Sharon Yixuan Li

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		Email	sharonli@cs.wisc.edu
Website	http://pages.cs.wisc.edu/ sharonli/	**Google citation**	13,000 (as of February 2024)

Academic Appointment

Aug. 2020 - Current **Assistant Professor**
University of Wisconsin - Madison, Department of Computer Sciences

Aug. 2019 - Aug. 2020 **Postdoctoral Research Fellow**
Stanford University, Department of Computer Science

Education

Sep 2013 - Dec 2017 **Doctor of Philosophy**
Cornell University
Advisor: *John E. Hopcroft* Thesis committee members: *Kilian Q. Weinberger, Thorsten Joachims*

Sep 2009 - Jun 2013 **Bachelor of Engineering with Honors**
Shanghai Jiaotong University
Honors: National Scholarship (2 years); Academic Excellence Scholarship (3 years)

Selected Awards and Honors

2023 **MIT TR35 "Innovator of the Year"**
Awarded to 1 recipent globally who received the highest overall score from MIT TR35 judges

2023 **NSF CAREER Award**

2022 **AFOSR Young Investigator Program (YIP) Award**
Awarded to 58 early-career faculty nationwide

2022 **NeurIPS Outstanding Paper Award**
Awarded to 13 papers out of 10,411 submissions

2022 **Amazon Research Award**

2022 **ICLR Outstanding Paper Honorable Mention**
Awarded to 10 out of 3391 papers

2011 & 2022 **American Family Data Science Research Awards**

2021 **Google-Initiated Focused Research Award**

2021 **Facebook Faculty Research Award**

2021 **JP Morgan Chase Early-career Faculty Award**

2021 **Madison Teaching and Learning Excellence Fellowship (MTLE)**

2020 **Forbes 30Under30 in Science**
Awarded to 30 young scientists worldwide

2017 **Stanford Rising Stars in EECS**
Awarded to 70 EECS graduate and postdoctoral women

2017 **ACM-W Scholarship**

2013 **Graduate School Fellowship, Cornell University**

2011 & 2012 **National Scholarship**
Highest honor to the top 3% undergrad students nationwide

Publications (after joining UW-Madison)

83. Kaiping Chen, Anqi Shao, Jirayu Burapacheep, and Yixuan Li
Conversational AI and Equity: Assessing GPT-3's Communication with Diverse Social Groups on Contentious Topics
Nature Scientific Reports, 2024

82. Xuefeng Du*, Zhen Fang*, Ilias Diakonikolas, Yixuan Li
How Does Unlabeled Data Provably Help Out-of-Distribution Detection?
In Proceedings of the 12th International Conference on Learning Representations (**ICLR**), 2024
(* equal contribution)

81. Haoyue Bai*, Yifei Ming*, Julian Katz-Samuels, Yixuan Li
HYPO: Hyperspherical Out-of-Distribution Generalization
In Proceedings of the 12th International Conference on Learning Representations (**ICLR**), 2024
(* equal contribution)

80. Maxim Khanov*, Jirayu Burapacheep*, Yixuan Li
ARGS: Alignment as Reward-Guided Search
In Proceedings of the 12th International Conference on Learning Representations (**ICLR**), 2024
(* equal contribution)

79. Bo Peng, Yadan Luo, Yonggang Zhang, Yixuan Li, Zhen Fang
ConjNorm: Tractable Density Estimation for Out-of-Distribution Detection
In Proceedings of the 12th International Conference on Learning Representations (**ICLR**), 2024

78. Haobo Wang, Ruixuan Xiao, Yixuan Li, Lei Feng, Gang Niu, Gang Chen, Junbo Zhao
PiCO+: Contrastive Label Disambiguation for Robust Partial Label Learning
IEEE Transactions on Pattern Analysis and Machine Inteligence (**TPAMI**), 2024

77. Ruixuan Xiao, Lei Feng, Kai Tang, Junbo Zhao, Yixuan Li, Gang Chen, Haobo Wang
Targeted Representation Alignment for Open-World Semi-Supervised Learning
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024

76. Soumya Suvra Ghosal*, Yiyou Sun*, Yixuan Li
How to Overcome Curse-of-dimensionality for OOD Detection?
In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2024
(* equal contribution)

75. Yiyou Sun, Zhenmei Shi, and Yixuan Li
A Graph-Theoretic Framework for Understanding Open-World Semi-Supervised Learning
Advances in Neural Information Processing Systems (**NeurIPS**), 2023
Spotlight

74. Xuefeng Du, Yiyou Sun, Jerry Zhu, Yixuan Li
Dream the Impossible: Outlier Imagination with Diffusion Models
Advances in Neural Information Processing Systems (**NeurIPS**), 2023

