Hao Wang

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Rutgers University
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RESEARCH INTERESTS

Machine Learning, Deep Learning, Large Language Models & Foundation Models, Healthcare, Trustworthy & Safe AI, Bayesian Deep Learning, Network Analysis, Interpretable AI

POSITIONS

Rutgers University 09/2020 - Present
Department of Computer Science
- Assistant Professor

Massachusetts Institute of Technology 09/2017 - 03/2020
Computer Science and Artificial Intelligence Laboratory (CSAIL)
- Postdoctoral Associate, working with Dina Katabi and Tommi S. Jaakkola

Carnegie Mellon University 10/2016 - 04/2017
Machine Learning Department, School of Computer Science
- Visiting Scholar, working with Eric P. Xing

EDUCATION

Hong Kong Univerisity of Science and Technology 08/2013 - 08/2017
Department of Computer Science and Engineering, School of Engineering
- Ph.D., advised by Dit-Yan Yeung
- School of Engineering PhD Research Excellence Award (Top 1)

Shanghai Jiao Tong University 09/2009 - 08/2013
Computer Science Department, School of Electronic Information and Electrical Engineering
- B.Sc., advised by Wu-Jun Li
- Outstanding Undergraduate Thesis Award (Top 0.5%)
- GPA: 3.96/4.30; Ranking: 1/123

AWARDS & HONORS

ACM SIGKDD 2025 Test of Time Award 2025

Microsoft Research AI & Society Fellowship 2024

NSF CAREER Award 2024

NIH R01 Award 2024

Meta Faculty Research Award 2024

Nokia Faculty Research Award 2024

Ten Notable Advances in 2022 by Nature Medicine 2022
Selected from Nature, Lancet, Science, NEJM.

Best Paper Finalist at CVPR 2022

AI 2000 Most Influential Scholars 2022-2024
Awarded by Aminer.

Google Cloud Research Credit Award 2022

Amazon Faculty Research Award 2020

ICML Top 33% Reviewers 2020

School of Engineering PhD Research Excellence Award 2017-2018
Only 1 awardee out of all graduates in the university each year.

Baidu Research Fellowship 2015-2016
10 out of more than 1,600 applicants from leading research institutions worldwide.

Microsoft Research PhD Fellowship in Asia 2015
13 out of 90 distinguished PhD candidates from 40 leading research institutions in Asia.

Hong Kong PhD Fellowship Scheme 2013-2017

Outstanding Undergraduate Thesis Award 2013
Top 0.5% across the university.

Meritorious Winner in Mathematical Contest In Modeling (MCM/ICM) 2012
International modeling contest. First prize.

National Scholarship 2011
Top 3%.

Academic Excellence Scholarship of Shanghai Jiao Tong University 2011
Top 3%.

Second Prize in National Undergraduate Mathematical Contest in Modeling 2011

PUBLICATIONS

Google Scholar Profile (Citation: >22,100)

REPRESENTATIVE PAPERS

[1] Yibin Wang*, Haizhou Shi*, Ligong Han, Dimitris N. Metaxas, **Hao Wang**. BLoB: Bayesian Low-Rank Adaptation by Backpropagation for Large Language Models. *Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 2024.*

[2] Hengyi Wang*, Shiwei Tan*, **Hao Wang**. Probabilistic Conceptual Explainers: Towards Trustworthy Conceptual Explanations for Vision Foundation Models. *Forty-First International Conference on Machine Learning (ICML), 2024.*

[3] Jingquan Yan, **Hao Wang**. Self-Interpretable Time Series Prediction with Counterfactual Explanations. *Fortieth International Conference on Machine Learning (ICML), 2023.* (Oral)

[4] Zihao Xu*, Guangyuan Hao*, Hao He, **Hao Wang**. Domain Indexing Variational Bayes: Interpretable Domain Index for Domain Adaptation. *Eleventh International Conference on Learning Representations (ICLR), 2023.* (Spotlight)

[5] Wanyu Lin, Hao Lan, **Hao Wang**, Baochun Li. OrphicX: A Causality-Inspired Latent Variable Model for Interpreting Graph Neural Networks. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.* (Oral) Best paper finalist 33 / 8161 = 0.4%.

[6] Yuzhe Yang, Yuan Yuan, Guo Zhang, **Hao Wang**, Ying-Cong Chen, Yingcheng Liu, Christopher G. Tarolli, Daniel Crepeau, Jan Bukartyk, Mithri R. Junna, Aleksandar Videnovic, Terry D. Ellis, Melissa C. Lipford, Ray Dorsey, Dina Katabi. Artificial Intelligence-Enabled Detection and Assessment of Parkinson's Disease Using Nocturnal Breathing Signals. *Nature Medicine, 2022*. Selected as one of the "Ten Notable Advances in 2022" by Nature Medicine.

[7] Mingmin Zhao*, Kreshnik Hoti*, **Hao Wang**, Aniruddh Raghu, Dina Katabi. Assessment of Medication Self-Administration Using Artificial Intelligence. *Nature Medicine, 2021*.

