Yue Zhao

| Contact | ☑ yzhao010@usc.edu | 213-821-2369 | | |
|----------------------------|---|---|--|--|
| Information | github.com/yzhao062 | CS Department, SAL 104 | | |
| | in linkedin.com/in/yzhao062 | Los Angeles, CA | | |
| | ↑ viterbi-web.usc.edu/~yzhao010/ | United States, 90089 | | |
| | M USC Faculty Directory | Department of Computer Science | | |
| | G Google Scholar | University of Southern California | | |
| Research Summary | My research aims to build trustworthy , robust , and scalable AI that advances science and benefits society. I focus on <i>rigorous algorithmic foundations</i> , <i>open-source system development</i> , and <i>high-impact applications</i> across human-centric and scientific domains. | | | |
| | 1. Robust & Trustworthy AI: Detecting the Unexpected I design core algorithms to detect anomalies, out-of-distribution (OOD) data, and outliers across diverse modalities (including graph-structured data). These methods fortify AI systems against rare or unseen scenarios, enhancing reliability, security, and interpretability. | | | |
| | □ Anomaly Detection | ☐ Graph Anomaly Detection | | |
| | □ OOD Detection | □ Robust AI | | |
| | ☐ Trustworthy AI | ☐ Graph OOD Detection | | |
| | 2. AI for Science & Society: Foundation Models in Action By pairing robust detection with large language models (LLMs) and generative AI, I tackle interdisciplinary challenges: from scientific discovery to political forecasting and computational social science. This approach bridges algorithmic research with real-world decision-making and public policy. | | | |
| | □ AI for Science □ Generative AI □ LLMs | □ Political Forecasting □ Computational Social Science □ Scientific Discovery | | |
| | 3. Scalable, Automated & Open-source ML Systems To ensure broad adoption, I build reproducible and efficient tools—most notably PyOD (27M+downloads) for anomaly detection, along with PyGOD, ADBench, and other libraries with 20K+GitHub stars (top 800 worldwide). My work emphasizes automated model selection, distributed inference, and user-friendly design, democratizing advanced ML for both academia and industry. | | | |
| | □ ML Systems □ Automated ML | □ Distributed Computing□ Reproducible & Efficient Tools | | |
| | □ Open-source AI | ☐ Democratizing ML | | |
| FULL-TIME | University of Southern California | | | |
| Professional Experience | Thomas Lord Department of Computer Science Assistant Professor (Tenure-Track) • Foundations Of Robust Trustworthy Intelligent System | Aug. 2023 - Present as (FORTIS) Lab: Link | | |
| | • USC Machine Learning Center (MaSCle): Link | | | |
| | PwC Canada | | | |
| | Consulting $\mathscr E$ Deals | | | |
| | Senior Consultant (Data Scientist) | Aug. 2017 - Jun. 2019 | | |
| | Consultant (Data Scientist) | Feb. 2017 - Jul. 2017 | | |
| EDUCATION | Carnegie Mellon University Ph.D. in Information Systems and Management | Pittsburgh, PA Sep. 2019 - May. 2023 | | |
| | 1 10.2. the Injurious of Dystelles who multiplicate | 50p. 2019 - May. 2029 | | |

- Affiliation: CMU automated learning systems group (Catalyst) and Data Analytics Techniques Algorithms (DATA) Lab
- Advisors and Mentors: CMU: Prof. Leman Akoglu, Prof. Zhihao Jia, and Prof. George Chen. I collaborate with Prof. Jure Leskovec at Stanford, and Prof. Philip S. Yu at UIC.

University of Toronto

Toronto, ON

Master of Science in Computer Science

Sep. 2015 - Dec. 2016

University of Cincinnati

Cincinnati, OH

Bachelor of Science in Computer Engineering

Sep. 2010 - May. 2015

Minor: Computer Science and Mathematics

Awards, Grants, and

Funding

As Principal Investigator (August 2023 onwards)

| Capital One Research Awards | Grant | Oct. 2024 |
|---|-------------|-----------|
| Amazon Research Awards | Gift | Aug. 2024 |
| Best Paper Award @ KDD Resource-Efficient Learning Workshop | Recognition | Aug. 2024 |
| NSF ATD | Funding | Aug. 2024 |
| NSF POSE | Funding | Jun. 2024 |
| Google Cloud Research Innovators | Recognition | Mar. 2024 |
| AAAI New Faculty Highlights | Recognition | Feb. 2024 |

Note: Monetary values represent my portion of the funding. Total project budgets may be larger.