73. Qizhou Wang, Zhen Fang, Yonggang Zhang, Feng Liu, Yixuan Li, and Bo Han
Learning to Augment Distributions for Out-of-distribution Detection
Advances in Neural Information Processing Systems (**NeurIPS**), 2023

72. Jingyang Zhang, Jingkang Yang, Pengyun Wang, Haoqi Wang, Yueqian Lin, Haoran Zhang, Yiyou Sun, Xuefeng Du, Kaiyang Zhou, Wayne Zhang, Yixuan Li, Ziwei Liu, Yiran Chen, Hai Li
OpenOOD v1.5: Enhanced Benchmark for Out-of-Distribution Detection
Advances in Neural Information Processing Systems (**NeurIPS**), DistShift Workshop, 2023

71. Jiuxiang Gu*, Yifei Ming*, Yi Zhou, Jason Kuen, Vlad Morariu, Anqi Liu, Yixuan Li, Tong Sun and Ani Nenkova
A Critical Analysis of Out-of-Distribution Detection for Document Understanding
In Empirical Methods in Natural Language Processing (**EMNLP-Findings**), 2023
(* equal contribution)

70. Haoyue Bai, Gregory Canal, Xuefeng Du, Jeongyeol Kwon, Robert D Nowak, Yixuan Li
Feed Two Birds with One Scone: Exploiting Wild Data for Both Out-of-Distribution Generalization and Detection
In Proceedings of International Conference on Machine Learning (**ICML**), 2023

69. Hongxin Wei, Huiping Zhuang, Renchunzi Xie, Lei Feng, Gang Niu, Bo An, and Yixuan Li
Mitigating Memorization of Noisy Labels by Clipping the Model Prediction
In Proceedings of International Conference on Machine Learning (**ICML**), 2023

68. Yiyou Sun, Zhenmei Shi, Yingyu Liang, Yixuan Li
When and How Does Known Class Help Discover Unknown Ones? Provable Understandings Through Spectral Analysis
In Proceedings of International Conference on Machine Learning (**ICML**), 2023

67. Yiyou Sun, Yaojie Liu, Xiaoming Liu, Yixuan Li, Wen-Sheng Chu
Rethinking Domain Generalization for Face Anti-spoofing: Separability and Alignment
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023

66. Yifei Ming, Yiyou Sun, Ousmane Dia and Yixuan Li
How to Exploit Hyperspherical Embeddings for Out-of-Distribution Detection?
In Proceedings of the 11th International Conference on Learning Representations (**ICLR**), 2023

65. Leitian Tao, Xuefeng Du, Xiaojin Zhu and Yixuan Li
Non-parametric Outlier Synthesis
In Proceedings of the 11th International Conference on Learning Representations (**ICLR**), 2023

64. Yifei Ming and Yixuan Li
How Does Fine-Tuning Impact Out-of-Distribution Detection for Large Vision-Language Models?
International Journal of Computer Vision (**IJCV**), 2023

63. Soumya Suvra Ghosal and Yixuan Li
Are Vision Transformers Robust to Spurious Correlations?
International Journal of Computer Vision (**IJCV**), 2023

62. Rheeya Uppaal, Junjie Hu, and Yixuan Li
Is Fine-tuning Needed? Pre-trained Language Models Are Near Perfect for Out-of-Domain Detection
In Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (**ACL**), 2023

61. Xuefeng Du, Tian Bian, Yu Rong, Bo Han, Tongliang Liu, Tingyang Xu, Wenbing Huang, Yixuan Li, Junzhou Huang

Noise-robust Graph Learning by Estimating and Leveraging Pairwise Interactions
Transactions on Machine Learning Research (**TMLR**), 2023

60. Yiyou Sun and Yixuan Li
OpenCon: Open-world Contrastive Learning
Transactions on Machine Learning Research (**TMLR**), 2023

59. Hao Lang, Yinhe Zheng, Yixuan Li, Jian SUN, Fei Huang, Luo Si, Yongbin Li
A Survey on Out-of-Distribution Detection in NLP
Transactions on Machine Learning Research (**TMLR**), 2023

58. Soumya Suvra Ghosal and Yixuan Li
Distributionally Robust Optimization with Probabilistic Group
In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2023

57. Mu Cai and Yixuan Li
Out-of-distribution Detection via Frequency-regularized Generative Models
In Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2023
Spotlight

56. Radhika Dua, Seongjun Yang, Yixuan Li, and Edward Choi
Task Agnostic and Post-hoc Unseen Distribution Detection
In Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2023

55. Tingru Cui, Yixuan Li, Kaiping Chen, James Bailey, and Feng Liu
Designing Fair AI Systems: Exploring the Interaction of Explainable AI and Task Objectivity on Users' Fairness Perception
In Proceedings of Pacific Asia Conference on Information Systems (**PACIS**), 2023

