Yue Zhao

Contact Information	yzhao010@usc.edu github.com/yzhao062 in linkedin.com/in/yzhao062 viterbi-web.usc.edu/~yzhao010/ in 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	 I develop robust, efficient, and automated machine learning (ML) and data mining (DM) algorithms, systems, and applications. My key areas of focus include: Robust and Trustworthy AI: Enhancing AI systems with capabilities in out-of-distribution (OOD) detection, outlier detection (OD), and anomaly detection to improve reliability and trust. Efficient and Automated AI: Developing ML systems that operate with minimal human supervision, optimizing for performance and automation. AI Applications and Science: Applying AI technologies to solve complex problems in fields such as security, finance, healthcare, and political science. Foundation Models and Generative AI for OD/OOD: Investigating the interplay between OD/OOD and advanced models like large language models (LLMs), enhancing both fields. 			
	 (1) Robust and Trustworthy AI □ Out-of-distribution (OOD) Detection □ Outlier Detection 	□ Anomaly Detection□ Trustworthy AI		
	(2) Efficient and Automated AI ☐ Machine Learning Systems ☐ Decentralized Learning	□ Automated Machine Learning□ Meta-Learning		
	(3) AI Applications □ AI in Healthcare □ AI for Security	□ AI in Finance□ AI for Science		
	(4) Foundation Models and Generative AI for OD/C	OOD		
	☐ Large Language Models (LLMs) ☐ Trustworthy LLMs	□ LLMs for Anomaly/OOD Detection□ Anomaly/OOD Detection with LLMs		
OPEN-SOURCE HIGHLIGHTS YZHAO062	Open-source Contribution: I have led or contributed as a core developer to more than 10 ML open-source initiatives. Popular ones include PyOD (A Python Toolbox for Scalable Outlier Detection), ADBench (Anomaly Detection Benchmark), and TDC (An ML Data Hub for Drug Discovery). My works receive ♀♀20,000 GitHub Stars and 22,000,000 downloads as of October 13, 2024.			
FULL-TIME PROFESSIONAL EXPERIENCE	ROFESSIONAL Thomas Lord Department of Computer Science			
	PwC Canada Consulting & Deals Senior Consultant (Data Scientist) Consultant (Data Scientist)	Aug. 2017 - Jun. 2019 Feb. 2017 - Jul. 2017		

EDUCATION

Carnegie Mellon University

Ph.D. in Information Systems and Management

Pittsburgh, PA 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 Sep. 2015 - Dec. 2016

Master of Science in Computer Science

50p. 2010 Boo. 2010

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)

Amazon Research Awards	\$60,000	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

G SCHOLAR R RESEARCHG

Preprints & Under Submission

45. Yuehan Qin, Yichi Zhang, Yi Nian, Xueying Ding, <u>Yue Zhao</u> MetaOOD: Automatic Selection of OOD Detection Models Under submission

arXiv preprint arXiv:2410.03074

44. Nan Hao, Yuangang Li, Kecheng Liu, Songtao Liu, Yingzhou Lu, Bohao Xu, Chenhao Li, Jintai Chen, Ling Yue, Tianfan Fu, Xiyang Hu, Xiao Wang, <u>Yue Zhao</u>

Artificial Intelligence-Aided Digital Twin Design: A Systematic Review

Under submission

https://www.preprints.org/manuscript/202408.2063

43. Mehrdad Kiamari, Mohammad Kiamari, Bhaskar Krishnamachari, Yue Zhao

GKAN: Graph Kolmogorov-Arnold Networks

Under submission

arXiv preprint arXiv:2406.06470

42. Minqi Jiang, Chaochuan Hou, Ao Zheng, Xiyang Hu, Songqiao Han, Hailiang Huang, Xiangnan He, Philip S. Yu, <u>Yue Zhao</u>

Weakly Supervised Anomaly Detection: A Survey

Under submission

arXiv preprint arXiv:2302.04549

Peer-reviewed Journal Papers

41. 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)

40. 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)

39. 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)

- 38. <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.