Prior to Principal Investigator Role (Before August 2023)

| Meta 2022 AI4AI Research Award (student co-PI) | Recognition | Oct. 2022 |
|--|-------------|-------------|
| The Norton Labs Graduate Fellowship | Fellowship | Mar. 2022 |
| CMU Presidential Fellowship | Fellowship | 2019 |
| Mitacs-Accelerate Research and Development Funding | Funding | 2016-2017 |
| University Global Award and Scholarship | Scholarship | 2010-2015 |
| Mantei/Mae Award & Scholar | Award | 2012 - 2015 |
| Engineer of the Month | Recognition | Jun. 2014 |

Note: Monetary values are omitted for awards and recognitions received prior to PI role.

PUBLICATIONS **G** SCHOLAR

Preprints & Under Submission



Note: *first authors and †corresponding authors if more than one.

74. Li Li, Peilin Cai, Ryan A. Rossi, Franck Dernoncourt, Branislav Kveton, Junda Wu, Tong Yu, Lixin Song, Tiankai Yang, Yuehan Qin, Nesreen K. Ahmed, Samyadeep Basu, Subhojyoti Mukherjee, Ruiyi Zhang, Yuxiao Zhou, Zichao Wang, Yue Huang, Yu Wang, Xiangliang Zhang, Philip S. Yu, Xiyang Hu, Yue Zhao

A Personalized Conversational Benchmark: Towards Simulating Personalized Conversations

Under submission

arXiv preprint arXiv:2505.14106

73. Zixiang Xu, Yanbo Wang, Yue Huang, Jiayi Ye, Haomin Zhuang, Zirui Song, Lang Gao, Chenxi Wang, Zhaorun Chen, Yujun Zhou, Sixian Li, Wang Pan, <u>Yue Zhao</u>, Jieyu Zhao, Xiangliang Zhang, Xiuying Chen

SocialMaze: A Benchmark for Evaluating Social Reasoning in Large Language Models

Under submission

arXiv preprint arXiv:2505.23713

72. Tiankai Yang, Junjun Liu, Wingchun Siu, Jiahang Wang, Zhuangzhuang Qian, Chanjuan Song, Cheng Cheng, Xiyang Hu, <u>Yue Zhao</u>

AD-AGENT: A Multi-agent Framework for End-to-end Anomaly Detection

Under submission

arXiv preprint arXiv:2505.12594

71. Haoyan Xu, Zhengtao Yao, Xuzhi Zhang, Ziyi Wang, Langzhou He, Yushun Dong, Philip S. Yu, Mengyuan Li, Yue Zhao

GLIP-OOD: Zero-Shot Graph OOD Detection with Foundation Model

Under submission

arXiv preprint arXiv:2504.21186

70. Haoyan Xu, Zhengtao Yao, Ziyi Wang, Zhan Cheng, Xiyang Hu, Mengyuan Li, <u>Yue Zhao</u> Graph Synthetic Out-of-Distribution Exposure with Large Language Models **Under submission**

arXiv preprint arXiv:2504.21198

69. Weidi Luo, Qiming Zhang, Tianyu Lu, Xiaogeng Liu, <u>Yue Zhao</u>, Zhen Xiang, Chaowei Xiao Doxing via the Lens: Revealing Privacy Leakage in Image Geolocation for Agentic Multi-Modal Large Reasoning Model

Under submission

arXiv preprint arXiv:2504.19373

68. Yuehan Qin, Shawn Li, Yi Nian, Xinyan Velocity Yu, <u>Yue Zhao</u>[†], Xuezhe Ma[†] Don't Let It Hallucinate: Premise Verification via Retrieval-Augmented Logical Reasoning **Under submission** arXiv preprint arXiv:2504.06438

67. Yiming Tang, Yi Fan, Chenxiao Yu, Tiankai Yang, <u>Yue Zhao</u>, Xiang Hu StealthRank: LLM Ranking Manipulation via Stealthy Prompt Optimization Under submission arXiv preprint arXiv:2504.05804

66. Yi Nian*, Shenzhe Zhu*, Yuehan Qin, Shawn Li, Ziyi Wang, Chaowei Xiao, <u>Yue Zhao</u> JailDAM: Jailbreak Detection with Adaptive Memory for Vision-Language Model **Under submission**

arXiv preprint arXiv:2504.03770

65. Chengxuan Qian, Shuo Xing, Shawn Li, <u>Yue Zhao</u>, Zhengzhong Tu
DecAlign: Hierarchical Cross-Modal Alignment for Decoupled Multimodal Representation Learning
Under submission
arXiv preprint arXiv:2503.11892