54. Yifei Ming, Ziyang Cai, Jiuxiang Gu, Yiyou Sun, Wei Li, and Yixuan Li
Delving into Out-of-Distribution Detection with Vision-Language Representations
Advances in Neural Information Processing Systems (**NeurIPS**), 2022

53. Xuefeng Du, Gabriel Gozum, Yifei Ming and Yixuan Li
SIREN: Shaping Representations for Detecting Out-of-Distribution Objects
Advances in Neural Information Processing Systems (**NeurIPS**), 2022

52. Zhen Fang, Yixuan Li, Jie Lu, Jiahua Dong, Bo Han, Feng Liu
Is Out-of-distribution Detection Learnable?
Advances in Neural Information Processing Systems (**NeurIPS**), 2022
Outstanding Paper Award (top 13 in 10411 submissions)

51. Haobo Wang, Mingxuan Xia, Yixuan Li, Yuren Mao, Lei Feng, Gang Chen, Junbo Zhao
SoLar: Sinkhorn Label Refinery for Imbalanced Partial-Label Learning
Advances in Neural Information Processing Systems (**NeurIPS**), 2022

50. Jingkang Yang, Pengyun Wang, Dejian Zou, Zitang Zhou, Kunyuan Ding, Wenxuan Peng, Haoqi Wang, Guangyao Chen, Bo Li, Yiyou Sun, Xuefeng Du, Kaiyang Zhou, Wayne Zhang, Dan Hendrycks, Yixuan Li, Ziwei Liu
OpenOOD: Benchmarking Generalized Out-of-Distribution Detection
Advances in Neural Information Processing Systems (**NeurIPS**), Datasets and Benchmarks Track, 2022

49. Mohammadreza Salehi, Hossein Mirzaei, Dan Hendrycks, Yixuan Li, Mohammad Hossein Rohban, Mohammad Sabokrou
A Unified Survey on Anomaly, Novelty, Open-Set, and Out-of-Distribution Detection: Solutions and Future Challenges
Transactions on Machine Learning Research (**TMLR**), 2022

48. Brayden Scott, Ali Deatsch, Zan Klanecek, Yixuan Li, Robert Jeraj
Leveraging localized gradients for regional predictive uncertainty applied to the deep learning-based metastatic disease delineation task
Conference on Machine Intelligence in Medical Imaging (**CMIMI** Abstract), 2022

47. Yifei Ming*, Ying Fan* and Yixuan Li
Out-of-Distribution Detection with Posterior Sampling
In Proceedings of International Conference on Machine Learning (**ICML**), 2022
(* indicates equal contribution)
Long talk (top 2%)

46. Yiyou Sun, Yifei Ming, Xiaojin Zhu and Yixuan Li
Out-of-Distribution Detection with Deep Nearest Neighbors
In Proceedings of International Conference on Machine Learning (**ICML**), 2022

45. Hongxin Wei, Renchunzi Xie, Hao Cheng, Lei Feng, Bo An and Yixuan Li
Mitigating Neural Network Overconfidence with Logit Normalization
In Proceedings of International Conference on Machine Learning (**ICML**), 2022

44. Julian Katz-Samuels*, Julia Nakhleh*, Robert Nowak and Yixuan Li
Training OOD Detectors in Their Natural Habitats
In Proceedings of International Conference on Machine Learning (**ICML**), 2022
(* indicates equal contribution)

43. Soumya Suvra Ghosal, Yifei Ming, and Yixuan Li
Are Vision Transformers Robust to Spurious Correlations?
International Conference on Machine Learning (**ICML'W**), SCIS Workshop, 2022.

42. Yiyou Sun and Yixuan Li
DICE: Leveraging Sparsification for Out-of-Distribution Detection
In Proceedings of European Conference on Computer Vision (**ECCV**), 2022.

41. Xuefeng Du, Xin Wang, Gabriel Gozum and Yixuan Li
Unknown-Aware Object Detection: Learning What You Don't Know from Videos in the Wild
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022
Oral presentation (top 4%)

40. Xuefeng Du, Zhaoning Wang, Mu Cai and Yixuan Li
VOS: Learning What You Don't Know by Virtual Outlier Synthesis
In Proceedings of the 10th International Conference on Learning Representations (**ICLR**), 2022

39. Haobo Wang, Ruixuan Xiao, Yixuan Li, Lei Feng, Gang Niu, Gang Chen, Junbo Zhao
PiCO: Contrastive Label Disambiguation for Partial Label Learning
In Proceedings of the 10th International Conference on Learning Representations (**ICLR**), 2022
Outstanding Paper Honorable Mention (top 10 in 3391 submissions)

38. Peyman Morteza and Yixuan Li
Provable Guarantees for Understanding Out-of-distribution Detection
In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2022
Oral presentation, Acceptance Ratio: 15%

37. Yifei Ming, Hang Yin and Yixuan Li
On the Impact of Spurious Correlation for Out-of-distribution Detection
In Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2022
Oral presentation, Acceptance Ratio: 15%

