

# ZHINING LIU

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## EDUCATION

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- **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

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

## PUBLICATIONS

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### Conference Paper

- Hangting Ye\*, **Zhining Liu\***, Xinyi Shen, Wei Cao, Shun Zheng, Xiaofan Gui, Huishuai Zhang, Yi Chang, Jiang Bian. *UADB: Unsupervised Anomaly Detection Booster*. To appear in IEEE 39th International Conference on Data Engineering (ICDE), 2023. [[Paper](#)] [[Code](#)]
- Warmusley, 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](#)]

### Under Review

- (First Author) Anonymous authors. *Anonymous Submission on Graph Imbalanced Learning*. In submission to the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2023.

- (Co-first Author) Anonymous authors. *Anonymous Submission on Intelligent Healthcare*. In submission to the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2023.
- **Zhining Liu**, Jian Kang, Hanghang Tong, and Yi Chang. *IMBENS: ensemble class-imbalanced learning in python*. In submission to the Journal of Machine Learning Research (Machine Learning Open Source Software Track). [[Paper](#)] [[Code](#)]

## Preprint

- **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

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- **IMBENS: class-imbalanced ensemble learning in Python** (35k+ downloads) 2022
    - Python package for class-imbalanced /long-tailed ensemble learning.
    - Links: [[Github](#)] [[Documentation](#)] [[Gallery](#)] [[PyPI](#)]
  - **Awesome Machine Learning Resources** (1k+ stars) 2022
    - Curated list of imbalanced learning papers, codes, and libraries.
    - Links: [[English](#)] [[Chinese](#)]
  - **Awesome Imbalanced Learning** (400+ stars) 2020
    - Curated list of awesome resources across various machine learning topics.
    - Links: [[English](#)] [[Chinese](#)]

(1,900+ stars in total on Github by April 2023)

## AWARDS AND HONORS

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- Top 10 Honorary Graduates (Highest Honor), Jilin University 2022
  - National Scholarship, 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

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- **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
  - **Journal Reviewer**
    - 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

- **Conference Volunteer**

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

## MENTORING EXPERIENCE

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- Mr. Hangting Ye (B.Sc. student in Computer Science at Jilin University, China)
  - Research on Intelligent Healthcare and Anomaly Detection.
  - Led to a publication at top database/data mining conference IEEE ICDE 2023.

## MISCELLANEOUS

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- I blog on ZhiHu (a Chinese platform like Quora) and have 3k+ followers and 900k+ reads.

*[CV compiled on Monday 3<sup>rd</sup> April, 2023]*