Xiaoqian (Joy) Wang

Curriculum Vitae

PERSONAL DETAILS

Email	joywang@purdue.edu
Homepage	https://engineering.purdue.edu/∼joywang/

EDUCATION

Ph.D., Computer Engineering, University of Pittsburgh, Pittsburgh, USA, August 2019.
Advisor: John A. Jurenko Endowed Professor Heng Huang.

B.S., Bioinformatics, Zhejiang University, Hangzhou, China, July 2013.
Graduated from Chu Kochen Honors College.

EMPLOYMENT

Summer Research Intern May 2017 - August 2017
GE Global Research, San Ramon, USA

Assistant Professor August 2019 - present
Elmore Family School of Electrical and Computer Engineering
Weldon School of Biomedical Engineering (by courtesy)
Regenstrief Center for Healthcare Engineering
Purdue University, West Lafayette, USA

HONORS AND AWARDS

- AAAI Distinguished Paper Award, 2023.
- NSF CAREER Award, 2022.
- Purdue Seed for Success Acorn Awards, 2022.
- Best Research Assistant Award (6 from ∼1000 graduate students, one awardee from each of the Swanson School of Engineering's six departments), University of Pittsburgh, 2017.

PUBLICATIONS

(Google scholar citation)
In the following, $^{G/UG}$ shows graduate/undergraduate students that I advised, ^{1} shows co-first authors.

Conference Papers

[C48] Hoin Jung^{G}, and *Xiaoqian Wang*. "Towards On-the-Fly Novel Category Discovery in Dynamic Long-Tailed Distributions". In the IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV 2025**). Accepted to Appear.

[C47] Hoin Jung^{G}, Taeuk Jang^{G}, and *Xiaoqian Wang*. "A Unified Debiasing Approach for Vision-Language Model across Modalities and Tasks". In the 38th Conference on Neural Information Processing Systems (**NeurIPS 2024**). Accepted to Appear. Spotlight.

[C46] Yipei Wang^{G}, Jeffrey Mark Siskind, and *Xiaoqian Wang*. "Great Minds Think Alike: The Universal Convergence of Input Saliency". In the 38th Conference on Neural Information

Processing Systems (**NeurIPS 2024**). Accepted to Appear.

[C45] Linlin Li[1], Shenyu Lu[G,1], David M. Umulis*, and *Xiaoqian Wang**. "Inverse problem antidote (IPA): Modeling of Systems Biology Model with Invertible Neural Networks". In the International Conference on Bioinformatics and Biomedicine (**BIBM 2024**) **workshop**. 8 pages. (* indicates co-corresponding authors.)

[C44] Hoin Jung[G], and *Xiaoqian Wang*. "Fairness-Aware Online Positive-Unlabeled Learning". In the 19th Conference on Empirical Methods in Natural Language Processing (**EMNLP 2024**), industrial track. pp. 170–185.

[C43] Xiaoze Liu[G], Ting Sun, Tianyang Xu, Feijie Wu, Cunxiang Wang, *Xiaoqian Wang*, and Jing Gao. "SHIELD: Evaluation and Defense Strategies for Copyright Compliance in LLM Text Generation". In the 19th Conference on Empirical Methods in Natural Language Processing (**EMNLP 2024**), main conference. pp. 1640–1670.

[C42] Shenyu Lu[G], Junyi Chai[G], and *Xiaoqian Wang*. "Neural Collapse Inspired Debiased Representation Learning for Min-Max Fairness". In the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2024**). *Acceptance rate:* $\sim$ 20% among 2046 submissions. pp. 2048–2059.

[C41] Yipei Wang[G], and *Xiaoqian Wang*. "Benchmarking Deletion Metrics with the Principled Explanations". In the 41st International Conference on Machine Learning (**ICML 2024**). pp. 51569–51595.

[C40] Hoin Jung[G], Vinicius Cabral Do Nascimento, Hongyang Liu, *Xiaoqian Wang*, Cheng-Kok Koh, and Dan Jiao. "Explainable Planar Multiband Antenna Designer with Wasserstein Generative Adversarial Network". In the IEEE International Symposium on Antennas and Propagation and ITNC-USNC-URSI Radio Science Meeting (**AP-S/URSI 2024**). 2 pages.