64. Shawn Li, Jiashu Qu, Yuxiao Zhou, Yuehan Qin, Tiankai Yang, <u>Yue Zhao</u> Treble Counterfactual VLMs: A Causal Approach to Hallucination **Under submission**

arXiv preprint arXiv:2503.06169

63. Xiongxiao Xu, Haoran Wang, Yueqing Liang, Philip S. Yu, <u>Yue Zhao</u>, Kai Shu Can Multimodal LLMs Perform Time Series Anomaly Detection? **Under submission**

arXiv preprint arXiv:2502.17812

62. Kaixiang Zhao, Lincan Li, Kaize Ding, Neil Zhenqiang Gong, <u>Yue Zhao</u>, Yushun Dong A Survey of Model Extraction Attacks and Defenses in Distributed Computing Environments Under submission arXiv preprint arXiv:2502.16065

61. Yue Huang, Chujie Gao, Siyuan Wu, Haoran Wang, Xiangqi Wang, Yujun Zhou, Yanbo Wang, Jiayi Ye, Jiawen Shi, Qihui Zhang, Yuan Li, Han Bao, Zhaoyi Liu, Tianrui Guan, Dongping Chen, Ruoxi Chen, other authors, <u>Yue Zhao</u>, other authors, Xiangliang Zhang

On the Trustworthiness of Generative Foundation Models: Guideline, Assessment, and Perspective Under submission

arXiv preprint arXiv:2502.14296

https://trustgen.github.io/

60. Shixuan Li, Wei Yang, Peiyu Zhang, Xiongye Xiao, Defu Cao, Yuehan Qin, Xiaole Zhang, <u>Yue Zhao</u>, Paul Bogdan

ClimateLLM: Efficient Weather Forecasting via Frequency-Aware Large Language Models Under submission

arXiv preprint arXiv:2502.11059

59. Lincan Li, Jiaqi Li, Catherine Chen[†], Fred Gui[†], other collaborators, <u>Yue Zhao</u>[†], Yushun Dong[†] Political-LLM: Large Language Models in Political Science

Under submission arXiv preprint arXiv:2412.06864

58. Chenxiao Yu, Jinyi Ye, Yuangang Li, Zhaotian Weng, Zheng Li, Emilio Ferrara, Xiyang Hu[†], <u>Yue Zhao</u>[†] A Large-Scale Simulation on Large Language Models for Decision-Making in Political Science **Under submission**

arXiv preprint arXiv:2412.15291

57. Yuangang Li, Jiaqi Li, Zhuo Xiao, Tiankai Yang, Yi Nian, Xiyang Hu, <u>Yue Zhao</u> NLP-ADBench: NLP Anomaly Detection Benchmark **Under submission**

arXiv preprint arXiv:2412.04784

56. Junda Wu, Hanjia Lyu, Yu Xia, Zhehao Zhang, Joe Barrow, Ishita Kumar, Mehnoosh Mirtahebi, Hongjie Chen, Ryan A. Rossi, Franck Dernoncourt, Tong Yu, Ruiyi Zhang, Jiuxiang Gu, Nesreen K. Ahmed, Yu Wang, Xiang Chen, Hanieh Deilamsalehy, Namyong Park, Sungchul Kim, Huanrui Yang, Subrata Mitra, Zhengmian Hu, Nedim Lipka, <u>Yue Zhao</u>, Jiebo Luo, Julian McAuley Personalized Multimodal Large Language Models: A Survey

Under submission

arXiv preprint arXiv:2412.02142

55. Zhendong Liu, Yi Nian, Henry Peng Zou, Shawn Li, Xiyang Hu, <u>Yue Zhao</u> COOD: Concept-based Zero-shot OOD Detection

Under submission

arXiv preprint arXiv:2411.13578

54. Han Bao, Yue Huang, Yanbo Wang, Jiayi Ye, Xiangqi Wang, Xiuying Chen, <u>Yue Zhao</u>, Tianyi Zhou, Mohamed Elhoseiny, Xiangliang Zhang

AutoBench-V: Can Large Vision-Language Models Benchmark Themselves?

Under submission

arXiv preprint arXiv:2410.21259

Peer-reviewed Journal Papers

53. Haoyan Xu, Kay Liu, Zhengtao Yao, Philip S. Yu, Kaize Ding[†], <u>Yue Zhao</u>[†] LEGO-Learn: Label-Efficient Graph Open-Set Learning *Transactions on Machine Learning Research (TMLR)*, 2025

52. Hao Dong, Gaetan Frusque, <u>Yue Zhao</u>, Eleni Chatzi, Olga Fink NNG-Mix: Improving Semi-supervised Anomaly Detection with Pseudo-anomaly Generation IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2024

51. Ling Yang*, Zhilong Zhang*, Yang Song, Shenda Hong, Runsheng Xu, <u>Yue Zhao</u>, Wentao Zhang, Bin Cui, Ming-Hsuan Yang

