Yue Zhao

CONTACT INFORMATION

yzhao010@usc.edu
github.com/yzhao062
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viterbi-web.usc.edu/~yzhao010/
USC Faculty Directory
Google Scholar

213-821-2369
CS Department, SAL 104
Los Angeles, CA
United States, 90089
Department of Computer Science
University of Southern California

RESEARCH SUMMARY

My research seeks to build robust, trustworthy, and scalable AI systems, naturally connecting foundational methods to impactful real-world applications through four complementary areas:

1. Robust AI Foundations: Anomaly and OOD Detection

I develop foundational algorithms for robust anomaly detection, outlier mining, and out-of-distribution (OOD) identification, ensuring AI reliability even under unexpected or adversarial scenarios.

- ❑ Anomaly Detection
- ❑ Outlier Detection
- ❑ OOD Detection
- ❑ Robust AI

2. Graph-based Learning: Mining Complex Data Relationships

Building on robust detection methods, I extend these techniques to graph data, developing specialized algorithms for node-level outlier detection, open-set learning, and graph anomaly detection to effectively analyze complex relational information.

- ❑ Graph Learning
- ❑ Node-level Outlier Detection
- ❑ Graph Anomaly Detection
- ❑ Open-set Learning

3. Transformative Applications: LLMs and Generative AI

Leveraging insights from robust foundations and relational data analysis, I apply large language models (LLMs) and generative AI methods to address significant societal challenges such as political forecasting and drug discovery.

- ❑ Large Language Models (LLMs)
- ❑ Generative AI
- ❑ Political Forecasting
- ❑ Drug Discovery

4. Open-source and Scalable Systems: Democratizing AI Impact

To ensure wide accessibility of these advanced methods, I build scalable, automated, and open-source machine learning frameworks. As the creator of **PyOD** (25M+ downloads, adopted by NASA, Tesla, etc.), I lead over 10 open-source projects, including PyGOD, TDC, and ADBench, collectively accumulating 20,000+ GitHub stars (ranked **750** worldwide).

- ❑ Automated ML
- ❑ Distributed Systems
- ❑ Federated Learning
- ❑ Open-source AI
- ❑ Scalability
- ❑ Reproducibility

FULL-TIME PROFESSIONAL EXPERIENCE

University of Southern California
Thomas Lord Department of Computer Science
Assistant Professor (Tenure-Track) — Aug. 2023 - Present

- Foundations Of Robust Trustworthy Intelligent Systems (**FORTIS**) Lab: Link
- USC Machine Learning Center (MaSCle): Link

PwC Canada
Consulting & Deals
Senior Consultant (Data Scientist) — Aug. 2017 - Jun. 2019
Consultant (Data Scientist) — Feb. 2017 - Jul. 2017

Education

Carnegie Mellon University — Pittsburgh, PA
Ph.D. in Information Systems and Management — Sep. 2019 - May. 2023

- **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	$42,000	Oct. 2024
Amazon Security AI	$40,000+$20,000	Aug. 2024
Best Paper Award @ KDD Resource-Efficient Learning Workshop	*Recognition*	Aug. 2024
NSF ATD	$110,000	Aug. 2024
NSF POSE	$395,000	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

Scholar
ResearchG

Preprints & Under Submission

63. Xiongxiao Xu, Haoran Wang, Yueqing Liang, Philip S. Yu, Yue Zhao, 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, Yue Zhao, 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, Yue Zhao, 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, Yue Zhao, Paul Bogdan
ClimateLLM: Efficient Weather Forecasting via Frequency-Aware Large Language Models

Under submission
arXiv preprint arXiv:2502.11059

59. Yu Xia, Subhojyoti Mukherjee, Zhouhang Xie, Junda Wu, Xintong Li, Ryan Aponte, Hanjia Lyu, other authors, 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.
Under submission
arXiv preprint arXiv:2502.11767

58. Tiankai Yang, Yi Nian, Shawn Li, Ruiyao Xu, Yuangang Li, Jiaqi Li, Xiyang Hu, Ryan Rossi, Kaize Ding, Xia Hu, Yue Zhao
AD-LLM: Benchmarking Large Language Models for Anomaly Detection
Under submission
arXiv preprint arXiv:2412.11142

57. Lincan Li, Jiaqi Li, Catherine Chen†, Fred Gui†, other collaborators, Yue Zhao†, Yushun Dong†
Political-LLM: Large Language Models in Political Science
Under submission
arXiv preprint arXiv:2412.06864
(†corresponding authors)

