YAN YAN

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📍 School of Electrical Engineering and Computer Science, Washington State University

WORK EXPERIENCE

Washington State University, *Assistant Professor* — *2020 - present*

University of Iowa, *Postdoctoral Research Associate* — *2018-2020*

EDUCATION

University of Technology Sydney, Australia — *2015 - 2018*
Doctor of Philosophy in Information Systems

The University of Queensland, Australia — *2014 - 2015*
Candidate for Master of Philosophy in Information Technology

Tianjin University, China — *2009 - 2013*
B.E. in Computer Science and Technology

HONORS

- AAAI 2023 New Faculty Highlight.

- NSF I-Corps training grant.

- NeurIPS 2019 Travel Award.

- Higher Degree by Research publication award, FEIT, University of Technology Sydney, 2016.

- Outstanding Student Scholarship, Outstanding Social Practice, Outstanding member of Student Association, Tianjin University, 2012.

PUBLICATIONS

Conference Publications

1. Subhankar Ghosh, Taha Belkhouja, **Yan Yan**, Janardhan Rao Doppa. "Improving Uncertainty Quantification of Deep Classifiers via Neighborhood Conformal Prediction: Novel Algorithm and Theoretical Analysis." In *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023)*.

2. Taha Belkhouja, **Yan Yan**, Janardhan Rao Doppa. Training Robust Deep Models for Time-Series Domain: Novel Algorithms and Theoretical Analysis. In *Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI 2022)*.

3. Yuan, Zhuoning, **Yan Yan**, Milan Sonka, and Tianbao Yang. Robust deep auc maximization: A new surrogate loss and empirical studies on medical image classification. In *International Conference on Computer Vision (ICCV 2021)*.

4. **Yan Yan**, Yi Xu, Qihang Lin, Wei Liu, Tianbao Yang. Optimal Epoch Stochastic Gradient Descent Ascent Methods for Min-Max Optimization. In *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS 2020)*.

5. **Yan Yan**, Yi Xu, Lijun Zhang, Xiaoyu Wang, Tianbao Yang. Stochastic Optimization for Non-convex Inf-Projection Problems In *Thirty-seventh International Conference on Machine Learning (ICML 2020)*.

6. Qi Qi, **Yan Yan**, Zixuan Wu, Xiaoyu Wang, Tianbao Yang. A Simple And Effective Framework for Pairwise Deep Metric Learning. In *European Conference on Computer Vision (ECCV 2020)*.

7. Pingbo Pan, Ping Liu, **Yan Yan**, Tianbao Yang, Yi Yang. Adversarial Localized Energy Network for Structured Prediction. In *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020)*.

8. Zhuoning Yuan, **Yan Yan**, Rong Jin, Tianbao Yang. Stagewise Training Accelerates Convergence of Testing Error Over SGD. In *Thirty-third Conference on Neural Information Processing Systems (NeurIPS 2019)*.

9. Zhibin Hu*, Yongsheng Luo*, Jiong Lin*, **Yan Yan** and Jian Chen. Multi-Level Visual-Semantic Alignments with Relation-Wise Dual Attention Network for Image and Text Matching. In *International Joint Conference on Artificial Intelligence (IJCAI 2019)* .

10. Yanbin Liu, **Yan Yan**, Ling Chen, Yahong Han and Yi Yang. Adaptive Sparse Confidence-Weighted Learning for Online Feature Selection. In *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI 2019)* .

11. Guoliang Kang, Liang Zheng, **Yan Yan**, and Yi Yang. Deep adversarial attention alignment for unsupervised domain adaptation: the benefit of target expectation maximization. In *Proceedings of the European Conference on Computer Vision (ECCV 2018)*.

12. **Yan Yan**, Tianbao Yang, Zhe Li, Qihang Lin and Yi Yang. A Unified Analysis of Stochastic Momentum Methods for Deep Learning. In *International Joint Conference on Artificial Intelligence (IJCAI 2018)*.

13. Xuanyi Dong, **Yan Yan**, Wanli Ouyang and Yi Yang. Style Aggregated Network for Facial Landmark Detection. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*.