Diffusion Models: A Comprehensive Survey of Methods and Applications ACM Computing Surveys (CSUR), 2023 (*equal contribution)

50. Yue Zhao*, Martin Q. Ma*, Xiaorong Zhang, Leman Akoglu

The Need for Unsupervised Outlier Model Selection: A Review and Evaluation of Internal Evaluation Strategies

 $ACM\ SIGKDD\ Explorations\ Newsletter\ (\textbf{SIGKDD}\ Explor.),\ 2023\ (\text{*equal contribution})$

49. Kexin Huang*, Tianfan Fu*, Wenhao Gao*, <u>Yue Zhao</u>, Yusuf Roohani, Jure Leskovec, Connor W. Coley, Cao Xiao, Jimeng Sun, Marinka Zitnik

Artificial Intelligence Foundation for Therapeutic Science

Nature Chemical Biology (NCHEMB), 2022 (*equal contribution)

48. <u>Yue Zhao*</u>, Zheng Li*, Xiyang Hu, Nicola Botta, Cezar Ionescu, George H. Chen ECOD: Unsupervised Outlier Detection Using Empirical Cumulative Distribution Functions *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2022. (*equal contribution)

 Yue Zhao, Zain Nasrullah, Zheng Li PyOD: A Python Toolbox for Scalable Outlier Detection Journal of Machine Learning Research (JMLR), 2019.

Conference & Workshop Papers

- 46. Shawn Li, Peilin Cai, Yuxiao Zhou, Zhiyu Ni, Renjie Liang, You Qin, Yi Nian, Zhengzhong Tu, Xiyang Hu, Yue Zhao Secure On-Device Video OOD Detection Without Backpropagation International Conference on Computer Vision (ICCV), 2025.
- 45. Zerui Xu, Fang Wu, <u>Yue Zhao</u> Retrieval-Reasoning Large Language Model-based Synthetic Clinical Trial Generation ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD Workshop on AI Agent for Information Retrieval), 2025.
- 44. Haoyan Xu*, Zhengtao Yao*, Yushun Dong, Ziyi Wang, Ryan A. Rossi, Mengyuan Li, <u>Yue Zhao</u> Few-Shot Graph Out-of-Distribution Detection with LLMs European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD), 2025.
- 43. Tiankai Yang*, Yi Nian*, Shawn Li, Ruiyao Xu, Yuangang Li, Jiaqi Li, Xiyang Hu, Ryan Rossi, Kaize Ding, Xia Hu, <u>Yue Zhao</u>
 AD-LLM: Benchmarking Large Language Models for Anomaly Detection
 Findings of the Association for Computational Linquistics (ACL Findings), 2025.
- 42. Yu Xia, Subhojyoti Mukherjee, Zhouhang Xie, Junda Wu, Xintong Li, Ryan Aponte, Hanjia Lyu, Joe Barrow, Hongjie Chen, Franck Dernoncourt, Branislav Kveton, Tong Yu, Ruiyi Zhang, Jiuxiang Gu, Nesreen K. Ahmed, Yu Wang, Xiang Chen, Hanieh Deilamsalehy, Sungchul Kim, Zhengmian Hu, Yue Zhao, Nedim Lipka, Seunghyun Yoon, Ting-Hao Kenneth Huang, Zichao Wang, Puneet Mathur, Soumyabrata Pal, Koyel Mukherjee, Zhehao Zhang, Namyong Park, Thien Huu Nguyen, Jiebo Luo, Ryan A. Rossi, Julian McAuley
 From Selection to Generation: A Survey of LLM-based Active Learning
 Annual Meeting of the Association for Computational Linguistics (ACL), 2025.
- 41. Kaixiang Zhao, Lincan Li, Kaize Ding, Neil Zhenqiang Gong, <u>Yue Zhao</u>, Yushun Dong A Survey on Model Extraction Attacks and Defenses for Large Language Models *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD Lecture-Style Tutorial Track)*, 2025.
- 40. Shawn Li, Huixian Gong, Hao Dong, Tiankai Yang, Zhengzhong Tu, <u>Yue Zhao</u> DPU: Dynamic Prototype Updating for Multimodal Out-of-Distribution Detection Conference on Computer Vision and Pattern Recognition (CVPR), Highlight, 2025
- 39. Hanhui Wang, Yihua Zhang, Ruizheng Bai, Yue Zhao, Sijia Liu, Zhengzhong Tu Edit Away and My Face Will Not Stay: Personal Biometric Defense against Malicious Generative Editing Conference on Computer Vision and Pattern Recognition (CVPR), 2025
- 38. Yanbo Wang, Jiayi Ye, Siyuan Wu, Chujie Gao, Yue Huang, Xiuying Chen, <u>Yue Zhao</u>, Xiangliang Zhang TRUSTEVAL: A Dynamic Evaluation Toolkit on Trustworthiness of Generative Foundation Models Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL Demo Track), 2025.
- 36. Sihan Chen, Zhuangzhuang Qian, Wingchun Siu, Xingcan Hu, Jiaqi Li, Shawn Li, Yuehan Qin, Tiankai Yang, Zhuo Xiao, Wanghao Ye, Yichi Zhang, Yushun Dong, Yue Zhao PyOD 2: A Python Library for Outlier Detection with LLM-powered Model Selection International World Wide Web Conference (The Web Conference Demo Track), 2025