[C39] Taeuk Jang[G], and *Xiaoqian Wang*. "FADES: Fair Disentanglement with Sensitive Relevance". In the IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR 2024**). pp. 12067–12076.

[C38] Xidong Wu, Shangqian Gao, Zeyu Zhang, Zhenzhen Li, Runxue Bao, Yanfu Zhang, *Xiaoqian Wang*, and Heng Huang. "Auto-Train-Once: Controller Network Guided Automatic Network Pruning from Scratch". In the IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR 2024**). pp. 16163–16173.

[C37] Yipei Wang[G], Bing He, Shannon Risacher, Andrew Saykin, Jingwen Yan*, and *Xiaoqian Wang**. "Learning the irreversible progression trajectory of Alzheimer's disease". In the 21st IEEE International Symposium on Biomedical Imaging (**ISBI 2024**). 4 pages. (* indicates co-corresponding authors.)

[C36] Shenyu Lu[G], Yipei Wang[G], and *Xiaoqian Wang*. "Debiasing Attention Mechanism in Transformer without Demographics". In the 12th International Conference on Learning Representations (**ICLR 2024**). 9 pages.

[C35] Taeuk Jang[G], Hongchang Gao, Pengyi Shi, and *Xiaoqian Wang*. "Achieving Fairness through Separability: A Unified Framework for Fair Representation Learning". In Proceedings of the 27th International Conference on Artificial Intelligence and Statistics (**AISTATS 2024**). pp. 28–36.

[C34] Yipei Wang[G], and *Xiaoqian Wang*. "On the Effect of Key Factors in Spurious Correlation: A theoretical Perspective". In Proceedings of the 27th International Conference on Artificial Intelligence and Statistics (**AISTATS 2024**). pp. 3745–3753.

[C33] Taeuk Jang[G], *Xiaoqian Wang*, and Heng Huang. "Adversarial Fairness Network". In Proceedings of the 38th AAAI Conference on Artificial Intelligence (**AAAI 2024**). pp. 22159–

22166.

[C32] Tianchun Li[G], Chengxiang Wu[UG], Pengyi Shi, and *Xiaoqian Wang*. "Cumulative Difference Learning VAE for Time-Series with Temporally Correlated Inflow-Outflow". In Proceedings of the 38th AAAI Conference on Artificial Intelligence (**AAAI 2024**). pp. 13619–13627.

[C31] Taeuk Jang[G], and *Xiaoqian Wang*. "Difficulty-based Sampling for Debiased Contrastive Representation Learning". In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2023**). pp. 24039–24048.

[C30] Tianci Liu, Haoyu Wang, Yaqing Wang, *Xiaoqian Wang*, Lu Su, and Jing Gao. "SimFair: A Unified Framework for Fairness-Aware Multi-Label Classification". In Proceedings of the 37th AAAI Conference on Artificial Intelligence (**AAAI 2023**). **Distinguished Paper Award**, 12 selected out of 1,721 accepted papers, among 8,777 submissions. pp. 14338–14346.

[C29] Yipei Wang[G], and *Xiaoqian Wang*. "Why Not Other Classes?: Towards Class-Contrastive Back-Propagation Explanations". In Proceedings of the 36th Conference on Neural Information Processing Systems (**NeurIPS 2022**). pp. 9085–9097.

[C28] Junyi Chai[G], and *Xiaoqian Wang*. "Self-Supervised Fair Representation Learning without Demographics". In Proceedings of the 36th Conference on Neural Information Processing Systems (**NeurIPS 2022**). pp. 27100–27113.

[C27] Junyi Chai[G], Taeuk Jang[G], and *Xiaoqian Wang*. "Fairness without Demographics through Knowledge Distillation". In Proceedings of the 36th Conference on Neural Information Processing Systems (**NeurIPS 2022**). pp. 19152–19164.