36. Rui Huang, Andrew Geng and Yixuan Li
On the importance of gradients for detecting distributional shifts in the wild
Advances in Neural Information Processing Systems (**NeurIPS**), 2021

35. Yiyou Sun, Chuan Guo and Yixuan Li
ReAct: Out-of-distribution Detection with Rectified Activation
Advances in Neural Information Processing Systems (**NeurIPS**), 2021

34. Haoran Wang*, Weitang Liu, Alex Bocchieri and Yixuan Li*
Can multi-label classification networks know what they don't know?
Advances in Neural Information Processing Systems (**NeurIPS**), 2021
(* indicates equal contribution)

33. Rui Huang and Yixuan Li
MOS: Towards Scaling Out-of-distribution Detection for Large Semantic Space
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021
Oral Presentation (top 4%)

32. Ziqian Lin*, Sreya Dutta Roy* and Yixuan Li
MOOD: Multi-level Out-of-distribution Detection
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021
(* indicates equal contribution)

31. Karan Goel*, Albert Gu*, Yixuan Li and Christopher Ré
Model Patching: Closing the Subgroup Performance Gap with Data Augmentation
In Proceedings of the 9th International Conference on Learning Representations (**ICLR**), 2021
(* indicates equal contribution)

30. Jiefeng Chen, Yixuan Li, Xi Wu, Yingyu Liang and Somesh Jha
ATOM: Robust Out-of-distribution Detection Using Outlier Mining
In Proceedings of the European Conference on Machine Learning (**ECML-PKDD**), 2021

29. Mu Cai, Hong Zhang, Huijuan Huang, Qichuan Geng, Yixuan Li and Gao Huang
Frequency Domain Image Translation: More Photo-realistic, Better Identity-preserving
In Proceedings of the International Conference on Computer Vision (**ICCV**), 2021

28. Yiyou Sun, Bastin Joseph, Alison Deatsch, Robert Jeraj and Yixuan Li
LOOD: Localization-based Uncertainty Estimation for Medical Imaging
International Conference on Machine Learning workshop **ICML DFUQ**, 2021
Spotlight Presentation

27. Weitang Liu, Xiaoyun Wang, John Owens and Yixuan Li
Energy-based Out-of-distribution Detection
Advances in Neural Information Processing Systems (**NeurIPS**), 2020

Publications (before joining UW-Madison)

26. Trenton Chang, Dan Fu, Yixuan Li, and Christopher Ré
Beyond the Pixels: Exploring the Effect of Video File Corruptions on Model Robustness
Workshop on Adversarial Robustness in the Real World (**ECCV'W**), 2020

25. Jiefeng Chen, Yixuan Li, Xi Wu, Yingyu Liang and Somesh Jha
Informative Outlier Matters: Robust Out-of-distribution Detection Using Outlier Mining
International Conference on Machine Learning UDL workshop (**ICML UDL**), 2020

24. Jiefeng Chen, Yixuan Li, Xi Wu, Yingyu Liang and Somesh Jha
Robust Out-of-distribution Detection for Neural Networks
AAAI-22 Workshop on Adversarial Machine Learning and Beyond

23. Yina Tang*, Fedor Borisyuk*, Siddarth Malreddy*, Yixuan Li*, Yiqun Liu* and Sergey Kirshner*
MSURU: Large Scale E-commerce Image Classification With Weakly Supervised Search Data
In Proceedings of SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2019
(* indicates equal contribution)

22. Abhinmanyu Dubey, Laurens van der Maaten, Zeki Yalniz, Yixuan Li and Dhruv Mahajan
Defense Against Adversarial Images using Web-Scale Nearest-Neighbor Search
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019
Oral Presentation (top 5%)

21. Dhruv Mahajan, Ross Girshick, Vignesh Ramanathan, Kaiming He, Manohar Paluri, Yixuan Li, Ashwin Bharambe, and Laurens van der Maaten
Exploring the Limits of Weakly Supervised Pretraining
In Proceedings of European Conference on Computer Vision (**ECCV**), 2018

20. Shiyu Liang, Ruoyu Sun, Yixuan Li, R. Srikant,
Understanding the Loss Surface of Neural Networks for Binary Classification
In Proceedings of International Conference on Machine Learning (**ICML**), 2018
Oral Presentation

19. Shiyu Liang, Yixuan Li, R. Srikant
Enhancing The Reliability of Out-of-distribution Image Detection in Neural Networks
In Proceedings of the 6th International Conference on Learning Representations (**ICLR**), 2018

18. Shiyu Liang, Ruoyu Sun, Yixuan Li, R. Srikant
Understanding the Loss Surface of Single-Layered Neural Networks for Binary Classification
Workshop in International Conference on Learning Representation (**ICLR Workshop**), 2018

