ZHINING LIU

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EDUCATION

- **University of Illinois at Urbana-Champaign**   Urbana, IL
  Ph.D. in Computer Science   Aug. 2022 - Present
  Advisor: Dr. Hanghang Tong

- **Jilin University**   Changchun, China
  M.Eng. in Computer Science   Aug. 2019 - July 2022
  Advisor: Dr. 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   Aug. 2022 - Present
  – Conducted research on learning from imbalanced and biased graph data.
  – Advisor: Dr. Hanghang Tong

- **Amazon.com, Inc.**   Seattle, WA
  Applied Scientist Intern   May 2023 - Aug. 2023
  – Conducted research on multi-task learning for partial ordered entity ranking in shopping funnel.
  – Mentors: Dr. Minmin Shen, Dr. Changhe Yuan

- **Microsoft Research Asia**   Beijing, China
  Research Intern   Aug. 2018 - June 2019
  – Conducted research on large-scale highly-imbalanced classification in intelligent logistics.
  – Mentors: Dr. Wei Cao, Dr. Jiang Bian

PUBLICATIONS

Under Review

- **Zhining Liu**, Zhichen Zeng, Hyunsik Yoo, David Zhou, Zhe Xu, Yada Zhu, Komminis Weldemariam, Jingrui He, Hanghang Tong. *Topological Augmentation for Imbalanced Graph Learning.* In submission.

Conference 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.

- **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]

- Warmsley, 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]

- **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), pp. 841-852. IEEE, 2020. [Paper] [Code]

Preprint

- **Zhining Liu**, Jian Kang, Hanghang Tong, and Yi Chang. *IMBENS: ensemble class-imbalanced learning in python.* arXiv:2111.12776. [Paper] [Code]

- **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

- **IMBENS: class-imbalanced ensemble learning in Python** (1k+ downloads/m)   2022
  - Python package for class-imbalanced /long-tailed ensemble learning.
  - Links: [Github] [Documentation] [Gallery] [PyPI]
- **Awesome Imbalanced Learning** (1k+ stars)   2022
  - Curated list of imbalanced learning papers, codes, and libraries.
  - Links: [English] [Chinese]
- **Awesome Machine Learning Resources** (400+ stars)   2020
  - Curated list of awesome resources across various machine learning topics.
  - Links: [English] [Chinese]

(2,000+ stars in total on Github by July 2023)

AWARDS AND 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

- **Journal Reviewer**
  - 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

- **Program Committee/Reviewer**
  - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)   2022
  - The 1st Workshop on Trustworthy Learning on Graphs (TrustLOG)   2022

- **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 2023 and ACM SIGKDD 2023.

MISCELLANEOUS

- I blog on <u>ZhiHu</u> (a Chinese platform like Quora) and have 3k+ followers and 1m+ reads.

[CV compiled on Monday 31st July, 2023]