[C26] Junyi Chai[G], and *Xiaoqian Wang*. "Fairness with Adaptive Weights". In Proceedings of the 39th International Conference on Machine Learning (**ICML 2022**). pp. 2853–2866.

[C25] Taeuk Jang[G], Pengyi Shi, and *Xiaoqian Wang*. "Group-Aware Threshold Adaptation for Fair Classification". In Proceedings of the 36th AAAI Conference on Artificial Intelligence (**AAAI 2022**). pp. 6988–6995. *Acceptance rate:* 15.0% (1349/9020).

[C24] Yipei Wang[G], and *Xiaoqian Wang*. "Self-Interpretable Model with Transformation Equivariant Interpretation". In Proceedings of the 35th Conference on Neural Information Processing Systems (**NeurIPS 2021**). No. 34, pp. 2359–2372.

[C23] Hongchang Gao, *Xiaoqian Wang*, Lei Luo, and Xinghua Shi. "On the Convergence of Stochastic Compositional Gradient Descent Ascent Method". In Proceedings of the 30th International Joint Conference on Artificial Intelligence (**IJCAI 2021**). pp. 2389–2395. *Acceptance rate:* 13.9% (587/4284).

[C22] *Xiaoqian Wang*, and Feiping Nie. "Multi-Task Learning via Sharing Inexact Low-Rank Subspace". In Proceedings of the 46th International Conference on Acoustics, Speech, and Signal Processing (**ICASSP 2021**). pp. 3690–3694.

[C21] Rui Wang[UG], *Xiaoqian Wang*, and David Inouye. "Shapley Explanation Networks". In the 9th International Conference on Learning Representations (**ICLR 2021**). 9 pages.

[C20] Taeuk Jang[G], Feng Zheng, and *Xiaoqian Wang*. "Constructing a Fair Classifier with Generated Fair Data". In Proceedings of the 35th AAAI Conference on Artificial Intelligence (**AAAI 2021**). Vol. 35, No. 9, pp. 7908–7916.

[C19] Yawen Huang, Feng Zheng, Junyu Jiang, Danyang Wang, *Xiaoqian Wang*, and Ling Shao. "Super-Resolution and Inpainting with Degraded and Upgraded Generative Adversarial Networks". In Proceedings of the 29th International Joint Conference on Artificial Intelligence (**IJCAI 2020**). pp. 645–651. *Acceptance rate:* 12.6% (592/4717).

[C18] Kamran Ghasedi Dizaji, *Xiaoqian Wang*, Cheng Deng, and Heng Huang. "Balanced Self-Paced Learning for Generative Adversarial Clustering Network". In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2019**). pp.

4391–4400. *Oral presentation, acceptance rate:* 5.6% (288/5160).

[C17] *Xiaoqian Wang*, Weidong Cai, Dinggang Shen, and Heng Huang. "Temporal Correlation Structure Learning for MCI Conversion Prediction". In Proceedings of the 21st International Conference on Medical Image Computing and Computer-Assisted Intervention (**MICCAI 2018**). pp. 446–454.

[C16] Kamran Ghasedi Dizaji[1], *Xiaoqian Wang*[1], and Heng Huang. "Semi-Supervised Generative Adversarial Network for Gene Expression Inference". In Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2018**). pp. 1435–1444. *Acceptance rate:* 18.4% (181/983), *research track*.

[C15] *Xiaoqian Wang*, Yijun Huang, Ji Liu, and Heng Huang. "New Balanced Active Learning Model and Optimization Algorithm". In Proceedings of the 27th International Joint Conference on Artificial Intelligence (**IJCAI 2018**). pp. 2826–2832.

[C14] *Xiaoqian Wang*, and Hao Huang. "Directional Label Rectification in Adaptive Graph". In Proceedings of the 32nd AAAI Conference on Artificial Intelligence (**AAAI 2018**). pp. 2548–2555.