35. Sizhe Liu, Yizhou Lu, Siyu Chen, Xiyang Hu, Tianfan Fu, Yue Zhao DrugAgent: Automating AI-aided Drug Discovery Programming through LLM Multi-Agent Collaboration

AAAI Workshop on Foundation Models for Biological Discoveries (FMs4Bio), 2025.

34. Hao Dong, <u>Yue Zhao</u>, Eleni Chatzi, Olga Fink MultiOOD: Scaling Out-of-Distribution Detection for Multiple Modalities Advances in Neural Information Processing Systems (NeurIPS), **Q** Spotlight, 2024

33. Xueying Ding, <u>Yue Zhao</u>, Leman Akoglu
Fast Unsupervised Deep Outlier Model Selection with Hypernetworks

ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2024

32. Lichao Sun, Yue Huang, Haoran Wang, Siyuan Wu, Qihui Zhang, Chujie Gao, Yixin Huang, Wenhan Lyu, Yixuan Zhang, Xiner Li, Zhengliang Liu, Yixin Liu, Yijue Wang, Zhikun Zhang, 50+ collaborative authors, Yue Zhao

TrustLLM: Trustworthiness in Large Language Models International Conference on Machine Learning (ICML), 2024

Songtao Liu, Hanjun Dai, <u>Yue Zhao</u>, Peng Liu
 Preference Optimization for Molecule Synthesis with Conditional Residual Energy-based Models
 International Conference on Machine Learning (ICML), Oral, 2024

30. <u>Yue Zhao</u>, Leman Akoglu
Hyperparameter Optimization for Unsupervised Outlier Detection
International Conference on Automated Machine Learning (AutoML), 2024

29. Yue Zhao Towards Reproducible, Automated, and Scalable Anomaly Detection AAAI Conference on Artificial Intelligence (AAAI), New Faculty Highlights, 2024

28. Minqi Jiang*, Chaochuan Hou*, Ao Zheng*, Songqiao Han, Hailiang Huang[†], Qingsong Wen, Xiyang Hu[†], Yue Zhao[†]
ADGym: Design Choices for Deep Anomaly Detection.

Advances in Neural Information Processing Systems (NeurIPS), 2023

(†Corresponding author)

27. Jaemin Yoo, <u>Yue Zhao</u>, Lingxiao Zhao, Leman Akoglu
DSV: An Alignment Validation Loss for Self-supervised Outlier Model Selection
European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in
Databases (ECML/PKDD), 2023

- 26. Peng Xu, Lin Zhang, Xuanzhou Liu, Jiaqi Sun, <u>Yue Zhao</u>, Haiqin Yang, Bei Yu Do Not Train It: A Linear Neural Architecture Search of Graph Neural Networks *International Conference on Machine Learning (ICML)*, 2023
- Yue Zhao, Guoqing Zheng, Subhabrata Mukherjee, Robert McCann, Ahmed Awadallah ADMoE: Anomaly Detection with Mixture-of-Experts from Noisy Labels Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI), 2023
- 24. <u>Yue Zhao</u>, George H. Chen, Zhihao Jia TOD: GPU-accelerated Outlier Detection via Tensor Operations International Conference on Very Large Data Bases (VLDB), 2023
- 23. Songqiao Han*, Xiyang Hu*, Hailiang Huang*, Minqi Jiang*, <u>Yue Zhao*</u>
 ADBench: Anomaly Detection Benchmark
 Advances in Neural Information Processing Systems (NeurIPS), 2022
 (*equal contribution & the corresponding author)
- 22. <u>Yue Zhao*</u>, Kay Liu*, Yingtong Dou*, et al. Benchmarking Node Outlier Detection on Graphs Advances in Neural Information Processing Systems (NeurIPS), 2022 (*equal contribution)
- 21. <u>Yue Zhao</u>, Xiaorong Zhang, Leman Akoglu ELECT: Toward Unsupervised Outlier Model Selection *IEEE International Conference on Data Mining (ICDM)*, 2022.
- 20. Zhiming Xu, Xiao Huang, <u>Yue Zhao</u>, Yushun Dong, Jundong Li Contrastive Attributed Network Anomaly Detection with Data Augmentation Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2022.