[8] **Hao Wang**, Naiyan Wang, Dit-Yan Yeung. Collaborative Deep Learning for Recommender Systems. *Twenty-First ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2015*. (Oral) ACM SIGKDD 2025 Test of Time Award. Most cited paper among all papers at KDD 2015.

[9] **Hao Wang**, Dit-Yan Yeung. Towards Bayesian Deep Learning: A Framework and Some Existing Methods. *IEEE Transaction on Knowledge and Data Engineering (TKDE), 28(12): 3395-3408, 2016*.

[10] Xingjian Shi, Zhourong Chen, **Hao Wang**, Dit-Yan Yeung, Wai-Kin Wong, Wang-Chun Woo. Convolutional LSTM Network: A Machine Learning Approach for Precipitation Nowcasting. *Twenty-Ninth Annual Conference on Neural Information Processing Systems (NIPS), 2015*.

CONFERENCE PAPERS

[11] Haizhou Shi*, Yibin Wang*, Ligong Han, Huan Zhang, **Hao Wang**. Training-Free Bayesianization for Low-Rank Adapters of Large Language Models. *Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS), 2025.*

[12] Ziyan Wang, Sizhe Wei, Xiaoming Huo, **Hao Wang**. PoGDiff: Product-of-Gaussians Diffusion Models for Imbalanced Text-to-Image Generation. *Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS), 2025.*

[13] Ran Li, **Hao Wang**, Chengzhi Mao. LARGO: Latent Adversarial Reflection through Gradient Optimization for Jailbreaking LLMs. *Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS), 2025.*

[14] Zhuowei Li, Haizhou Shi, Yunhe Gao, Di Liu, Zhenting Wang, Yuxiao Chen, Ting Liu, Long Zhao, **Hao Wang**, Dimitris Metaxas. The Hidden Life of Tokens: Reducing Hallucination of Large Vision-Language Models via Visual Information Steerings. *Forty-Second International Conference on Machine Learning (ICML), 2025.*

[15] Xinyue Xu, Yueying Hu, Hui Tang, Yi Qin, Lu Mi, **Hao Wang**, Xiaomeng Li. Concept-Based Unsupervised Domain Adaptation. *Forty-Second International Conference on Machine Learning (ICML), 2025.*

[16] Ziyan Wang, Xiaoming Huo, **Hao Wang**. Towards Domain Adaptive Neural Contextual Bandits. *Thirteenth International Conference on Learning Representations (ICLR), 2025.*

[17] Zhuowei Li, Zihao Xu, Ligong Han, Yunhe Gao, Song Wen, Di Liu, **Hao Wang**, Dimitris N. Metaxas. Implicit In-Context Learning. *Thirteenth International Conference on Learning Representations (ICLR), 2025.*

[18] Kalliopi Basioti, Pritish Sahu, Tony Qingze Liu, Zihao Xu, **Hao Wang**, Vladimir Pavlovic.. GenVP: Generating Visual Puzzles with Contrastive Hierarchical VAEs. *Thirteenth International Conference on Learning Representations (ICLR), 2025.*

[19] Wuwei Zhang, Ziyu Lu, Trung Le, **Hao Wang**, Uygar Sümbül, Eric Todd SheaBrown, Lu Mi. NetFormer: An Interpretable Model for Recovering Dynamical Connectivity in Neuronal Population Dynamics. *Thirteenth International Conference on Learning Representations (ICLR), 2025.* (Spotlight)

[20] Hongfu Liu, Hengguan Huang, **Hao Wang**, Xiangming Gu, Ye Wang. On Calibration of LLM-based Guard Models for Reliable Content Moderation. *Thirteenth International Conference on Learning Representations (ICLR), 2025.*

[21] Hengyi Wang, Haizhou Shi, Shiwei Tan, Weiyi Qin, Wenyuan Wang, Tunyu Zhang, Akshay Nambi, Tanuja Ganu, **Hao Wang**. Multimodal Needle in a Haystack: Benchmarking Long-Context Capability of Multimodal Large Language Models. *Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2025.* (Oral)

[22] Yibin Wang*, Haizhou Shi*, Ligong Han, Dimitris N. Metaxas, **Hao Wang**. BLoB: Bayesian Low-Rank Adaptation by Backpropagation for Large Language Models. *Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 2024.*

[23] Guang-Yuan Hao, Jiji Zhang, Biwei Huang, **Hao Wang**, Kun Zhang. Natural Counterfactuals With Necessary Backtracking. *Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), 2024.*

[24] Hengyi Wang, Shiwei Tan, Zhiqing Hong, Desheng Zhang, **Hao Wang**. Variational Language Concepts for Interpreting Foundation Language Models. *Findings of Empirical Methods in Natural Language Processing (EMNLP), 2024.*