14. Yu Wu, Yutian Lin, Xuanyi Dong, **Yan Yan**, Wanli Ouyang and Yi Yang. Exploit the Unknown Gradually: One-Shot Video-Based Person Re-Identification by Stepwise Learning. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*.

15. **Yan Yan**, Tianbao Yang, Yi Yang, Jianhui Chen. A Framework of Online Learning with Imbalanced Streaming Data. In *Thirty-First AAAI Conference on Artificial Intelligence (AAAI 2017)*.

16. Yi Xu*, **Yan Yan***, Qihang Lin, Tianbao Yang. Homotopy Smoothing for Non-Smooth Problems with Lower Complexity than O($1/\epsilon$). In *Neural Information Processing Systems (NeurIPS 2016)*.

17. **Yan Yan**, Zhongwen Xu, Ivor W. Tsang, Guodong Long, Yi Yang. Robust Semi-supervised Learning through Label Aggregation. In *Thirtieth Conference on Artificial Intelligence (AAAI 2016)*.

18. Mingkui Tan, **Yan Yan**, Li Wang, Anton Van Den Hengel, Ivor W. Tsang, Qinfeng (Javen) Shi. Learning Sparse Confidence-Weighted classifier on Very High Dimensional Data. In *Thirtieth Conference on Artificial Intelligence (AAAI 2016)*.

19. **Yan Yan**, Mingkui Tan, Ivor W. Tsang, Yi Yang, Chengqi Zhang and Qinfeng (Javen) Shi. Scalable Maximum Margin Matrix Factorization by Active Riemannian Subspace Search. In *International Joint Conference on Artificial Intelligence (IJCAI 2015)*, 3988-3994.

20. Joey Tianyi Zhou, Sinno Jialin Pan, Ivor W. Tsang and **Yan Yan**. Hybrid Heterogeneous Transfer Learning through Deep Learning. In *Twenty-Eighth Conference on Artificial Intelligence (AAAI 2014)*, 2213-2219.

Journal Publications

1. Taha Belkhouja, **Yan Yan**, Janardhan Doppa "Dynamic Time Warping based Adversarial Framework for Time-Series Domain." *IEEE Transactions on Pattern Analysis and Machine Intelligence. Accepted.*

2. Zhibin Hu, Jianchun Wang, **Yan Yan**, Peilin Zhao, Jian Chen and Jin Huang. Neural graph personalized ranking for Top-N Recommendation *Knowledge-Based Systems* 213 (2021): 106426.

3. Yu Wu, Yutian Lin, Xuanyi Dong, **Yan Yan**, Wei Bian and Yi Yang. "Progressive Learning for Person Re-Identification With One Example." *IEEE Transactions on Image Processing*, vol. 28, no. 6, pp. 2872 - 2881, Jun. 2019.

4. Xuanyi Dong, **Yan Yan**, Mingkui Tan, Yi Yang and Ivor W. Tsang. "Late Fusion via Subspace Search With Consistency Preservation." *IEEE Transactions on Image Processing*, vol. 28, no. 1, pp. 518-528, Jan. 2019.

5. **Yan Yan**, Mingkui Tan, Ivor W. Tsang, Yi Yang, Qinfeng Shi and Chengqi Zhang. "Fast and Low Memory Cost Matrix Factorization: Algorithm, Analysis and Case Study." *IEEE Transactions on Knowledge and Data Engineering.* vol. 32, no. 2, pp. 288-301, 1 Feb. 2020, doi: 10.1109/TKDE.2018.2882197.

6. **Yan Yan**, Feiping Nie, Wen Li, Chenqiang Gao, Yi Yang, Dong Xu. "Image Classification by Cross-Media Active Learning with Privileged Information." *IEEE Transactions on Multimedia*, vol. 18, no. 12 (2016): 2494-2502.

7. Yahong Han, Yi Yang, **Yan Yan**, Zhigang Ma, Nicu Sebe and Xiaofang Zhou. "Semi-Supervised Feature Selection via Spline Regression for Video Semantic Recognition." *IEEE Transactions on Neural Networks and Learning Systems*, vol. 26, no. 2 (2015): 252-264.