[C13] *Xiaoqian Wang*[1], Hong Chen[1], Weidong Cai, Dinggang Shen, and Heng Huang. "Regularized Modal Regression with Applications in Cognitive Impairment Prediction". In Proceedings of the 31st Conference on Neural Information Processing Systems (**NIPS 2017**). pp. 1447–1457.

[C12] Hong Chen, *Xiaoqian Wang*, Cheng Deng, and Heng Huang. "Group Sparse Additive Machine". In Proceedings of the 31st Conference on Neural Information Processing Systems (**NIPS 2017**). pp. 197–207.

[C11] Feiping Nie, *Xiaoqian Wang*, Cheng Deng, and Heng Huang. "Learning A Structured Optimal Bipartite Graph for Co-Clustering". In Proceedings of the 31st Conference on Neural Information Processing Systems (**NIPS 2017**). pp. 4132–4141.

[C10] *Xiaoqian Wang*, Kefei Liu, Jingwen Yan, Shannon L. Risacher, Andrew J. Saykin, Li Shen, and Heng Huang. "Predicting Interrelated Alzheimer's Disease Outcomes via New Self-Learned Structured Low-Rank Model". In Proceedings of the 25th Biennial International Conference on Information Processing in Medical Imaging (**IPMI 2017**). pp. 198–209.

[C9] *Xiaoqian Wang*, Jingwen Yan, Xiaohui Yao, Sungeun Kim, Kwangsik Nho, Shannon L. Risacher, Andrew J. Saykin, Li Shen, and Heng Huang. "Longitudinal Genotype-Phenotype Association Study via Temporal Structure Auto-Learning Predictive Model". In Proceedings of the 21st International Conference on Research in Computational Molecular Biology (**RECOMB 2017**). pp. 287–302.

[C8] Feiping Nie, *Xiaoqian Wang*, and Heng Huang. "Multiclass Capped p-Norm SVM for Robust Classifications". In Proceedings of the 31st AAAI Conference on Artificial Intelligence (**AAAI 2017**). pp. 2415–2421.

[C7] Hongchang Gao[1], *Xiaoqian Wang*[1], and Heng Huang. "New Robust Clustering Model for Identifying Cancer Genome Landscapes". In Proceedings of the 16th IEEE International Conference on Data Mining (**ICDM 2016**). pp. 151–160. *Regular paper, acceptance rate:* 8.6% (78/904).

[C6] *Xiaoqian Wang*, Dinggang Shen, and Heng Huang. "Prediction of Memory Impairment with MRI Data: A Longitudinal Study of Alzheimer's Disease". In Proceedings of the 19th International Conference on Medical Image Computing and Computer-Assisted Intervention (**MICCAI 2016**). pp. 273–281.

[C5] *Xiaoqian Wang*, Feiping Nie, and Heng Huang. "Structured Doubly Stochastic Matrix for Graph Based Clustering". In Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2016**). pp. 1245–1254. *Oral presentation,*

acceptance rate: 6.3% (70/1115), *research track*.

[C4] Feiping Nie, *Xiaoqian Wang*, Michael I. Jordan, and Heng Huang. "The Constrained Laplacian Rank Algorithm for Graph-Based Clustering". In Proceedings of the 30th AAAI Conference on Artificial Intelligence (**AAAI 2016**). pp. 1969–1976.

[C3] *Xiaoqian Wang*, Yun Liu, Feiping Nie, and Heng Huang. "Discriminative Unsupervised Dimensionality Reduction". In Proceedings of the 24th International Joint Conference on Artificial Intelligence (**IJCAI 2015**). pp. 3925–3931.

[C2] Feiping Nie, *Xiaoqian Wang*, and Heng Huang. "Clustering and Projected Clustering via Adaptive Neighbor Assignment". In Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2014**). pp. 977–986. *Acceptance rate:* 14.6% (151/1036), *research track*.

[C1] Feiping Nie, Yizhen Huang, *Xiaoqian Wang*, and Heng Huang. "New Primal SVM Solver with Linear Computational Cost for Big Data Classifications". In Proceedings of the 31st International Conference on Machine Learning (**ICML 2014**). pp. 505–513.

