

ZHINING LIU

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EDUCATION

- **University of Illinois at Urbana-Champaign** Urbana, IL
Ph.D. in Computer Science Aug. 2022 - Present
Advisor: Prof. [Hanghang Tong](#)
- **Jilin University** Changchun, China
M.Eng. in Computer Science Aug. 2019 - July 2022
Advisor: Prof. [Yi Chang](#)
- **Jilin University** Changchun, China
B.Sc. in Computer Science Aug. 2015 - July 2019
Tang Ao-Qing Honor Program

EXPERIENCE

- **University of Illinois at Urbana-Champaign** Urbana, IL
Research Assistant @*IDEA Lab* Aug. 2022 - Present
 - Conducted research on graph data mining and fair machine learning.
 - Advisor: Prof. [Hanghang Tong](#)
- **Amazon.com, Inc.**
Applied Scientist Intern @*Search Experience Science* Palo Alto, CA, 2024/05 - 2024/08
 - We propose to improve the factuality of LLMs in context-based question answering via automatic contextual highlighting (in submission to ACL ARR).
 - Mentors: Dr. [Rana Ali Amjad](#)
Applied Scientist Intern @*Search Experience Science* Seattle, WA, 2023/05 - 2023/08
 - Multi-task learning for partial ordered entity ranking in shopping funnel.
 - Mentors: Dr. [Minmin Shen](#), Dr. [Vassilis N. Ioannidis](#), Dr. [Changhe Yuan](#)
- **Microsoft Research Asia** Beijing, China
Research Intern @*Machine Learning Group* 08/2018 - 2019/06
 - Large-scale highly-imbalanced classification for damage risk prediction in intelligent logistics.
 - Proposed solution adopted by industry-leading company, and published on ICDE and NeurIPS.
 - Mentors: Dr. [Wei Cao](#), Dr. [Jiang Bian](#)

PUBLICATIONS

- Xiao Lin, **Zhining Liu**, Dongqi Fu, Ruizhong Qiu, Hanghang Tong. *BackTime: Backdoor Attacks on Multivariate Time Series Forecasting*. In Proceedings of the 38th Advances in Neural Information Processing Systems (**NeurIPS**), 2024. (**Spotlight Paper**) [[Paper](#)]
- **Zhining Liu**, Ruizhong Qiu, Zhichen Zeng, Yada Zhu, Hendrik Hamann, Hanghang Tong. *AIM: Attributing, Interpreting, Mitigating Data-encoded Unfairness*. In 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2024. [[Paper](#)] [[Code](#)]
- **Zhining Liu**, Zhichen Zeng, Ruizhong Qiu, Hyunsik Yoo, David Zhou, Zhe Xu, Yada Zhu, Kommy Weldemariam, Jingrui He, and Hanghang Tong. *Class-Imbalanced Graph Learning without Class Re-balancing*. In 41st International Conference on Machine Learning (**ICML**), 2024. [[Paper](#)] [[Code](#)]

- Zhichen Zeng, Ruizhong Qiu, Zhe Xu, **Zhining Liu**, Yuchen Yan, Tianxin Wei, Lei Ying, Jingrui He, Hanghang Tong. *Graph Mixup on Approximate Gromov–Wasserstein Geodesics*. In 41st International Conference on Machine Learning (**ICML**), 2024. [Paper]
- **Zhining Liu***, Eunice Chan*, Ruizhong Qiu, Yuheng Zhang, Ross Maciejewski, Hanghang Tong. *Group Fairness via Group Consensus*. In ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), 2024. [Paper]
- Hyunsik Yoo, Zhichen Zeng, Jian Kang, Ruizhong Qiu, David Zhou, **Zhining Liu**, Fei Wang, Charlie Xu, Eunice Chan, Hanghang Tong. *Ensuring User-side Fairness in Dynamic Recommender Systems*. In 2024 ACM Web Conference (**WWW**), 2024. [Paper]
- Zhichen Zeng, Boxin Du, Si Zhang, Yinglong Xia, **Zhining Liu**, Hanghang Tong. *Hierarchical Multi-Marginal Optimal Transport for Network Alignment*. In 38th AAAI Conference on Artificial Intelligence (**AAAI**), 2024. [Paper]
- **Zhining Liu***, Hangting Ye*, Wei Cao, Amir Mohammad Amiri, Jiang Bian, Yi Chang, Jon D. Lurie, Jim Weinstein, Tie-Yan Liu. *Web-based Long-term Spine Treatment Outcome Forecasting*. In 29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2023. [Paper]
- **Zhining Liu***, Hangting Ye*, Xinyi Shen, Wei Cao, Shun Zheng, Xiaofan Gui, Huishuai Zhang, Yi Chang, Jiang Bian. *UADB: Unsupervised Anomaly Detection Booster*. In IEEE 39th International Conference on Data Engineering (**ICDE**), 2023. [Paper] [Code]
- Warmlesley, Dana, Alex Waagen, Jiejun Xu, **Zhining Liu**, and Hanghang Tong. *A Survey of Explainable Graph Neural Networks for Cyber Malware Analysis*. In Proceedings of the 2022 IEEE International Conference on Big Data (**Big Data**), pp. 2932-2939. IEEE, 2022. [Paper]
- Guo, Kai, Xiaofeng Cao, **Zhining Liu**, and Yi Chang. *Taming Over-Smoothing Representation on Heterophilic Graphs*. Information Sciences (2023): 119463. [Paper]
- **Zhining Liu**, Pengfei Wei, Jing Jiang, Wei Cao, Jiang Bian, and Yi Chang. *MESA: Boost Ensemble Imbalanced Learning with Meta-sampler*. In Proceedings of the 33rd Advances in Neural Information Processing Systems (**NeurIPS**), 2020. [Paper] [Code]
- **Zhining Liu**, Wei Cao, Zhifeng Gao, Jiang Bian, Hechang Chen, Yi Chang, and Tie-Yan Liu. *Self-paced ensemble for highly imbalanced massive data classification*. In Proceedings of the IEEE 36th International Conference on Data Engineering (**ICDE**), 2020. [Paper] [Code]