Peer-reviewed Conference & Workshop Papers (with proceedings)

36. 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), Spotlight, 2024

35. 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

34. 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

 ${\bf 33}.\,$ Songtao Liu, Hanjun Dai,
 <u>Yue Zhao, Peng Liu</u>

Preference Optimization for Molecule Synthesis with Conditional Residual Energy-based Models International Conference on Machine Learning (ICML), Oral, 2024

32. Yue Zhao, Leman Akoglu

Hyperparameter Optimization for Unsupervised Outlier Detection

International Conference on Automated Machine Learning (AutoML), 2024

31. Yue Zhao

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

30. 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)

29. 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

- 28. 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
- 26. Yue Zhao, George H. Chen, Zhihao Jia TOD: GPU-accelerated Outlier Detection via Tensor Operations International Conference on Very Large Data Bases (VLDB), 2023
- 25. 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)
- 24. Yue Zhao*, Kay Liu*, Yingtong Dou*, et al. Benchmarking Node Outlier Detection on Graphs Advances in Neural Information Processing Systems (NeurIPS), 2022 (*equal contribution)
- 23. 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).
- 22. 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%.
- 21. <u>Yue Zhao</u>, Ryan A. Rossi, Leman Akoglu Automatic Unsupervised Outlier Model Selection Advances in Neural Information Processing Systems (NeurIPS), 2021 Acceptance rate 26%.
- 20. 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
- 19. 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)
- 18. <u>Yue Zhao*</u>, 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)
- 17. 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)
- 16. 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
 - AutoAudit: Mining Accounting and Time-Evolving Graphs IEEE International Conference on Big Data (Big Data), 2020
- 15. 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

- 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.
- 12. 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.
- 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)
- Zain Nasrullah, <u>Yue Zhao</u>
 Music Artist Classification with Convolutional Recurrent Neural Networks
 IEEE International Joint Conference on Neural Networks (IJCNN), 2019, Hungary.
- 9. <u>Yue Zhao</u>, 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).
- 8. <u>Yue Zhao</u>, Maciej K. Hryniewicki XGBOD: Improving Supervised Outlier Detection with Unsupervised Representation Learning *IEEE International Joint Conference on Neural Networks* (*IJCNN*), 2018, Rio, Brazil.
- 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).
- 6. <u>Yue Zhao</u>*, 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)

Peer-reviewed Workshop Papers (without proceedings)

- Jiaqing Xie, <u>Yue Zhao</u>, Tianfan Fu.
 DeepProtein: Deep Learning Library and Benchmark for Protein Sequence Learning NeurIPS Workshop on AI for New Drug Modalities (AIDrugX), Spotlight, 2024.
- 4. Yuehan Qin, Yichi Zhang, <u>Yue Zhao</u> MetaOOD: Meta-learning for Automatic Out-of-Distribution Detection Model Selection ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD Workshop on Resource-Efficient Learning for Knowledge Discovery), 2024. Sest Paper Award.
- 3. <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*.
- 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.
- 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.

Internship NortonLifeLock Research Group EXPERIENCE Machine Learning Research Intern 2022 Microsoft Research 2022 Machine Learning Research Intern 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 Mar. 2012 - Dec. 2014 Software Engineer (Intern & Contract) Teaching University of Southern California Los Angeles, CA EXPERIENCE Instructor Spring 2025 (scheduled) CSCI 566 Deep Learning and Its Applications Spring 2024 Instructor CSCI 566 Deep Learning and Its Applications Pittsburgh, PA Carnegie Mellon University Fall 2022 Teaching Assistant 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) Fall 2021

Teaching Assistant (helping on course topics)

Statistics for IT Managers (Prof. Daniel Nagin)

University of Toronto

Teaching Assistant & Lab Session Instructor

Embedded Systems (Prof. Philip Anderson)

University of Cincinnati

Teaching Assistant & Lab Session Instructor Intro to Programming (Prof. George Purdy)

Ph.D. Students

- Haoyan Xu (USC, ECE Ph.D., 2024 Spring-)
- 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

- 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.)

Toronto, ON

Cincinnati, OH

Fall 2015

Fall 2014

- 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, IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- Action Editor, Journal of Data-centric Machine Learning Research (DMLR)

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

- ICLR 2025 (AC)
- AAAI 2025 (Senior PC)
- ICML 2024 (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)
- $\bullet\,$ 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	LinkedIn Anti-Abuse AI	Outlier Detection: Automation, Systems, and GenAI	Aug. 2024
Lectures	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 Engi-	Safety Measures for LLMs	Apr. 2024
	neering Safety		
	Visa Research	Towards Reproducible, Automated, and Scalable AD	Apr. 2024
	USC Symposium on Frontiers	Generative AI for Anomaly Detection	Mar. 2024
	of Generative AI		
	AAAI New Faculty Highlights	Towards Reproducible, Automated, and Scalable AD	Feb. 2024
	(invited)		
	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
	${\rm Intuit}$	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

 $General\ Machine\ Learning\ Applications$

University of Nottingham

Jan. 2021