17. Gao Huang*, Yixuan Li*, Geoff Pleiss, Zhuang Liu, John Hopcroft and Kilian Weinberger
Snapshot Ensembles: Train 1, Get M for Free
In Proceedings of the 5th International Conference on Learning Representations (**ICLR**), 2017
(* indicates equal contribution)

16. Xun Huang, Yixuan Li, Omid Poursaeed, John Hopcroft and Serge Belongie
Stacked Adversarial Generative Networks
In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017

15. Yixuan Li, Pingmei Xu, Dmitry Lagun and Vidhya Navalpakkam
Towards Measuring and Inferring User Interest From Gaze
In Proceedings of the 26th international conference on World Wide Web (**WWW**), 2017

14. Yixuan Li, Kun He, Kyle Kloster, David Bindel and John Hopcroft
Local spectral clustering for overlapping community detection
In ACM Transactions on Knowledge Discovery from Data (**TKDD**), 2017

13. Jacob Gardner, Paul Upchurch, Matt Kusner, Yixuan Li, Kilian Weinberger, Kavita Bala and John Hopcroft
Deep Manifold Traversal: Changing Labels with Convolutional Features
arXiv cs.LG/1511.06421

12. Yixuan Li, Jason Yosinski, Jeff Clune, John Hopcroft and Hod Lipson
Convergent Learning: Do different neural networks learn the same representations?
In Proceedings of the 4th International Conference on Learning Representation, (**ICLR**), 2016
Oral Presentation

11. Yixuan Li, Oscar Martinez, Xing Chen, Yi Li and John Hopcroft
In a World that Counts: Clustering and Detecting Fake Social Engagement at Scale
In Proceedings of the 25th international conference on World Wide Web (**WWW**), 2016

10. Jiezhong Qiu, Yixuan Li, Jie Tang, Zheng Lu, Hao Ye, Bo Chen, Qiang Yang and John Hopcroft
The Lifecycle and Cascade of Social Messaging Groups
In Proceedings of the 25th international conference on World Wide Web (**WWW**), 2016

9. Yixuan Li, Jason Yosinski, Jeff Clune, John Hopcroft and Hod Lipson
Convergent Learning: Do different neural networks learn the same representations?
NIPS Workshop on Feature Extraction: Modern Questions and Challenges, 2015
Oral Presentation

8. Yixuan Li, Kun He, David Bindel and John Hopcroft
Uncovering the Small Community Structure in Large Networks: A Local Spectral Approach
In Proceedings of the 24th International Conference on World Wide Web (**WWW**), 2015

7. Kun He, Yiwei Sun, David Bindel and John Hopcroft, Yixuan Li
Detecting Overlapping Communities from Local Spectral Subspaces
In Proceedings of the International Conference on Data Mining (**ICDM**), 2015

6. Jinbei Zhang, Yixuan Li, Zhuotao Liu, Fan Wu, Feng Yang, and Xinbing Wang
On Multicast Capacity and Delay in Cognitive Radio Mobile Ad-hoc Networks
In IEEE Transactions on Wireless Communications (**TWC**), 2015

5. Yixuan Li, Qiuyu Peng and Xinbing Wang
Multicast Capacity With Max-Min Fairness for Heterogeneous Networks
In IEEE/ACM Transactions on Networking (**TON**), 2014

Pending Work and Preprints

4. Bojun Liu, Jordan G. Boysen, Ilona Christy Unarta, Xuefeng Du, Yixuan Li, Xuhui Huang
Exploring Transition States of Protein Conformational Changes via the Out-of-Distribution Detection using Hyperspherical Latent Representations
Under review, Nature Machine Intelligence, 2024

3. Brayden Schott, Dmitry Pinchuk, Victor Santoro-Fernandes, Žan Klaneček, Luciano Rivetti, Alison Deatsch, Scott Perlman, Yixuan Li, Robert Jeraj
Uncertainty Quantification via Localized Gradients for Deep Learning-based Medical Image Assessments
Under review, Journal of Medical Image Analysis, 2024

2. Jingyang Zhang, Jingkang Yang, Pengyun Wang, Haoqi Wang, Yueqian Lin, Haoran Zhang, Yiyou Sun, Xuefeng Du, Kaiyang Zhou, Wayne Zhang, Yixuan Li, Ziwei Liu, Yiran Chen, Hai Li
OpenOOD v1.5: Enhanced Benchmark for Out-of-Distribution Detection
Under review, The Journal of Data-Centric Machine Learning Research (**DMLR**)

1. Jingkang Yang, Kaiyang Zhou, Yixuan Li and Ziwei Liu
Generalized Out-of-Distribution Detection: A Survey
Under review, International Journal of Computer Vision (**IJCV**)

Grants

20. **(PI) SLES: Foundations for Safety-Aware Learning in the Wild**
National Science Foundation (NSF)
Award amount: $793,065, Co-PI: Jerry Zhu