Under Review

- **Zhining Liu**, Rana Ali Amjad, Ravinarayana Adkathimar, Tianxin Wei, Hanghang Tong. *SelfElicit: Your Language Model Secretly Knows Where is the Relevant Evidence*. In submission to **ACL ARR**.
- Wenxuan Bao, Zhichen Zeng, **Zhining Liu**, Hanghang Tong, Jingrui He. *AdaRC: Test-Time Adaptation for Structure Shifts on Graphs*. In submission to **ICLR'25**.
- Lingjie Chen, Ruizhong Qiu, Siyu Yuan, **Zhining Liu**, Tianxin Wei, Hyunsik Yoo, Zhichen Zeng, Deqing Yang, Hanghang Tong. *WAPITI: A Watermark for Finetuned Open-Source LLMs*. In submission to **ICLR'25**.
- Dongqi Fu, Yada Zhu, **Zhining Liu**, Lecheng Zheng, Xiao Lin, Liri Fang, Katherine Tieu, Onkar Bhardwaj, Kommy Weldemariam, Hanghang Tong, Hendrik Hamann, Jingrui He. *EarthBench: A Multi-Modal Climate Data Benchmark with a Simple Generative Method*. In submission.

Preprint

- **Zhining Liu**, Jian Kang, Hanghang Tong, and Yi Chang. *IMBENS: ensemble class-imbalanced learning in python*. arXiv:2111.12776. [[Paper](#)] [[Github Repository](#)] [[Documentation](#)]
- **Zhining Liu**, Pengfei Wei, Zhepei Wei, Boyang Yu, Yuan Tian, Jing Jiang, Wei Cao, Jiang Bian, Yi Chang. *Handling Inter-class and Intra-class Imbalance in Class-imbalanced Learning*. arXiv:2111.12791.

(*indicates equal contribution)

OPEN-SOURCE PROJECTS

(2,000+ stars in total on Github by November 2024)

- **[300+ stars] IMBENS: Class-imbalanced Ensemble Learning in Python** 2022
 - **3K+ downloads/month** Python toolbox for class-imbalanced ensemble learning
 - Links: [[Github](#)] [[Documentation](#)] [[Gallery](#)] [[PyPI](#)]
- **(1,400+ stars) Awesome Imbalanced Learning** 2022
 - Curated list of imbalanced learning papers, codes, and libraries.
 - Links: [[English](#)] [[Chinese](#)]
- **(500+ stars) Awesome Machine Learning Resources** 2020
 - Curated list of awesome resources across various machine learning topics.
 - Links: [[English](#)] [[Chinese](#)]

SELECTED AWARDS & HONORS

- **Top 10 Honorary Graduates (Highest Honor)**, Jilin University 2022
- **National Scholarship (Top 0.2%)**, Ministry of Education of China 2019,2020
- Academic Performance Scholarship, Jilin University 2019,2020,2021
- Undergraduate Research Scholarship, Jilin University 2018
- National Endeavor Scholarship, Ministry of Education of China 2017
- Student Service Award, Jilin University 2016,2017,2018,2019

PROFESSIONAL SERVICES

- **Conference Program Committee/Reviewer**
 - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD) 2024
 - The 2nd Workshop on Trustworthy Learning on Graphs (TrustLOG) 2024
 - The 1st Workshop on Trustworthy Learning on Graphs (TrustLOG) 2022
 - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022
- **Journal Reviewer**
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2024
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2024
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2023
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2022
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2021
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2020
 - IEEE Transactions on Cybernetics 2020
 - Elsevier Neurocomputing (Neurocomputing) 2020
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2019
 - Elsevier Neurocomputing (Neurocomputing) 2019
- **External Reviewer**
 - ACM International Conference on Information and Knowledge Management (CIKM) 2022
 - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD) 2020

– IEEE International Conference on Data Mining (ICDM) 2019

- **Conference Volunteer**

– ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR) 2020

MENTORING EXPERIENCE

- Mr. Hangting Ye (was B.Sc. & Ph.D. student at Jilin University, China) 2021 - 2022

- Research on Intelligent Healthcare and Anomaly Detection.

- Led to publications in IEEE ICDE and ACM SIGKDD.

MISCELLANEOUS

- I blog on ZhiHu (a Chinese platform like Quora) and have **4K+ followers** and **1M+ reads**.

[CV compiled on Tuesday 12th November, 2024]