- Yue Zhao, Ryan A. Rossi, Leman Akoglu
 Automatic Unsupervised Outlier Model Selection
 Advances in Neural Information Processing Systems (NeurIPS), 2021.
- 18. Kwei-Herng Lai, Daochen Zha, Junjie Xu, <u>Yue Zhao</u>, Guanchu Wang, Xia Hu Revisiting Time Series Outlier Detection: Definitions and Benchmarks *Advances in Neural Information Processing Systems* (*NeurIPS*), 2021
- 17. Kexin Huang*, Tianfan Fu*, Wenhao Gao*, <u>Yue Zhao</u>, Yusuf Roohani, Jure Leskovec, Connor W. Coley, Cao Xiao, Jimeng Sun, Marinka Zitnik

Therapeutics Data Commons: Machine Learning Datasets and Tasks for Drug Discovery and Development

Advances in Neural Information Processing Systems (NeurIPS), 2021 (*equal contribution)

- 16. Yue Zhao*, Xiyang Hu*, Cheng Cheng, Cong Wang, Changlin Wan, Wen Wang, Jianing Yang, Haoping Bai, Zheng Li, Cao Xiao, Yunlong Wang, Zhi Qiao, Jimeng Sun, Leman Akoglu SUOD: Accelerating Large-scale Unsupervised Heterogeneous Outlier Detection Conference on Machine and Learning Systems (MLSys), 2021. (*equal contribution)
- 15. Kwei-Herng Lai*, Daochen Zha*, Guanchu Wang, Junjie Xu, Yue Zhao, Devesh Kumar, Yile Chen, Purav Zumkhawaka, Minyang Wan, Diego Martinez and Xia Ben Hu TODS: An Automated Time Series Outlier Detection System (Demo paper) Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI), 2021. (*equal contribution)
- 14. Meng-Chieh Lee, <u>Yue Zhao</u>, Aluna Wang, Pierre Jinghong Liang, Leman Akoglu, Vincent S. Tseng, Christos Faloutsos AutoAudit: Mining Accounting and Time-Evolving Graphs IEEE International Conference on Big Data (Big Data), 2020
- 13. Changlin Wan, Dongya Jia, <u>Yue Zhao</u>, Wennan Chang, Sha Cao, Xiao Wang, and Chi Zhang A Data Denoising Approach to Optimize Functional Clustering of Single Cell RNA-sequencing Data *IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, 2020
- 12. <u>Yue Zhao</u>, Xueying Ding, Jianing Yang, Haoping Bai. SUOD: Toward Scalable Unsupervised Outlier Detection *Workshops at the Thirty-Fourth AAAI Conference on Artificial Intelligence*, 2020. Extended version published in *MLSys 2021*.
- 11. Zheng Li, <u>Yue Zhao</u>, Nicola Botta, Cezar Ionescu, Xiyang Hu COPOD: Copula-Based Outlier Detection *IEEE International Conference on Data Mining (ICDM)*, 2020.
- Zheng Li, <u>Yue Zhao</u>, Jialin Fu SYNC: A Copula based Framework for Generating Synthetic Data from Aggregated Sources IEEE International Conference on Data Mining Workshops (ICDMW), 2020.
- Yiqun Mei, <u>Yue Zhao</u>, Wei Liang DSR: An Accurate Single Image Super Resolution Approach for Various Degradations IEEE International Conference on Multimedia and Expo (ICME), 2020, London, UK.
- 8. <u>Yue Zhao</u>, Xuejian Wang*, Cheng Cheng*, Xueying Ding*
 Combining Machine Learning Models and Scores using combo Library (Demo paper)

 Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI), 2020.

 (*equal contribution)
- Colin Wan, Zheng Li, Alicia Guo, <u>Yue Zhao</u>
 SynC: A Unified Framework for Generating Synthetic Population with Gaussian Copula Workshops at the Thirty-Fourth AAAI Conference on Artificial Intelligence, 2020.
 Extended version published in ICDMW 2020.
- Zain Nasrullah, <u>Yue Zhao</u>
 Music Artist Classification with Convolutional Recurrent Neural Networks
 IEEE International Joint Conference on Neural Networks (IJCNN), 2019, Hungary.
- Yue Zhao, Zain Nasrullah, Maciej K. Hryniewicki, Zheng Li LSCP: Locally Selective Combination in Parallel Outlier Ensembles SIAM International Conference on Data Mining (SDM), 2019, Calgary, Canada.

4. Yue Zhao, Maciej K. Hryniewicki

DCSO: Dynamic Combination of Detector Scores for Outlier Ensembles

ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD Workshop
on Outlier Detection De-constructed), 2018, London, UK.