Journal Articles

[J7] Linlin Li, Xu Wang, Junyi Chai[G], *Xiaoqian Wang*, Adrian Buganza Tepole, and David Umulis. "Determining the Role of Advection in Patterning by Bone Morphogenetic Proteins through Neural Network Model-based Acceleration of a 3D Finite Element Model of the Zebrafish Embryo". **Frontiers in Systems Biology** 2, (2022). 12 pages.

[J6] Feiping Nie, Zhanxuan Hu, *Xiaoqian Wang*, Xuelong Li, and Heng Huang. "Iteratively Re-Weighted Method for Sparsity-Inducing Norms". **IEEE Transactions on Knowledge and Data Engineering** 35, no. 7 (2023): 7045–7055

[J5] Jiexi Yan, Cheng Deng, Lei Luo, *Xiaoqian Wang*, Xiaohui Yao, Li Shen, and Heng Huang. "Identifying Imaging Markers for Predicting Cognitive Assessments Using Wasserstein Distances Based Matrix Regression". **Frontiers in Neuroscience** 13, no. 668 (2019). 9 pages.

[J4] *Xiaoqian Wang*, Jingwen Yan, Xiaohui Yao, Sungeun Kim, Kwangsik Nho, Shannon L. Risacher, Andrew J. Saykin, Li Shen, and Heng Huang. "Longitudinal Genotype-Phenotype Association Study via Temporal Structure Auto-Learning Predictive Model". **Journal of Computational Biology** 25, no. 7 (2018): 809–824.

[J3] *Xiaoqian Wang*, Xiantong Zhen, Quanzheng Li, Dinggang Shen, and Heng Huang. "Cognitive Assessment Prediction in Alzheimer's Disease by Multi-Layer Multi-Target Regression". **Neuroinformatics** 16 (2018): 285–294.

[J2] *Xiaoqian Wang*, Hong Chen, Jingwen Yan, Kwangsik Nho, Shannon L. Risacher, Andrew J. Saykin, Li Shen, and Heng Huang. "Quantitative Trait Loci Identification for Brain Endophenotypes via New Additive Model with Random Networks". **Bioinformatics** 34, no. 17 (2018): i866–i874. (Accepted by European Conference on Computational Biology (**ECCB**), *acceptance rate:* 17.1% (48/280)).

[J1] *Xiaoqian Wang*[1], Kamran Ghasedi Dizaji[1], and Heng Huang. "Conditional Generative Adversarial Network for Gene Expression Inference". **Bioinformatics** 34, no. 17 (2018): i603–i611. (Accepted by European Conference on Computational Biology (**ECCB**), *acceptance rate:* 17.1% (48/280)).

STUDENTS SUPERVISED

- **PhD Graduates:**
  Taeuk Jang (May 2024). Thesis: Novel Approaches to Mitigate Data Bias and Model Bias for Fair Machine Learning Pipelines. Next Stop: Amazon.

- **Current PhD Students:**

Yipei Wang, Purdue ECE	2025 (expected)
You-Ru Lu, Purdue AAE (co-advising with Prof. Dengfeng Sun)	2025 (expected)
Junyi Chai, Purdue ECE	2026 (expected)
Shenyu Lu, Purdue ECE	2026 (expected)
Hoin Jung, Purdue ECE	2027 (expected)
Zhaoying Pan, Purdue ECE	2028 (expected)
Xiaoze Liu, Purdue ECE (co-advising with Prof. Jing Gao)	2028 (expected)

- **Undergraduate Students:**

Jie Li, Purdue CS & Math	Fall 2019-Fall 2020
Ying Yuan, Purdue CS	Spring 2020
Yucheng Wang, Purdue ECE	Spring 2020
Xinyi Pang, Purdue CS	Spring 2020
Austin Carl Campbell, Purdue CS	Spring 2020
Kaiwen Shen, Purdue ECE	Spring 2020
Hang Wang, Purdue CS & Math (co-advised with Prof. Pengyi Shi)	Fall 2021-Spring 2022
Mengqi Liu, Purdue ECE	Spring 2022
Yunhao Lan, Purdue ECE	Fall 2022-Spring 2023
Arturo Francisco Figueroa Alceda, Purdue Louis Stokes Alliance for Minority Participation (LSAMP)	Summer 2023
Seoyoung Cho, Purdue ECE	Fall 2023-Spring 2024

PATENT

Hao Huang, and *Xiaoqian Wang*. "Label Rectification and Classification/Prediction for Multivariate Time Series Data". U.S. Patent US10417083. (2019).