19. **(PI) CAREER: Foundations of Human-Centered Machine Learning in the Wild**
National Science Foundation (NSF)
Award amount: $599,265, October 1, 2023 - September 30, 2028

18. **(Co-investigator) Machine Learning to Predict Well-being**
DARPA - Information Innovation Office
Award amount: $3,076,700

17. **(PI) Human-Aligned Learning in the Open-World (HALLOW)**
AFOSR Young Investigator Program
Award amount: $450,000, March 1 2023 - March 1, 2026

16. **(PI) Out-of-distribution Detection in Real-world Environments**
Office of Naval Research (ONR)
Award amount: $600,000, Co-PI: Katie Rainey

15. **(PI) Building new foundations to mitigate AI risks in the open world**
Survival and Flourishing Fund (SFF)
Award amount: $309,000, unrestricted gift

14. **(PI) Understanding and Reducing Safety Risks of Learning with Large Pre-trained Models**
Center For Advanced Safety of Machine Intelligence (CASMI)
Award amount: $270,835, Jan 1, 2023 - December 31, 2024

13. **(PI) Google-Initiated Research Grant (Level 2 Support)**
Award amount: $110,000, unrestricted gift awarded in 2022

12. **(PI) Amazon Research Award**
Award amount: $30,000, unrestricted gift awarded in 2022

11. **(PI) Adobe Research Gift Funding**
Award amount: $15,000, unrestricted fund awarded in 2022

10. **(PI) Facebook Faculty Research Award**
Award amount: $100,000, unrestricted fund awarded in 2021

9. **(PI) American Family Funding Initiative Award**
Contrastive Language-Image Learning for Out-of-distribution Detection
Award amount: $100,000, August 2022 - August 2023

8. (Intramural) **(PI) University of Wisconsin - Madison, Fall Research Competition**
An Unknown-aware Machine Learning Framework for Safe Object Recognition
Award amount: $38,947, August 2022 - May 2023

7. (Intramural, declined) **Hilldale Undergraduate/Faculty Research Fellowship**
Award amount: $1,000 (for PI), August 2022 - August 2023

6. **(PI) Google-Initiated Focused Research Award**
Uncertainty Estimation for Multi-modal Machine Learning
Award amount: $30,000, unrestricted fund awarded in 2021

5. **(PI) Facebook Gift Funding**
Award amount: $25,000, unrestricted fund awarded in 2021

4. **(PI) American Family Funding Initiative Award**
Safe and Reliable Machine Learning through Out-of-Distribution Detection
Award amount: $111,258, August 2021 - August 2022

3. **(Co-PI) American Family Funding Initiative Award**
Reducing Bias in Human-AI Conversation
Award amount: $149,969, August 2021 - August 2022, PI: Kaiping Chen

2. **(PI) Adobe Research Gift Funding**
Award amount: $10,000, unrestricted fund

1. **(PI) JP Morgan Early-career Faculty Award**
Award amount: $10,000, September 2021-August 2022

Professional Service

- **Workshop Organization:**

  Program Chair and Founding Organizer, ICML workshop on Robustness and Uncertainty in Deep Learning, 2019
  Program Chair, ICML workshop on Robustness and Uncertainty in Deep Learning, 2020
  Co-organizer, ICML workshop on Robustness and Uncertainty in Deep Learning, 2021
  Co-organizer, ICML workshop on Distribution-free Uncertainty Quantification, 2021 & 2022
  Co-organizer, NeurIPS workshop on Robustness in Sequence Modeling, 2022
  Co-organizer, ICCV Tutorial on Reliability of Deep Learning for Real-World Deployment , 2023
  Co-organizer, WWW Workshop on Data-Centric AI, 2024
  Co-organizer, CVPR Workshop on Prompting in Vision, 2024

- **Conferences:**

  Area Chair for ICLR 2021, ICLR 2023
  Area Chair for ICML 2021, ICML 2022, ICML 2023, ICML 2024
  Area Chair for NeurIPS, 2020, NeurIPS 2022, NeurIPS 2023
  Area Chair for IJCAI, 2021
  Senior Program Committee for AAAI, 2020, 2021, 2022, 2023
  Reviewer: ICLR 2022, NeurIPS 2021, CVPR 2021, CVPR 2019, ICCV 2019, ICLR 2019, NIPS 2018, AAAI 2017, NIPS 2016

- **Journal:**

  IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
  IEEE Transactions on Knowledge and Data Engineering (TKDE)
  ACM Transactions on the Web (TWEB)
  IEEE Transactions on Intelligent Systems and Technology (TIST)
  IEEE Transactions on Big Data (TBD)
  Pattern Recognition (PR)
  Journal of Machine Learning for Biomedical Imaging (MELBA)
  Action Editor, Transaction on Machine Learning Research (TMLR)