[25] Hengyi Wang*, Shiwei Tan*, **Hao Wang**. Probabilistic Conceptual Explainers: Towards Trustworthy Conceptual Explanations for Vision Foundation Models. *Forty-First International Conference on Machine Learning (ICML), 2024.*

[26] Youlong Ding, Xueyang Wu, Yining meng, Yonggang Luo, **Hao Wang**, Weike Pan. Delving into Differentially Private Transformer. *Forty-First International Conference on Machine Learning (ICML), 2024.*

[27] Hengguan Huang, Songtao Wang, Hongfu Liu, **Hao Wang**, Ye Wang. Benchmarking Large Language Models on Communicative Medical Coaching: A Dataset and a Novel System. *Findings of Annual Conference of the Association for Computational Linguistics (ACL), 2024.*

[28] Mengke Zhang, Tianxing He, Tianle Wang, Lu Mi, Niloofar Mireshghallah, Binyi Chen, **Hao Wang**, Yulia Tsvetkov. LatticeGen: Hiding Generated Text in a Lattice for Privacy-Aware Large Language Model Generation on Cloud. *Findings of Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2024.*

[29] Chengzhi Mao, Carl Vondrick, **Hao Wang**, Junfeng Yang. Detecting Text from Large Language Models via Rewriting. *Twelfth International Conference on Learning Representations (ICLR), 2024.*

[30] Xinyue Xu, Yi Qin, Lu Mi, **Hao Wang**, Xiaomeng Li. Energy-Based Concept Bottleneck Models: Unifying Prediction, Concept Intervention, and Conditional Interpretations. *Twelfth International Conference on Learning Representations (ICLR), 2024.*

[31] Yong Lin, Fan Zhou, Lu Tan, Lintao Ma, Jianmeng Liu, Yansu He, Yuan Yuan, Yu Liu, James Y. Zhang, Yujiu Yang, **Hao Wang**. Continuous Invariance Learning. *Twelfth International Conference on Learning Representations (ICLR), 2024.*

[32] Guang-Yuan Hao, Hengguan Huang, Haotian Wang, Jie Gao, **Hao Wang**. Composite Active Learning: Towards Multi-Domain Active Learning with Theoretical Guarantees. *Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI), 2024*.

[33] Ziyan Wang, **Hao Wang**. Variational Imbalanced Regression: Fair Uncertainty Quantification via Probabilistic Smoothing. *Thirty-Seventh Annual Conference on Neural Information Processing Systems (NeurIPS), 2023.*

[34] Haizhou Shi, **Hao Wang**. A Unified Approach to Domain Incremental Learning with Memory: Theory and Algorithm. *Thirty-Seventh Annual Conference on Neural Information Processing Systems (NeurIPS), 2023.*

[35] Jingquan Yan, **Hao Wang**. Self-Interpretable Time Series Prediction with Counterfactual Explanations. *Fortieth International Conference on Machine Learning (ICML), 2023.* (Oral)

[36] Tianyi Liu*, Zihao Xu*, Hao He, Guang-Yuan Hao, Guang-He Lee, **Hao Wang**. Taxonomy-Structured Domain Adaptation. *Fortieth International Conference on Machine Learning (ICML), 2023.*

[37] Chengzhi Mao, Lingyu Zhang, Abhishek Vaibhav Joshi, Junfeng Yang, **Hao Wang**, Carl Vondrick. Robust Perception through Equivariance. *Fortieth International Conference on Machine Learning (ICML), 2023.*

[38] Hua Yan, **Hao Wang**, Desheng Zhang, Yu Yang. Identifying Regional Driving Risks via Transductive Cross-City Transfer Learning under Negative Transfer. *The Conference on Information and Knowledge Management (CIKM), 2023.*

[39] Landscape Learning for Neural Network Inversion. Ruoshi Liu, Chengzhi Mao, Purva Tendulkar, **Hao Wang**, Carl Vondrick. *International Conference on Computer Vision (ICCV), 2023.*

[40] Zihao Xu*, Guangyuan Hao*, Hao He, **Hao Wang**. Domain Indexing Variational Bayes: Interpretable Domain Index for Domain Adaptation. *Eleventh International Conference on Learning Representations (ICLR), 2023.* (Spotlight)

[41] Xueyang Wu*, Hengguan Huang*, Youlong Ding, **Hao Wang**, Ye Wang, Qian Xu. FedNP: Towards Non-IID Federated Learning via Federated Neural Propagation. *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI), 2023*.

[42] Jianchao Ji, Zelong Li, Shuyuan Xu, Max Xiong, Juntao Tan, Yingqiang Ge, **Hao Wang**, Yongfeng Zhang. Counterfactual Collaborative Reasoning. *Sixteenth ACM International Conference on Web Search and Data Mining (WSDM), 2023*.

[43] Hengguan Huang, Xiangming Gu, **Hao Wang**, Chang Xiao, Hongfu Liu, Ye Wang. Extrapolative Continuous-Time Bayesian Neural Network for Predictive Streaming Domain Adaptation. *Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS), 2022*.