FUNDING

I've been involved in funding projects totaling over $16M, with my direct share over $2M:

External Funding

- NIH NIA R01AG081951-01A1: "Characterizing the Progression of Alzheimer's Disease with Multi-Omic Genetic and Imaging Data". 2024-2029. Funded as **MPI**, (Contact PI: Jingwen Yan, IU School of Medicine).
- NSF IIS 2345235: "III: Small: Collaborative Research: Fair Data Mining with Insights from Data and Model". 2024-2027. Funded as **PI**, (Co-PI: Jingwen Yan, IU School of Medicine).
- USDA 2023-67021-41368: "Broadband Connectivity For Rural Communications And Smart Livestock Management". 2023-2025. Funded as **Purdue PI**, (PI: Shuai Nie, University of Nebraska–Lincoln, School of Computing).
- NSF CloudBank: Fund for using Amazon Web Services. 2023-2024. Funded as **PI**.
- NSF IIS 2146091: "CAREER: Advancing Fair Data Mining via New Robust and Explainable Algorithms and Human-Centered Approaches". 2022-2027. Funded as **Single PI**.
- NSF DBI 2120200: "Emergent Mechanisms in Biology of Robustness, Integration & Organization (EMBRIO)". 2021-2026. Funded as **Co-PI**, (PI: David M. Umulis, Purdue BME).
- NSF IIS 1955890: "III: Medium: Integrating Large-Scale Machine Learning and Edge Computing for Collaborative Autonomous Vehicles". 2020-2025. Funded as **Co-PI**, (Purdue PI: Dengfeng Sun, Purdue AAE).

Internal Funding

- Elmore Center: "Rapid Heterogeneous Integration (Rapid-HI) Design Institute". 2023. Funded as **Co-PI**, (PI: Dan Jiao, Purdue ECE).
- Elmore Center: "Uncrewed Aircraft Systems (ECUAS)". 2023. Funded as **Co-PI**, (PI: Yung-Hsiang Lu, Purdue ECE).
- Elmore ECE Emerging Frontiers Center: "Merging Machine Learning with Quantum Photonics: from Physics-Driven Algorithms to Single Photon Sources and Quantum Metrology". 2020-2022. Funded as **Co-PI**, (PI: Alexandra Boltasseva, Purdue ECE).

Reverse Site Visit

- "NSF AI Institute: Multi-scale Multi-physics Guided AI Systems for Smart Sustainable Agriculture." Virtual site visit in April 19-23, 2021. (PI: Binayak Mohanty at Texas A&M University. Purdue PI: Melba M. Crawford, Civil Engineering).

TEACHING EXPERIENCE

Course Instructor

- ECE 264 *Advanced C Programming* Fall 2019, Spring 2020, Fall 2021-2023
- ECE 570 *Artificial Intelligence* Fall 2020, Fall 2024
- ECE 473 *Introduction to Artificial Intelligence* Spring 2021
- ECE 695 *Machine Learning in Bioinformatics and Healthcare* Spring 2022-2024

INVITED TALK

Enhancing Fairness in Deep Learning from Data and Model Perspectives

Columbia University, Natural Language Processing Seminar Dec 2024
North Carolina State University, Data Mining Guest Lecture Oct 2024
University of Notre Dame, Department of Computer Science and Engineering Sep 2024
Apple, Machine Learning and Computer Vision Seminar Jul 2024

Integrating Human Knowledge in Machine Learning Models and Explanations

IU School of Medicine, Center for Computational Biology and Bioinformatics Oct 2024
University of Illinois Urbana-Champaign, Machine Learning Seminar Apr 2024