- **Grant reviewing:**

  Army Research Office, 2021
  NSF Robust Intelligence Program, 2023

- **Department Service:**

  Graduate Admission Committee, 2019-2023

Current Students

Ph.D.	Yifei (Alvin) Ming (Fall 2020-current)
Ph.D.	Xuefeng Du (Spring 2021-current)
Ph.D.	Hyeong Kyu (Froilan) Choi (Fall 2023-current)
Ph.D.	Shawn Im (Fall 2023-current)
Ph.D.	Gabriel Orlanski (Fall 2023-current)
B.S.	Max Khanov (Spring 2023-current)
B.S.	Ben Hayum (Summer 2023-current)
B.S.	Shrey Modi (Spring 2024-current)

Students Graduated

PhD'23	Yiyou Sun –> Research Scientist at NEC lab
BS'21&MS'23	Andrew Geng –> Research Engineer at IBM
MS'23	Soumya Suvra Ghosal –> PhD student at U. Maryland
MS'22	Ying Fan –> PhD student at UW-Madison
MS'21	Hang Yin –> Google
MS'20	Bastin Joseph –> Amazon AI
MS'20	Sreya Dutta Roy –> Facebook/Meta AI
MS'20	Deepan Das –> DataChat
BS'23	Top Burapacheep –> graduate student at Stanford
BS'22	Gabriel Gozum –> MS student at UW-Madison

Serve on Ph.D. Thesis Committee:

Yuzhe Ma (thesis advisor: Jerry Zhu)
Samuel Drews (thesis co-advisors: Loris D'Antoni and Aws Albarghouthi)
Zihang Meng (thesis advisor: Vikas Singh)
David Merrell (thesis advisor: Anthony Gitter)
Sam Gelman (thesis advisor: Anthony Gitter)
Ryan Sheatsle (thesis advisor: Patrick McDaniel)
Fangzhou Mu (thesis advisor: Yin Li)
Kartik Sreenivasan (thesis advisor: Dimitris Papailiopoulos)

Served on the qualification and prelim committee:

Yuhao Zhang (thesis advisor: Loris D'Antoni and Aws Albarghouthi)
David Merrell (thesis advisor: Anthony Gitter)
Sam Gelman (thesis advisor: Anthony Gitter)
Kartik Sreenivasan (thesis advisor: Dimitris Papailiopoulos)
Yang Guo (thesis advisor: Yingyu Liang)
Eric Brandt (thesis advisor: Eftychios Sifakis)
Sangeetha Grama (thesis advisor: Eftychios Sifakis)
Zihang Meng (thesis advisor: Vikas Singh)
Zhanpeng Zeng (thesis advisor: Vikas Singh)
Zifan Liu (thesis advisor: Theodoros Rekatsinas)
Bhavya Goyal (thesis advisor: Mohit Gupta)
Eddie Barton (thesis advisor: Yu-Hen Hu)
Utkarsh Ojha (thesis advisor: Yong Jae Lee)
Ziqian Lin (thesis advisor: Kangwook Lee)
Fangzhou Mu (thesis advisor: Yin Li)
Jifan Zhang (thesis advisor: Rob Nowak)
Saketh Sridhara (thesis advisor: Krishnan Suresh)
Peyman Morteza (committee chair: Frederic Sala)
Yue Gao (thesis advisor: Kassem Fawaz)
Tim Ossowski (thesis advisor: Junjie Hu)
Ryan Sheatsle (thesis advisor: Patrick McDaniel)
Xueyan Zou (thesis advisor: Yong Jae Lee)
Vignesh Selvaraj (thesis advisor: Sangkee Min)
Kanghee Park (thesis advisor: Loris D'Antoni)
Sonia Cromp (thesis advisor: Frederic Sala)
Kushin Mukherjee (thesis advisor: Timothy Rogers)
Brayden J. Schott (thesis advisor: Robert Jeraj)

Talks & Panels (after joining UW-Madison)

May 2023 — *Invited talk at MIT*
AI Safety Under Distributional Shifts

April 2023 — *Invited talk at KAUST*
How to Handle Data Shifts in the Wild? Challenges, Research Progress, and Path Forward

Feb. 2023 — *Invited talk at Cornell AI Seminar*
How to Handle Data Shifts in the Wild? Challenges, Research Progress, and Path Forward

Feb. 2023 — *Invited talk at Machine Learning Lunch Meeting (MLLM)*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Dec. 2022 — *Invited talk @ NeurIPS Workshop on ML Safety*
How to Handle Distributional Shifts? Challenges, Research Progress, and Path Forward

Dec. 2022 — *Invited guest lecture at NYU*
How to Handle Distributional Shifts? Challenges, Research Progress, and Path Forward