56. Yuangang Li, Jiaqi Li, Zhuo Xiao, Tiankai Yang, Yi Nian, Xiyang Hu, Yue Zhao
NLP-ADBench: NLP Anomaly Detection Benchmark
Under submission
arXiv preprint arXiv:2412.04784

55. Jiechao Gao, Yuangang Li, Yue Zhao, Brad Campbell
H-FedSN: Personalized Sparse Networks for Efficient and Accurate Hierarchical Federated Learning for IoT Applications
Under submission
arXiv preprint arXiv:2412.06210

54. 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, Yue Zhao, Jiebo Luo, Julian McAuley
Personalized Multimodal Large Language Models: A Survey
Under submission
arXiv preprint arXiv:2412.02142

53. Zhendong Liu, Yi Nian, Henry Peng Zou, Li Li, Xiyang Hu, Yue Zhao
COOD: Concept-based Zero-shot OOD Detection
Under submission
arXiv preprint arXiv:2411.13578

52. Haoyan Xu, Kay Liu, Zhengtao Yao, Philip S. Yu, Kaize Ding, Yue Zhao
LEGO-Learn: Label-Efficient Graph Open-Set Learning
Under submission
arXiv preprint arXiv:2410.16386

51. Zerui Xu, Fang Wu, Tianfan Fu, Yue Zhao
Retrieval-Reasoning Large Language Model-based Synthetic Clinical Trial Generation
Under submission
arXiv preprint arXiv:2410.12476

50. Nan Hao, Yuangang Li, Kecheng Liu, Songtao Liu, Yingzhou Lu, Bohao Xu, Chenhao Li, Jintai Chen, Ling Yue, Tianfan Fu, Xiyang Hu, Xiao Wang, Yue Zhao
Artificial Intelligence-Aided Digital Twin Design: A Systematic Review
Ongoing work and to be submitted
https://www.preprints.org/manuscript/202408.2063

49. Mehrdad Kiamari, Mohammad Kiamari, Bhaskar Krishnamachari, Yue Zhao
GKAN: Graph Kolmogorov-Arnold Networks
Under submission
arXiv preprint arXiv:2406.06470

48. Minqi Jiang, Chaochuan Hou, Ao Zheng, Xiyang Hu, Songqiao Han, Hailiang Huang, Xiangnan He, Philip S. Yu, Yue Zhao
Weakly Supervised Anomaly Detection: A Survey
Under submission
arXiv preprint arXiv:2302.04549

Peer-reviewed Journal Papers

47. Hao Dong, Gaetan Frusque, Yue Zhao, 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

46. Ling Yang*, Zhilong Zhang*, Yang Song, Shenda Hong, Runsheng Xu, Yue Zhao, Wentao Zhang, Bin Cui, Ming-Hsuan Yang
Diffusion Models: A Comprehensive Survey of Methods and Applications
*ACM Computing Surveys (**CSUR**)*, 2023
(*equal contribution)

45. 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 (**SIGKDD Explor.**)*, 2023
(*equal contribution)

44. Kexin Huang*, Tianfan Fu*, Wenhao Gao*, Yue Zhao, 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)

43. Yue Zhao*, 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)

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

Conference & Workshop Papers

41. Shawn Li, Huixian Gong, Hao Dong, Tiankai Yang, Zhengzhong Tu, Yue Zhao
DPU: Dynamic Prototype Updating for Multimodal Out-of-Distribution Detection
*Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2025

40. 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

39. Yanbo Wang, Jiayi Ye, Siyuan Wu, Chujie Gao, Yue Huang, Xiuying Chen, Yue Zhao, 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.

38. Yuehan Qin*, Yichi Zhang*, Yi Nian*, Xueying Ding, Yue Zhao
MetaOOD: Meta-learning for Automatic Out-of-Distribution Detection Model Selection
*International Conference on Learning Representations (**ICLR**)*, 2025
ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (***KDD Workshop** on Resource-Efficient Learning for Knowledge Discovery*), 2024. 🎗 Best Paper Award.

37. 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

36. 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.

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

34. Jiaqing Xie, Yue Zhao, Tianfan Fu.
DeepProtein: Deep Learning Library and Benchmark for Protein Sequence Learning
***NeurIPS Workshop** on AI for New Drug Modalities (**AIDrugX**)*, **Spotlight**, 2024.