[44] Zhihan Gao, Xingjian Shi, **Hao Wang**, Yi Zhu, Yuyang Wang, Mu Li, Dit-Yan Yeung. Earthformer: Exploring Space-Time Transformers for Earth System Forecasting. *Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS), 2022*.

[45] Xiaoyong Jin, Youngsuk Park, Danielle Maddix, **Hao Wang**, Yuyang Wang. Domain Adaptation for Time Series Forecasting via Attention Sharing. *Thirty-Ninth International Conference on Machine Learning (ICML), 2022.*

[46] Yuzhe Yang, **Hao Wang**, Dina Katabi. On Multi-Domain Long-Tailed Recognition, Imbalanced Domain Generalization and Beyond. *Seventeenth European Conference on Computer Vision (ECCV), 2022.*

[47] Song Wen, **Hao Wang**, Dimitris Metaxas. Social ODE: Multi-Agent Trajectory Forecasting with Neural Ordinary Differential Equations. *Seventeenth European Conference on Computer Vision (ECCV), 2022.*

[48] Wenge Liu, Yi Cheng, **Hao Wang**, Jianheng Tang, Yafei Liu, Ruihui Zhao, Wenjie Li, Yefeng Zheng, Xiaodan Liang. "My Nose is Running." "Are You Also Coughing?": Building a Medical Diagnosis Agent with Interpretable Inquiry Logics. *Proceedings of the Twenty-Third International Joint Conference on Artificial Intelligence (IJCAI), 2022.*

[49] Chengzhi Mao, James Wang, Kevin Xia, **Hao Wang**, Junfeng Yang, Elias Bareinboim, Carl Vondrick. Causal Transportability for Visual Recognition. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.*

[50] Wanyu Lin, Hao Lan, **Hao Wang**, Baochun Li. OrphicX: A Causality-Inspired Latent Variable Model for Interpreting Graph Neural Networks. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.* (Oral) Best paper finalist 33 / 8161 = 0.4%.

[51] Yong Lin, Hanze Dong, **Hao Wang**, Tong Zhang. Bayesian Invariant Risk Minimization. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.* (Oral)

[52] Zihao Xu, Hao He, Guang-He Lee, Yuyang Wang, **Hao Wang**. Graph-Relational Domain Adaptation. *Tenth International Conference on Learning Representations (ICLR), 2022.*

[53] **Hao Wang**, Yifei Ma, Hao Ding, Yuyang Wang. Context Uncertainty in Contextual Bandits with Applications to Recommender Systems. *Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI), 2022.*

[54] Lu Mi, **Hao Wang**, Yonglong Tian, Hao He, Nir Shavit. Training-Free Uncertainty Estimation for Dense Regression: Sensitivity as a Surrogate. *Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI), 2022.*

[55] Chengzhi Mao, Mia Chiquier, **Hao Wang**, Junfeng Yang, Carl Vondrick. Adversarial Attacks Are Reversible with Natural Supervision. *International Conference on Computer Vision (ICCV), 2021.*

[56] Songhua Liu, Tianwei Lin, Dongliang He, Fu Li, Ruifeng Deng, Xin Li, Errui Ding, **Hao Wang**. Paint Transformer: Feed Forward Neural Painting with Stroke Prediction. *International Conference on Computer Vision (ICCV), 2021.* (Oral)

[57] Hengguan Huang, Hongfu Liu, **Hao Wang**, Chang Xiao, Ye Wang. STRODE: Stochastic Boundary Ordinary Differential Equation. *Thirty-Eighth International Conference on Machine Learning (ICML), 2021.*

[58] Shantanu Gupta, **Hao Wang**, Zachary Lipton, Yuyang Wang. Correcting Exposure Bias for Link Recommendation. *Thirty-Eighth International Conference on Machine Learning (ICML), 2021.*

[59] Yuzhe Yang, Kaiwen Zha, Yingcong Chen, **Hao Wang**, Dina Katabi. Delving into Deep Imbalanced Regression. *Thirty-Eighth International Conference on Machine Learning (ICML), 2021.* (Oral)

[60] Chengzhi Mao, Augustine Cha*, Amogh Gupta*, **Hao Wang**, Junfeng Yang, Carl Vondrick. Generative Interventions for Causal Learning. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.*

[61] **Hao Wang***, Hao He*, Dina Katabi. Continuously Indexed Domain Adaptation. *Thirty-Seventh International Conference on Machine Learning (ICML), 2020.* (Oral)

[62] Hengguan Huang, Fuzhao Xue, **Hao Wang**, Ye Wang. Deep Graph Random Process for Relational-Thinking-Based Speech Recognition. *Thirty-Seventh International Conference on Machine Learning (ICML), 2020*. (Oral)

[63] Shichao Yue, Yuzhe Yang, **Hao Wang**, Hariharan Rahul, Dina Katabi. BodyCompass: Monitoring Sleep Posture with Wireless Signals. *ACM International Joint Conference on Pervasive and Ubiquitous Computing (Ubicomp), 2020*.

