. Xilie Xu, Jingfeng Zhang, **Feng Liu**, Masashi Sugiyama, Mohan Kankanhalli.
Enhancing Adversarial Contrastive Learning via Adversarial Invariant Regularization.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2023.

15. Haotian Zheng, Qizhou Wang, Zhen Fang, Xiaobo Xia, **Feng Liu**, Tongliang Liu, Bo Han.
Out-of-distribution Detection Learning with Unreliable Out-of-distribution Sources.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2023.

16. Qizhou Wang, Zhen Fang, Yonggang Zhang, **Feng Liu**, Yixuan Li, Bo Han.
Learning to Augment Distributions for Out-of-distribution Detection.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2023.

17. Tingru Cui, Yixuan Li, Kaiping Chen, James Bailey, **Feng Liu**.
Designing Fair AI Systems: Exploring the Interaction of Explainable AI and Task Objectivity on Users' Fairness Perception.
In *Pacific Asia Conference on Information Systems* (**PACIS**), 2023.

18. Ruijiang Dong[†], **Feng Liu**[†], Haoang Chi, Tongliang Liu, Mingming Gong, Gang Niu, Masashi Sugiyama, Bo Han.
Diversity-enhancing Generative Network for Few-shot Hypothesis Adaptation.
In *International Conference on Machine Learning* (**ICML**), 2023.

19. Shuhai Zhang[†], **Feng Liu**[†], Jiahao Yang, Yifan Yang, Changsheng Li, Bo Han, Mingkui Tan.
Detecting Adversarial Data by Probing Multiple Perturbations Using Expected Perturbation Score.
In *International Conference on Machine Learning* (**ICML**), 2023.

20. Xue Jiang, **Feng Liu**, Zhen Fang, Hong Chen, Tongliang Liu, Feng Zheng, Bo Han.
Detecting Out-of-distribution Data through In-distribution Class Prior.
In *International Conference on Machine Learning* (**ICML**), 2023.

21. Yiliao Song, Tingru Cui, **Feng Liu**.
Designing Fair AI Systems: How Explanation Specificity Influences Users' Perceived Fairness and Trusting Intentions.
In *European Conference on Information Systems* (**ECIS**), 2023.
[Best RiP Paper Runner-up Award]

22. Qizhou Wang, Junjie Ye, **Feng Liu**, Quanyu Dai, Marcus Kalander, Tongliang Liu, Jianye HAO, Bo Han.
Out-of-distribution Detection with Implicit Outlier Transformation.
In *International Conference on Learning Representations* (**ICLR**), 2023.

23. Zhen Fang, Yixuan Li, Jie Lu, Jiahua Dong, Bo Han, **Feng Liu**.
Is Out-of-distribution Detection Learnable?.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2022.
[Outstanding Paper]

24. Qizhou Wang†, **Feng Liu**†, Yonggang Zhang, Jing Zhang, Chen Gong, Tongliang Liu, Bo Han.
Watermarking for Out-of-distribution Detection.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2022.
[Spotlight]

25. Xiong Peng†, **Feng Liu**†, Jingfeng Zhang, Long Lan, Junjie Ye, Tongliang Liu, Bo Han.
Bilateral Dependency Optimization: Defending Against Model-inversion Attacks.
In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (**KDD**), 2022.

26. Ruize Gao, Jiongxiao Wang, Kaiwen Zhou, **Feng Liu**, Binghui Xie, Gang Niu, Bo Han, James Cheng.
Fast and Reliable Evaluation of Adversarial Robustness with Minimum-Margin Attack.
In *International Conference on Machine Learning* (**ICML**), 2022.

27. Xilie Xu, Jingfeng Zhang, **Feng Liu**, Masashi Sugiyama, Mohan Kankanhalli.
Adversarial Attacks and Defense for Non-Parametric Two-Sample Tests.
In *International Conference on Machine Learning* (**ICML**), 2022.