Extended version published in SDM 2019, renamed to LSCP.

3. Yue Zhao, Maciej K. Hryniewicki

XGBOD: Improving Supervised Outlier Detection with Unsupervised Representation Learning IEEE International Joint Conference on Neural Networks (IJCNN), 2018, Rio, Brazil.

2. <u>Yue Zhao</u>, Maciej K. Hryniewicki, Francesca Cheng, Boyang Fu, Xiaoyu Zhu Employee Turnover Prediction with Machine Learning: A Reliable Approach *Intelligent System Conference* (*Intellisys*), 2018, London, UK.

Yue Zhao*, Zhongtian Qiu*, Yiqing Yang*, Weiwei Li*, Mingming Fan
 An Empirical Study of Touch-based Authentication Methods on Smartwatches
 ACM International Symposium on Wearable Computers (ISWC), 2017, Maui, USA. (*equal contribution)

INTERNSHIP EXPERIENCE

NortonLifeLock Research Group

Machine Learning Research Intern

2022

Microsoft Research

Machine Learning Research Intern

2022

Stanford University, Computer Science Department

Visiting Student Researcher (Prof. Jure Leskovec)

2021

IQVIA, Analytics Center of Excellence

Machine Learning Research Intern

2020

Siemens PLM Software USA

Software Engineer (Intern & Contract)

Mar. 2012 - Dec. 2014

TEACHING EXPERIENCE

$University\ of\ Southern\ California$

Instructor

Los Angeles, CA

Spring 2025

CSCI 566 Deep Learning and Its Applications

Instructor

Spring 2024

CSCI 566 Deep Learning and Its Applications

Carnegie Mellon University

Teaching Assistant

Pittsburgh, PA Fall 2022

Managing Digital Business (Prof. David Riel)

Teaching Assistant & co-Instructor (lectures on AutoML and MLSys)

Spring 2022 – Fall 2020

Intro to Artificial Intelligence (Prof. David Steier)

Teaching Assistant

Spring 2022

Digital Transformation (Prof. David Riel)

 ${\bf Teaching\ Assistant\ (helping\ on\ course\ topics)}$

Fall 2021

Statistics for IT Managers (Prof. Daniel Nagin)

University of Toronto

Toronto, ON Fall 2015

Teaching Assistant & Lab Session Instructor Embedded Systems (Prof. Philip Anderson)

University of Cincinnati

Cincinnati, OH

Teaching Assistant & Lab Session Instructor

Intro to Programming (Prof. George Purdy)

Fall 2014

Ph.D. Students

- Haoyan Xu (USC, ECE Ph.D., 2024 Spring-), co-advised by Mengyuan Li
- Yuehan Qin (USC, CS Ph.D., 2024 Fall-)
- Tiankai Yang (USC, CS Ph.D., 2024 Fall-)
- Shawn Li (USC, CS Ph.D., 2024 Fall-)

Services Conference Organizing Committee

• Workflow Co-Chair for KDD 2023

External Reviewer for Funding Proposals

• Dutch Research Council (NWO)

Journal Editor

- Associate Editor, ACM Transactions on AI for Science (TAIS), 2025–present
- Associate Editor, IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2024-present
- Action Editor, Journal of Data-centric Machine Learning Research (DMLR), 2024-present

Program Committee (PC) or Area Chair (AC) for Conferences and Workshops

- ICLR 2025 (AC)
- AAAI 2021, 2022, 2023, 2025 (Senior PC)
- ICML 2024, 2025 (AC)
- NeurIPS 2021, 2022, 2023, 2025 (AC)
- \bullet AISTATS 2024, 2025 (AC)
- MLSys 2024
- KDD 2020, 2021, 2022, 2023
- IJCAI 2022, 2023
- AAAI Demonstrations 2021, 2022
- MICCAI 2020, 2021, 2022
- ICDM 2020
- KDD Workshop on Outlier Detection and Description (ODD), 2021
- KDD Workshop on Anomaly and Novelty Detection (ANDEA), 2021, 2022
- IJCAI Workshop on Artificial Intelligence for Anomalies and Novelties (AI4AN), 2020, 2021
- INFORMS Workshop on Data Science 2021

Journal Reviewer

- Journal of Machine Learning Research (JMLR)
- PNAS Nexus
- Machine Learning
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Internet of Things Journal (IoT-J)
- IEEE Intelligent Systems
- IEEE Journal on Selected Areas in Communications (J-SAC)
- Data Mining and Knowledge Discovery (DMAI)
- ACM Transactions on Management Information Systems (TMIS)
- Knowledge and Information Systems (KAIS)
- INFORMS Journal on Computing (IJOC)
- Big Data
- Artificial Intelligence Review (AIRE)