[64] Lu Mi, **Hao Wang**, Yaron Meirovitch, Richard Schalek, Srinivas Turaga, Jeff Lichtman, Samuel Aravinthan, Nir Shavit. Learning Guided Electron Microscopy with Active Acquisition. *Medical Image Computing and Computer Assisted Interventions (MICCAI), 2020*.

[65] Michael C. Kampffmeyer, Yinbo Chen, Xiaodan Liang, **Hao Wang**, Yujia Zhang, Eric Xing. Rethinking Knowledge Graph Propagation for Zero-Shot Learning. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019*.

[66] Hao He, **Hao Wang**, Guang-He Lee, Yonglong Tian. ProbGAN: Towards Probabilistic GAN with Theoretical Guarantees. *Seventh International Conference on Learning Representations (ICLR), 2019*.

[67] **Hao Wang**, Chengzhi Mao, Hao He, Mingmin Zhao, Tommi Jaakkola, Dina Katabi. Bidirectional Inference Networks: A Class of Deep Bayesian Networks for Health Profiling. *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI), 2019*.

[68] Hengguang Huang, **Hao Wang**, Brian Mak. Recurrent Poisson Process Unit for Speech Recognition. *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI), 2019*.

[69] Shichao Yue, Hao He, **Hao Wang**, Hariharan Rahul, Dina Katabi. Extracting Multi-Person Respiration from Entangled RF Signals. *ACM International Joint Conference on Pervasive and Ubiquitous Computing (Ubicomp), 2018*.

[70] Xingjian Shi, Zhihan Gao, Leonard Lausen, **Hao Wang**, Dit-Yan Yeung, Wai-Kin Wong, Wang-Chun Woo. Deep Learning for Precipitation Nowcasting: A Benchmark and a New Model. *Thirty-First Annual Conference on Neural Information Processing Systems (NIPS), 2017*. (Spotlight)

[71] **Hao Wang**, Xingjian Shi, Dit-Yan Yeung. Relational Deep Learning: A Deep Latent Variable Model for Link Prediction. *Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017*. (Oral)

[72] **Hao Wang**, Xingjian Shi, Dit-Yan Yeung. Natural-Parameter Networks: A Class of Probabilistic Neural Networks. *Thirtieth Annual Conference on Neural Information Processing Systems (NIPS), 2016*.

[73] **Hao Wang**, Xingjian Shi, Dit-Yan Yeung. Collaborative Recurrent Autoencoder: Recommend while Learning to Fill in the Blanks. *Thirtieth Annual Conference on Neural Information Processing Systems (NIPS), 2016*.

[74] Xingjian Shi, Zhourong Chen, **Hao Wang**, Dit-Yan Yeung, Wai-Kin Wong, Wang-Chun Woo. Convolutional LSTM Network: A Machine Learning Approach for Precipitation Nowcasting. *Twenty-Ninth Annual Conference on Neural Information Processing Systems (NIPS), 2015*.

[75] **Hao Wang**, Naiyan Wang, Dit-Yan Yeung. Collaborative Deep Learning for Recommender Systems. *Twenty-First ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2015*. (Oral)
ACM SIGKDD 2025 Test of Time Award. Most cited paper among all papers at KDD 2015.

[76] **Hao Wang**, Xingjian Shi, Dit-Yan Yeung. Relational Stacked Denoising Autoencoder for Tag Recommendation. *Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI), 2015*.

[77] **Hao Wang**, Wu-Jun Li. Online Egocentric Models for Citation Networks. *Twenty-Third International Joint Conference on Artificial Intelligence (IJCAI), 2013*.

[78] **Hao Wang**, Binyi Chen, Wu-Jun Li. Collaborative Topic Regression with Social Regularization for Tag Recommendation. *Twenty-Third International Joint Conference on Artificial Intelligence (IJCAI), 2013*.

JOURNAL ARTICLES

[79] Jun Wen, Sihang Zeng, Clara-Lea Bonzel, Shilpa Kobren, Jiangchuan Du, Yi Chai, **Hao Wang**, Meng Zhu, Siwei Chen, Fangwei Leng , Harrison Zhang , Katherine Liao, Kelly Cho , Isaac Kohane, Marinka Zitnik, Alexandre Pereira, Jun Liu, Tianxi Cai. Phenotypic Prediction of Missense Variants via Deep Contrastive Learning. *Nature Biomedical Engineering, 2025*.

[80] Yuzhe Yang, Yuan Yuan, Guo Zhang, **Hao Wang**, Ying-Cong Chen, Yingcheng Liu, Christopher G. Tarolli, Daniel Crepeau, Jan Bukartyk, Mithri R. Junna, Aleksandar Videnovic, Terry D. Ellis, Melissa C. Lipford, Ray Dorsey, Dina Katabi. Artificial Intelligence-Enabled Detection and Assessment of Parkinson's Disease Using Nocturnal Breathing Signals. *Nature Medicine, 2022*. Selected as one of the "Ten Notable Advances in 2022" by Nature Medicine.