33. Xueying Ding, Yue Zhao, 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

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

30. Yue Zhao, 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, Yue Zhao, 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, Yue Zhao, Haiqin Yang, Bei Yu
Do Not Train It: A Linear Neural Architecture Search of Graph Neural Networks
*International Conference on Machine Learning (**ICML**)*, 2023

25. 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. Yue Zhao, 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*, Yue Zhao*
ADBench: Anomaly Detection Benchmark
*Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022
(*equal contribution & the corresponding author)

22. Yue Zhao*, Kay Liu*, Yingtong Dou*, et al.
Benchmarking Node Outlier Detection on Graphs
*Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022
(*equal contribution)

21. Yue Zhao, Xiaorong Zhang, Leman Akoglu
ELECT: Toward Unsupervised Outlier Model Selection
*IEEE International Conference on Data Mining (**ICDM**)*, 2022.
Regular paper. Acceptance rate 9.77% (85/870); overall acceptance 20% (174/870).

20. Zhiming Xu, Xiao Huang, Yue Zhao, Yushun Dong, Jundong Li
Contrastive Attributed Network Anomaly Detection with Data Augmentation
*Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**)*, 2022
Acceptance rate 19%.

19. Yue Zhao, Ryan A. Rossi, Leman Akoglu
Automatic Unsupervised Outlier Model Selection
*Advances in Neural Information Processing Systems (**NeurIPS**)*, 2021
Acceptance rate 26%.

18. Kwei-Herng Lai, Daochen Zha, Junjie Xu, Yue Zhao, 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*, Yue Zhao, 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.
Acceptance rate 23.5% (52/221). (*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, Yue Zhao, 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, Yue Zhao, 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. Yue Zhao, 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, Yue Zhao, Nicola Botta, Cezar Ionescu, Xiyang Hu
COPOD: Copula-Based Outlier Detection
*IEEE International Conference on Data Mining (**ICDM**)*, 2020.

10. Zheng Li, Yue Zhao, Jialin Fu
SYNC: A Copula based Framework for Generating Synthetic Data from Aggregated Sources
*IEEE International Conference on Data Mining Workshops (**ICDMW**)*, 2020.

9. Yiqun Mei, Yue Zhao, 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. Yue Zhao, 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)

7. Colin Wan, Zheng Li, Alicia Guo, Yue Zhao
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*.

6. Zain Nasrullah, Yue Zhao
Music Artist Classification with Convolutional Recurrent Neural Networks
IEEE International Joint Conference on Neural Networks (***IJCNN***), 2019, Hungary.

5. 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.
Acceptance rate 22.7% (90/397).

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. Yue Zhao, 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.
Acceptance rate 34% (194/568).

1. 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.
Acceptance rate 25.6% (23/90). (*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 — Los Angeles, CA

Instructor — Spring 2025
CSCI 566 Deep Learning and Its Applications

Instructor — Spring 2024
CSCI 566 Deep Learning and Its Applications

Carnegie Mellon University — Pittsburgh, PA

Teaching Assistant — 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)

Teaching Assistant (helping on course topics) Fall 2021
Statistics for IT Managers (Prof. Daniel Nagin)

University of Toronto Toronto, ON
Teaching Assistant & Lab Session Instructor Fall 2015
Embedded Systems (Prof. Philip Anderson)

University of Cincinnati Cincinnati, OH
Teaching Assistant & Lab Session Instructor Fall 2014
Intro to Programming (Prof. George Purdy)

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-)
- Li Li (USC, CS Ph.D., 2024 Fall-)

Qualification & Thesis Committee

- Maria Despoina Siampou (USC, CS Ph.D.)
- Alex Bisberg (USC, CS Ph.D.)
- Gengyu Rao (USC, CS Ph.D.)
- Mehrdad Kiamari (USC, ECE Ph.D.)
- Haonan Wang (USC, ECE Ph.D.)
- Yuan Meng (USC, ECE Ph.D.)
- Hassan Hamad (USC, ECE Ph.D.)
- Yizhou Zhang (USC, CS Ph.D.)
- Haoming Li (USC, CS Ph.D.)
- Arash Hajisafi (USC, CS Ph.D.)
- Yi Chien Lin (USC, ECE Ph.D.)
- Yuke Zhang (USC, ECE Ph.D.)

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 2025 (Senior PC)
- ICML 2024, 2025 (AC)
- AISTATS 2024, 2025 (AC)
- MLSys 2024
- KDD 2020, 2021, 2022, 2023

- IJCAI 2022, 2023
- NeurIPS 2021, 2022, 2023
- AAAI 2021, 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

NUS Tea Talk	*Towards Robust AI: Advances in Outlier and OOD Detection*	Jan. 2025
SFU@NeurIPS'24	*Towards Robust AI: Advances in Outlier and OOD Detection*	Dec. 2024
KAIST	*Unsupervised Model Selection: Automation with Meta-learning and LLMs*	Nov. 2024
Kennesaw State University	*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 Highlights (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