Dec. 2022 — *Invited talk @ National Institute of Standards and Technology (NIST)*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Oct. 2022 — *Keynote @ ECCV Workshop on Uncertainty Quantification in Computer Vision*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Oct. 2022 — *Keynote @ ECCV Workshop on Learning with Limited and Imperfect Data*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Oct. 2022 *Ohio State University, CSE AI Seminar*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Oct. 2022 *TrustML Young Scientist Seminar*
How to Handle Data Shifts? Challenges, Research Progress, and Path Forward

Sept. 2022 *SIAM Symposium on Robustness in Deep Learning*
Challenges and Opportunities in Out-of-distribution Detection

Aug. 2022 *UW-Madison new graduate student orientation*
Things I wish I knew before starting the graduate school

Aug. 2022 *Future of Data-centric AI (co-hosted by Stanford)*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

July 2022 *Invited talk @ ICML Workshop on DataPerf*
Challenges and Opportunities in Handling Data Distributional Shift

Mar. 2022 *UT-Austin, Sys/ML Workshop*
Challenges and Opportunities in Out-of-distribution Detection

Mar. 2022 *Oregon State University, AI Seminar*
Challenges and Opportunities in Out-of-distribution Detection

Feb. 2022 *Anomaly Detection for Scientific Discovery (AD4SD) Seminar*
Challenges and Opportunities in Out-of-distribution Detection

Dec. 2021 *Keynote @ NeurIPS ImageNet workshop*
Uncovering the Unknowns of ImageNet Models: Challenges and Opportunities

Dec. 2021 *Physics Meets ML Seminar (co-hosted by Microsoft)*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

Sept. 2021 *Future of Data-centric AI (co-hosted by Stanford)*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

Aug. 2021 *Facebook*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

Aug. 2021 *Keynote @ Artificial Intelligence for Anomalies and Novelties Workshop*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

Aug. 2021 *Keynote @ Weakly-supervised Representation Learning Workshop*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

Aug. 2021 *Institute for Foundations of Data Science (IFDS)*
Uncovering the Unknowns of Deep Neural Networks: Challenges and Opportunities

April 2021 *John Hopkins University, MINDS and CIS Seminar*
Towards Reliable Open-world Machine Learning

April 2021 *Women in Scientific Education and Research (WISER) at UW-Madison*
Towards Reliable Open-world Machine Learning

April 2021 *Open Data Science Conference (ODSC)*
Reliable Open-World Learning Against Out-of-distribution Data

Nov, 2020 *Stanford Women in Computer Science Seminar*
Reliable Open-World Learning Against Out-of-distribution Data

October 2020 *University of California-Berkeley, BLISS Seminar*
Reliable Open-World Learning Against Out-of-distribution Data

October 2020 *University of Wisconsin-Madison, SILO Seminar*
Reliable Open-World Learning Against Out-of-distribution Data

Sept. 2020 *Microsoft MLOS Seminar*
Reliable Open-World Learning Against Out-of-distribution Data

May 2020 *Air Force Research Laboratory's Workshop*
Out-of-distribution Uncertainty Estimation and Robustness in Open-World Machine Learning

Teaching Experience

Fall 2023 — Instructor, University of Wisconsin-Madison
CS762: Advanced Deep Learning
http://pages.cs.wisc.edu/~sharonli/courses/cs762_fall2023/index.html

Fall 2022 — Instructor, University of Wisconsin-Madison
CS762: Advanced Deep Learning
http://pages.cs.wisc.edu/~sharonli/courses/cs762_fall2022/index.html

Spring 2022 — Instructor, University of Wisconsin-Madison
CS540: Introduction to Artificial Intelligence
http://pages.cs.wisc.edu/~sharonli/courses/cs540_spring2022/index.html

Fall 2021 — Instructor, University of Wisconsin-Madison
CS762: Advanced Deep Learning
http://pages.cs.wisc.edu/~sharonli/courses/cs762_fall2021/index.html

Spring 2021 — Instructor, University of Wisconsin-Madison
CS540: Introduction to Artificial Intelligence
http://pages.cs.wisc.edu/~sharonli/courses/cs540_spring2021/index.html

Fall 2020 — Instructor, University of Wisconsin-Madison
CS839 Advanced Topics in Deep Learning (newly developed)
http://pages.cs.wisc.edu/~sharonli/courses/cs839_fall2020/index.html

Feb 2015 - Jul 2015 — Head of Teaching Assistant, Cornell University
Mathematical Foundations for the Information Age
http://www.cs.cornell.edu/courses/cs4850/2015sp/

Professional Experience

Oct 2017 - April 2019 — **Facebook AI**, Menlo Park, CA
Research Scientist

May 2016- Aug 2016 — **Google AI**, Mountain View, CA
Research Intern, Mentor: Vidhya Navalpakkam

May 2015- Aug 2015 — **Google**, Mountain View, CA
Research Intern, Mentor: Oscar Martinez