[81] Mingmin Zhao*, Kreshnik Hoti*, **Hao Wang**, Aniruddh Raghu, Dina Katabi. Assessment of Medication Self-Administration Using Artificial Intelligence. *Nature Medicine, 2021*.

[82] **Hao Wang**, Dit-Yan Yeung. A Survey on Bayesian Deep Learning. *ACM Computing Surveys (CSUR), 2020*.

[83] **Hao Wang**, Dit-Yan Yeung. Towards Bayesian Deep Learning: A Framework and Some Existing Methods. *IEEE Transaction on Knowledge and Data Engineering (TKDE), 28(12): 3395-3408, 2016*.

[84] **Hao Wang**, Wu-Jun Li. Relational Collaborative Topic Regression for Recommender Systems. *IEEE Transactions on Knowledge and Data Engineering (TKDE), 27(5): 1343-1355, 2015*.

BOOK CHAPTERS

[85] Zhihan Gao, Xingjian Shi, **Hao Wang**, Dit-Yan Yeung, Wang-Chun Woo, and Wai-Kin Wong. Deep Learning and the Weather Forecasting Problem – Precipitation Nowcasting. *Deep learning for the Earth Sciences: A Comprehensive Approach to Remote Sensing, Climate Science and Geosciences, G. Camps-Valls, D. Tuia, X.X. Zhu, and M. Reichstein (eds.), Wiley & Sons, 2021*.

PREPRINTS AND WORKSHOP PAPERS

[86] Haizhou Shi, Zihao Xu, Hengyi Wang, Weiyi Qin, Wenyuan Wang, Yibin Wang, **Hao Wang**. Continual Learning of Large Language Models: A Comprehensive Survey. *Preprint on arXiv (https://arxiv.org/abs/2404.16789)*.

[87] Yuhui Zhang, Hao Ding, Zeren Shui, Yifei Ma, James Zou, Anoop Deoras, **Hao Wang**. Language Models as Recommender Systems: Evaluations and Limitations. *Annual Conference on Neural Information Processing Systems (NeurIPS) 2021 ICBINB Workshop*.

[88] Hao He, Yuzhe Yang, **Hao Wang**. Domain Adaptation with Factorizable Joint Shift. *International Conference on Machine Learning (ICML) 2021 Workshop on Uncertainty and Robustness in Deep Learning* .

[89] Lu Mi, **Hao Wang**, Yonglong Tian, Nir Shavit. Training-Free Uncertainty Estimation for Dense Regression: Sensitivity as a Surrogate. *International Conference on Machine Learning (ICML) 2021 Workshop on Uncertainty and Robustness in Deep Learning* .

[90] Yuhao Wang, Vlado Menkovski, **Hao Wang**, Xin Du, Mykola Pechenizkiy. Causal Discovery from Incomplete Data: A Deep Learning Approach. *AAAI Conference on Artificial Intelligence (AAAI) 2020 Workshop on Statistical Relational AI (StarAI)*.

[91] Hao He, **Hao Wang**, Guang-He Lee, Yonglong Tian. Bayesian Modelling and Monte Carlo Inference for GAN. *International Conference on Machine Learning (ICML) 2018 Workshop on Theoretical Foundations and Applications of Deep Generative Models*.

[92] **Hao Wang**, Dit-Yan Yeung. Towards Bayesian Deep Learning: A Survey. *Preprint on arXiv (https://arxiv.org/abs/1604.01662)*.

GRANTS & SPONSORSHIP

NSF Grant (as Co-PI) on Trustworthy Medical Foundation Models: $299,942	2025
NSF CAREER Award on "Robustify AI via Bayesian Deep Learning": $516,778	2024
Microsoft Research AI & Society Fellowship: $65,000	2024
NIH R01 Award (as sole PI) on Counterfactual Explanations for Cancer Diagnosis: $1,159,331	2024

National Artificial Intelligence Research Resource (NAIRR) Award	2024
Center for AI Safety Compute Cluster Grant	2024
Meta Faculty Research Award: $100,000	2024
Nokia Faculty Research Award: $52,800	2024
Google Cloud Research Credit Award: $5,000	2022
NSF Grant (as PI) “Enabling Interpretable AI via Bayesian Deep Learning”: $499,926	2021
Amazon Research Award: $108,000	2020

STUDENTS

PH.D. STUDENTS

- Zihao Xu (Rutgers, 2021-)
- Hengyi Wang (Rutgers, 2021-)
- Jingquan Yan (Rutgers, 2021-)
- Haizhou Shi (Rutgers, 2022-)
- Yi Wang (Rutgers, 2022-)
- Shiwei Tan (Rutgers, 2023-)
- Weiyi Qin (Rutgers, 2023-)
- Yusong Zhao (Rutgers, 2025-)
- Zihao Zhao (Rutgers, 2025-)