8. Xingzhong Du, **Yan Yan**, Pingbo Pan, Guodong Long and Lei Zhao. "Multiple Graph Unsupervised Feature Selection." *Signal Processing* 120 (2016): 754-760.

9. **Yan Yan**, Gaowen Liu, Sen Wang, Jian Zhang and Kai Zheng. "Graph-Based Clustering and Ranking for Diversified Image Search." *Multimedia Systems* 23, no. 1 (2017): 41-52.

10. Pufeng Du, Yang Tian and **Yan Yan**. "Subcellular localization prediction for human internal and organelle membrane proteins with projected gene ontology scores." *Journal of Theoretical Biology* 313 (2012): 61-67.

Preprints

1. **Yan Yan**, Xin Man, Tianbao Yang. Nearly Optimal Robust Method for Convex Compositional Problems with Heavy-Tailed Noise. *arXiv preprint arXiv:2006.10095 (2020).*

2. **Yan Yan**, Yi Xu, Qihang Lin, Lijun Zhang, Tianbao Yang. Stochastic Primal-Dual Algorithms with Faster Convergence than $1/\sqrt{T}$ for Problems without Bilinear Structure. *arXiv preprint arXiv:1904.10112(2019).*

3. Zhishuai Guo, Zhuoning Yuan, **Yan Yan**, Tianbao Yang. Fast Objective and Duality Gap Convergence for Nonconvex Strongly-concave Min-max Problems. *arXiv preprint arXiv:2006.06889 (2020).*

Book Chapter

1. **Yan Yan**. "Machine Learning Fundamentals." Machine Learning in Chemical Safety and Health: Fundamentals with Applications (2022): 19. Editor: Qingsheng Wang , Changjie Cai.

Workshop Papers

1. **Yan Yan**, Yi Xu, Qihang Lin, Wei Liu, Tianbao Yang. Sharp Analysis of Simple Restarted Stochastic Gradient Methods for Min-Max Optimization. *Bridging Game Theory and Deep Learning Workshop NeurIPS 2019 (Smooth Games Optimization and Machine Learning Series).*

TEACHING

- Instructor: Advanced Topics in Computer Science (Computer Vision), CPTS 580, Washington State University, 2023 Spring

- Instructor: Neural Network Design and Application, CPTS 434/534, Washington State University, 2023 Spring

- Instructor: Advanced Data Structures C/C++, CPTS 223, Washington State University, 2022 Fall

- Instructor: Neural Network Design and Application, CPTS 434/534, Washington State University, 2022 Spring

- Instructor: Advanced Data Structures C/C++, CPTS 223, Washington State University, 2021 Fall

- Instructor: Neural Network Design and Application, CPTS 434/534, Washington State University, 2021 Spring

PROFESSIONAL SERVICE

Program Committee: AISTATS 2022, ICML 2022, NeurIPS 2019, NeurIPS 2020, NeurIPS 2022, IJCAI 2018, IJCAI 2019, IJCAI 2021, AAAI 2019, AAAI 2020, AAAI 2021

Senior Program Committee: AAAI 2023, IJCAI 2023

Reviewer: IEEE Transactions on Emerging Topics in Computational Intelligence, Mathematics of Operations Research, Knowledge-Based Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, Pattern Recognition, Multimedia Tools and Applications, Neurocomputing

UNIVERSITY SERVICE

Faculty Mentor, Team Mentoring Program, Washington State University

GRANTS

- "USDA-NIFA AI Institute: Agricultural AI for Transforming Workforce and Decision Support (AgAID)". 08/2021-08/2026. Lead PI: Kalyanaraman Anantharaman. Role: Senior/Key Personnel.

- "Robust ML Systems in the Wild via Novel Conformal Prediction and Anomaly Detection Algorithms". Research funding from Proofpoint Inc. $240K, 2022/01 - 2024/12. PIs: Jana Doppa and Yan Yan.