- Neurocomputing
- IEEE Transactions on Systems, Man, and Cybernetics: Systems
- IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
- IEEE Network Magazine
- IEEE Computational Intelligence Magazine (CIM)
- BioData Mining
- European Journal of Management and Business Economics (EJMBE)
- The Journal of Open Source Software (JOSS)

| Talks and Lectures | USC symposium on Frontiers of ML/AI | Towards Robust Al: Advances in Outlier and OOD Detection | Mar. 2025 |
|-----------------------|---|--|-----------|
| | NUS Tea Talk | Towards Robust Al: Advances in Outlier and OOD Detection | Jan. 2025 |
| | SFU@NeurIPS'24 | Towards Robust Al: Advances in Outlier and OOD Detection | Dec. 2024 |
| | KAIST | Unsupervised Model Selection: Automation with Meta-learning and LLMs | Nov. 2024 |
| | Kennesaw State University | $\label{lem:unsupervised} Unsupervised\ Model\ Selection:\ Automation\ with\ Meta-learning \\ and\ LLMs$ | Oct. 2024 |
| | LinkedIn Anti-Abuse AI | Outlier Detection: Automation, Systems, and GenAI | Aug. 2024 |
| | Amazon Security AI | Outlier Detection: Automation, Systems, and GenAI | Aug. 2024 |
| | New York University | Outlier Detection: Automation, Systems, and GenAI | Aug. 2024 |
| | University of Washington | Outlier Detection: Automation, Systems, and GenAI | Jun. 2024 |
| | Microsoft | Outlier Detection: Automation, Systems, and GenAI | Jun. 2024 |
| | USC Retreat on AI and Engineering Safety | Safety Measures for LLMs | Apr. 2024 |
| | Visa Research | Towards Reproducible, Automated, and Scalable AD | Apr. 2024 |
| | USC Symposium on Frontiers of Generative AI | Generative AI for Anomaly Detection | Mar. 2024 |
| | AAAI New Faculty High- lights (invited) | Towards Reproducible, Automated, and Scalable AD | Feb. 2024 |
| | U of Nevada, Las Vegas | Automated and Scalable ML Algorithms and Systems | Oct. 2023 |
| | Samsung Seminar | Automated and Scalable Anomaly Detection Systems | Aug. 2023 |
| | KDD SoCal Day | Enable Applications by ML with Noisy Inputs | Aug. 2023 |
| | CMU Catalyst | How (Not) to Fail Your Academic Job Search | May. 2023 |
| | KAUST | Automated and Scalable ML Algorithms and Systems | Apr. 2023 |
| | Emory University | Automated and Scalable ML Algorithms and Systems | Apr. 2023 |
| | USC | Automated and Scalable ML Algorithms and Systems | Mar. 2023 |
| | UC Davis | Automated and Scalable ML Algorithms and Systems | Mar. 2023 |
| | Stony Brook University | Automated and Scalable ML Algorithms and Systems | Feb. 2023 |
| | University of Chicago | Automated and Scalable ML Algorithms and Systems | Feb. 2023 |
| | UC Merced | Automated and Scalable ML Algorithms and Systems | Feb. 2023 |
| | CMU PDL Meeting | Automated and Scalable ML Algorithms and Systems | Jan. 2023 |
| | CMU Data Science Seminar | Guest Lecture Automated Anomaly Detection | Nov. 2022 |
| | LoG Seminar | Large-scale Graph Anomaly Detection | Oct. 2022 |
| | Intuit | Anomaly Detection for Financial Risk Modeling | Aug. 2022 |
| | Rice University | Large-scale Anomaly Detection with Automation | Sep. 2022 |
| | Microsoft Research | Weakly-supervised Anomaly Detection | Sep. 2022 |
| | Wells Fargo | Anomaly Detection for Financial Risk Modeling | Aug. 2022 |
| | Columbia University | Guest Lecture Anomaly Detection | Jul. 2022 |
| | Morgan Stanley | Automated Outlier Detection | Jun. 2022 |
| | Microsoft Research | Automated Outlier Detection | Jun. 2022 |
| | Morgan Stanley | Large-scale Anomaly Detection Systems | Mar. 2022 |
| | Rutgers Business School | Outlier Model Selection | Mar. 2022 |
| | Tesla | Large-scale Anomaly Detection Systems | Feb. 2022 |
| | Catalyst, CMU | Systems for Data Mining Algorithms | Dec. 2021 |
| | E&Y Canada | ML applications in Data Analytics | Oct. 2021 |
| | University of Nottingham | General Machine Learning Applications | Jan. 2021 |