MASTER STUDENTS

- Vishal Venkataramani (Rutgers)
- Christo Matthew (Rutgers)
- Aryan Dande (Rutgers)
- Xingeng Zhang (Rutgers)
- Snigdha Mishra (Rutgers)
- Qipan Xu (Rutgers)
- Wentian Wang (Remote Visiting from USC)

UNDERGRADUATE STUDENTS

- Hanyi Mao (Remote Visiting from Peking University)
- Youran Ye (Remote Visiting from Fudan University)
- Yibin Wang (Remote Visiting from HUST)
- Wenyuan Wang (Remote Visiting from WHU)
- Yang Xu (Remote Visiting from Zhejiang University)
- Tianyi Liu (Rutgers)
- Rohit Amarnath (Rutgers)
- Sarthak Jain (Rutgers)
- Harshil Vejendla (Rutgers)

ALUMNI

- Ziyan Wang (Visiting Master Student from UMich, now PhD student at GaTech)
- Walter Wang (Visiting Master Student from Duke, now PhD student at UT Austin)
- Tunyu Zhang (Visiting Undergraduate Student from USTC, now PhD student at Rutgers)
- Thea Xu (Visiting Undergraduate Student from ANU, now PhD student at HKUST)
- Zhongren Chen (Visiting Master Student from Stanford, now PhD student at Yale)
- Shantanu Gupta (Visiting Master Student from CMU, now PhD student at CMU)
- Shengyi Jiang (Visiting Master Student from Nanjing University, now PhD student at HKU)
- Wuwei Zhang (Visiting Master Student from UW, now PhD student at Princeton)
- Guang-Yuan Hao (Visiting Master Student from HKUST, now PhD student at Cornell)
- Dhaivat Patel (Rutgers Master Student, now SDE at Amazon)
- Anamika Lochab (Rutgers Master Student, now PhD student at Purdue)
- Shreya Venugopal (Rutgers Master Student, now PhD student at INRIA)

SERVICE

ORGANIZATION

- Organization Committee of IJCAI 2025; Workshop Chair
- Organizer of ICML 2024 Workshop on Foundation Models in the Wild
- Organizer of CVPR 2023 Workshop on New Frontiers in Visual Language Reasoning: Compositionality, Prompts and Causality
- Organizer of ICLR 2022 Workshop on PAIR2Struct: Privacy, Accountability, Interpretability, Robustness, Reasoning on Structured Data
- Organizer of ICML 2019 Workshop on Learning and Reasoning with Graph-Structured Representations
- Organizer of CVPR 2019 Workshop on Causal, Explainable and Universal Medical Visual Diagnosis

AC/PC/REVIEWER

- Area Chair, ICLR, CVPR 2026
- Area Chair, ICML, ICLR, NeurIPS 2025
- Action Editor / Area Chair, ACL Rolling Review (ACL, EMNLP, NAACL) 2025
- Senior Program Committee for IJCAI 2025
- Area Chair, NeurIPS 2024
- Action Editor / Area Chair, ACL Rolling Review (ACL, EMNLP, NAACL) 2024
- Senior Program Committee for IJCAI 2024
- Reviewer for ICLR 2024
- Program Committee for AAAI, KDD 2024
- Founding Senior Associate Editor for ACM Transactions on Probabilistic Machine Learning 2023
- Action Editor / Area Chair, ACL Rolling Review 2023
- Area Chair / Senior Program Committee for ICCV, IJCAI 2023
- Program Committee for KDD 2023
- Reviewer for Nature, ICLR, CVPR, NeurIPS, TMLR 2023
- Senior Program Committee for AAAI, IJCAI 2022
- Program Committee for KDD 2022
- Reviewer for NIPS, ICML, ICLR, CVPR 2022
- Senior Program Committee for AAAI, IJCAI 2021
- Reviewer for ICML, AISTATS, CVPR, ICLR 2021
- Senior Program Committee for IJCAI 2020
- Reviewer for Nature, NIPS, ICML, CVPR, ICCV, AAAI, IJCAI, ICLR, TPAMI, TSP, TKDE 2020
- Program Committee for AAAI, IJCAI 2019
- Reviewer for NIPS, ICML, CVPR, ICCV, AAAI, IJCAI, ICLR, TKDE, TMM 2019
- Program Committee for TADGM@ICML 2018
- Reviewer for NIPS, Ubicomp, TKDE, IJCV, TNNLS, GRSL 2018
- Reviewer for AAAI, TKDE, IJCV, TNNLS 2017
- Reviewer for NIPS, TKDE 2016
- Program Committee for IJCAI 2015
- Reviewer for CVPR, IJCAI, TKDE, TNNLS 2015
- Reviewer for SDM 2014

PANEL

- NIH Review Panelist 2025
- Proposal Review Panel for National Science Center, Poland 2025
- U.S. Department of Homeland Security Proposal Review Panelist 2024
- NSF Review Panelist 2024
- NSF Review Panelist 2023
- Dutch Research Council (National Research Council of the Netherlands) Proposal Review Panel 2022
- NSF Review Panelist 2021
- Microsoft Faculty Fellowship University Internal Review Panel 2021
- Google PhD Fellowship Internal Review Panel 2021