Fairness in Machine Learning without Demographics

Texas A&M University, Department of Computer Science and Engineering Apr 2024
Georgia Institute of Technology, Center for Signal & Information Processing Mar 2024
Northeastern University, Data Lab Seminar Mar 2024

Identifying and Addressing Spurious Correlation in Machine Learning

Purdue University, 3rd Annual Quantum Summer School Apr 2023

Fair and Explainable Machine Learning with Applications in Biomedical Data Science

Consortium of Universities for Global Health (CUGH), Fairness in Machine Intelligence for Global Health Workshop Apr 2023
Purdue University, Weldon School of Biomedical Engineering Seminar Nov 2022
Purdue University, 2nd Annual Quantum Summer School May 2022
Clemson University, School of Computing Apr 2022

Trustworthy Machine Learning for Simulation across Scales

Purdue University, Quantitative and Systems Biology Research Group Dec 2021

New Nonlinear Machine Learning Algorithms with Applications in Alzheimer's
IU School of Medicine, Center for Computational Biology and Bioinformatics Apr 2021
IU School of Medicine, Stark Neurosciences Research Institute Mar 2021
Indiana National Lab Day, Indianapolis, USA Oct 2019

Quantitative Trait Loci Identification for Brain Endophenotypes via New Additive Model with Random Networks
European Conference on Computational Biology (ECCB), Athens, Greece Sep 2018

Conditional Generative Adversarial Network for Gene Expression Inference
European Conference on Computational Biology (ECCB), Athens, Greece Sep 2018

Scalable and Effective Failure Analysis of Multivariate Time-Series Data
GE Global Research, San Ramon, USA Aug 2017

Auto-Learned Temporal Structure Based Predictive Model
GE Global Research, San Ramon, USA Jun 2017

PROFESSIONAL ACTIVITIES

Senior Member, IEEE.

Organizer, AAAI 2025 tutorial "Inferential Machine Learning: Towards Human-Collaborative Vision and Language Models", co-organizing with Mohit Prabhushankar, Ghassan AlRegib in February 2025.

Panel Speaker, invited to the panel discussion with Jeff Dean, Chief Scientist of Google DeepMind and Google Research in April 2024.

Panel Speaker, invited to the panel discussion with Jitendra Malik, Arthur J. Chick Professor of UC Berkeley in April 2023.

Reviewer, NSF SBIR/STTR Panelist, July 2022, May 2023.

Guest Editor, Frontiers in Big Data, 2022.

Faculty Success Program Alumni, Cohort 36, 2021.

Session Chair, Unsupervised Learning 3 Session, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2020; [Multidisciplinary Topics and Applications] Biology and Medicine Session, International Joint Conference on Artificial Intelligence (IJCAI), 2020.

Area Chair/Meta-Reviewer, International Joint Conference on Artificial Intelligence (IJCAI), 2021-2022; AAAI Conference on Artificial Intelligence (AAAI), 2023-2025; SIAM Conference on Data Mining (SDM), 2024; European Conference on Computer Vision (ECCV), 2024; Conference on Computer Vision and Pattern Recognition (CVPR), 2025.

Program Committee Member

Conference on Neural Information Processing Systems (NeurIPS), International Conference on Machine Learning (ICML), International Conference on Learning Representations (ICLR), AAAI Conference on Artificial Intelligence (AAAI), International Joint Conference on Artificial Intelligence (IJCAI), ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV), European Conference on Computer Vision (ECCV)

Journal Reviewer

Transactions on Pattern Analysis and Machine Intelligence (TPAMI), IEEE Transactions on Cybernetics, IEEE Transactions on Image Processing (TIP), IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Journal of Machine Learning Research (JMLR), Transactions on Knowledge and Data Engineering (TKDE), Pattern Recognition, Cognitive Computation, Neurocomputing, Knowledge and Information Systems, Journal on Emerging Technologies in Computing Systems, Neural Processing Letters, International Journal of Machine Learning and Cybernetics, International Journal on Artificial Intelligence Tools