(before joining in UniMelb):

28. Haoang Chi†, **Feng Liu**†, Bo Han, Wenjing Yang, Long Lan, Tongliang Liu, Gang Niu, Mingyuan Zhou, Masashi Sugiyama.
Meta Discovery: Learning to Discover Novel Classes given Very Limited Data.
In *International Conference on Learning Representations* (**ICLR**), 2022.
[Spotlight]

29. **Feng Liu**†, Wenkai Xu†, Jie Lu, Danica J. Sutherland.
Meta Two-Sample Testing: Learning Kernels for Testing with Limited Data.
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

30. Haoang Chi†, **Feng Liu**†, Wenjing Yang, Long Lan, Tongliang Liu, Bo Han, William Cheung, James T. Kwok,
TOHAN: A One-step Approach towards Few-shot Hypothesis Adaptation,
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.
[Spotlight]

31. Qizhou Wang†, **Feng Liu**†, Bo Han, Tongliang Liu, Chen Gong, Mingyuan Zhou, Masashi Sugiyama,
Probabilistic Margins for Instance Reweighting in Adversarial Training,
In *Advances in Neural Information Processing Systems* (**NeurIPS**), 2021.

32. Ruize Gao†, **Feng Liu**†, Jingfeng Zhang†, Bo Han, Tongliang Liu, Gang Niu, Masashi Sugiyama,
Maximum Mean Discrepancy is Aware of Adversarial Attacks,
In *Proceedings of the 38th International Conference on Machine Learning* (**ICML**), online, 2021.

33. Zhen Fang†, Jie Lu, Anjin Liu†, **Feng Liu**, Guangquan Zhang,
Learning Bounds for Open-Set Learning,
In *Proceedings of the 38th International Conference on Machine Learning* (**ICML**), 2021.

34. Guangzhi Ma, **Feng Liu**, Guangquan Zhang, Jie Lu,
Learning from Imprecise Observations: An Estimation Error Bound based on Fuzzy Random Variables,
In *Proceedings of the 2021 IEEE International Conference on Fuzzy Systems* (**FUZZ-IEEE**), 2021.

35. Li Zhong†, Zhen Fang†, **Feng Liu**†, Bo Yuan, Guangquan Zhang, Jie Lu,
How does the Combined Risk Affect the Performance of Unsupervised Domain Adaptation Approaches?,
In *the 35th AAAI Conference on Artificial Intelligence* (**AAAI**), 2021.

36. **Feng Liu**†, Wenkai Xu†, Jie Lu, Guangquan Zhang, Arthur Gretton, Danica J. Sutherland.
Learning Deep Kernels for Nonparametric Two-Sample Test.
In *Proceedings of the 37th International Conference on Machine Learning* (**ICML**), 2020.

37. Yiyang Zhang†, **Feng Liu**†, Zhen Fang†, Bo Yuan, Guangquan Zhang, Jie Lu,
Clarinet: A One-step Approach Towards Budget-friendly Unsupervised Domain Adaptation,
In *Proceedings of the 29th International Joint Conference on Artificial Intelligence* (**IJCAI**), 2021.

38. **Feng Liu**, Guangquan Zhang, Jie Lu,
A Novel Non-parametric Two-Sample Test on Imprecise Observations,
In *Proceedings of the 2020 IEEE International Conference on Fuzzy Systems* (**FUZZ-IEEE**), 2020.

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Honors and Awards

- **2024** – **(Top 2%)** Top 2% of the world's most cited scientists in 2023
- **2023** – FEIT Excellence Award in Early Career Research in University of Melbourne
- **2023** – **(Top 2%)** Top 2% of the world's most cited scientists in 2022
- **2023** – **(200 per year across all disciplines in Australia)** ARC Discovery Early Career Researcher Award
- **2023** – **(Top** 5**%)** Best Reseach-in-progress Paper Award of ECIS: 2nd Runner Up
- **2022** – **(Top** 0.1**%) NeurIPS** Outstanding Paper
- **2021** – **(Top** 8**%)** Outstanding Reviewer Award of **NeurIPS** 2021
- **2021** – **(Top** 10**%)** Outstanding Reviewer Award of ICLR 2021
- **2021** – **(12 in each faculty)** UTS Best Thesis Award (Dean's list)
- **2020** – **(Top** 10**%)** AAII Day Best Student Paper Award (2020)
- **2019** – **(Top 5)** UTS-FEIT HDR Research Excellence Award (2019)
- **2019** – **(Top 1)** Best student paper award from IEEE International Conference on Fuzzy Systems (*one paper per year over 500 more accepted papers*).
- **2014** – **(Top 5%)** Miyoshi Post-Graduate Award
- **2011** – **(Top 5%)** First-class Award scholarship of Research and Innovation of Lanzhou University.
- **2011** – **(Top 5%)** Meritorious Winner in the International Mathematical Contest in Modelling.