THESIS/QUAL COMMITTEES

- PhD Qual Committee for Rutgers CS Student Wenzheng Zhang 2025
- PhD Qual Committee for Rutgers CS Student Qinchen Yang 2025
- PhD Qual Committee for Rutgers CS Student Xinyue Feng 2025

- PhD Qual Committee for Rutgers MAE Student Rahul Sharma 2024
- PhD Thesis Committee for Rutgers CS Student Zelong Li 2024
- PhD Thesis Committee for Rutgers CS Student Jiatong Li 2024
- PhD Thesis Committee for Rutgers CS Student Jindong Jiang 2024
- PhD Thesis Committee for Rutgers CS Student Gautam Singh 2024
- PhD Thesis Committee for Rutgers CS Student Wenyue Hua 2024
- PhD Thesis Committee for Rutgers CS Student Jianchao Ji 2024
- PhD Thesis Committee for Rutgers CS Student Ligong Han 2024
- PhD Thesis Committee for Rutgers CS Student Fei Deng 2024
- External PhD Thesis Committee for ETH Zurich CS Student Janis Postels 2024
- PhD Thesis Committee for Rutgers CS Student Shuyuan Xu 2024
- PhD Thesis Committee for Rutgers CS Student Yunqi Li 2024
- PhD Thesis Committee for Rutgers CS Student Runhui Wang 2024
- PhD Qual Committee for Rutgers CS Student Harishankar Vishwanathan 2023
- PhD Qual Committee for Rutgers CS Student Chuxu Song 2023
- PhD Qual Committee for Rutgers CS Student Yuequn Zhang 2023
- PhD Qual Committee for Rutgers CS Student Yunhe Gao 2023
- PhD Qual Committee for Rutgers CS Student Song Wen 2023
- External PhD Thesis Committee for Columbia CS Student Chengzhi Mao 2023
- PhD Thesis Committee for Rutgers CS Student Yuting Wang 2023
- PhD Thesis Committee for Rutgers CS Student Ananya Jana 2023
- PhD Qual Committee for Rutgers CS Student Xiaoxiao He 2023
- PhD Qual Committee for Rutgers CS Student Wenjun Lyu 2023
- PhD Qual Committee for Rutgers CS Student Meng Yu 2023
- PhD Qual Committee for Rutgers CS Student Jianchao Ji 2023
- PhD Qual Committee for Rutgers CS Student Wenyue Hua 2023
- PhD Qual Committee for Rutgers CS Student Chang Chen 2023
- PhD Qual Committee for Rutgers CS Student Jian Zhang 2023
- Master Thesis Committee for Rutgers CS Student Monaal Sanghvi 2022
- Master Thesis Committee for Rutgers CS Student Dhaivat Patel 2022
- Master Thesis Committee for Rutgers CS Student Yunqi Li 2022
- Master Thesis Committee for Rutgers CS Student Paven Kumar Velaga 2022
- PhD Thesis Committee for Rutgers CS Student Shijie Geng 2022
- PhD Thesis Committee for Rutgers CS Student Shuchang Liu 2022
- PhD Qual Committee for Rutgers CS Student Runhui Wang 2022
- PhD Qual Committee for Rutgers CS Student Wenjia Zhang 2022
- PhD Qual Committee for Rutgers CS Student Shuyuan Xu 2022
- PhD Qual Committee for Rutgers CS Student Kalliopi Basioti 2022
- PhD Qual Committee for Rutgers CS Student Jingdong Jiang 2022
- PhD Qual Committee for Rutgers CS Student Yuxiao Chen 2022
- PhD Qual Committee for Rutgers CS Student Fei Deng 2021
- PhD Qual Committee for Rutgers CS Student Gautam Singh 2021
- PhD Qual Committee for Rutgers CS Student Tengfei Li 2021
- PhD Thesis Committee for Rutgers CS Student Long Zhao 2021
- PhD Thesis Committee for Rutgers CS Student Haotian Wang 2021
- PhD Thesis Committee for Rutgers ECE Student Yanyi Zhang 2021
- PhD Thesis Committee for Rutgers CS Student Zuohui Fu 2021
- PhD Thesis Committee for Rutgers CS Student Yu Yang 2021
- PhD Qual Committee for Rutgers CS Student Yunqi Li 2021
- PhD Qual Committee for Rutgers CS Student David Pham 2021
- PhD Thesis Committee for Rutgers CS Student Zhiqiang Tang 2021
- PhD Thesis Committee for Rutgers CS Student Hanxiong Chen 2021
- PhD Thesis Committee for Rutgers CS Student Hui Qu 2021
- PhD Thesis Committee for Rutgers CS Student Yu Tian 2021
- PhD Qual Committee for Rutgers CS Student Shijie Geng 2020