
Ya Zhang, Ph.D

Cooperative Medianet Innovation Center

Shanghai Jiao Tong University

Email: ya_zhang@sjtu.edu.cn

Work: +86-21-34205012

Cell: +86-13817594863

RESEARCH INTERESTS

Machine learning with applications in computer vision and medical image analysis

WORK EXPERIENCE

- 03/2010 - present **Professor**, Department of Electrical Engineering, Shanghai Jiao Tong University
- 10/2006 – 03/2010 **Senior Research Manager, Tech Lead**, Yahoo! Inc., Sunnyvale, CA
- 8/2005-8/2007 **Assistant Professor** (Tenure-track), Department of Electrical Engineering and Computer Science, University of Kansas, Lawrence, KS
- 5/2005 - 8/2005 **Summer Intern**, Yahoo! Search, Sunnyvale, CA
- 5/2004 - 8/2004 **Summer Research Intern**, Computational Research Division, Lawrence Berkeley National Laboratory, Berkeley, CA

EDUCATION

- 2005 Ph.D., The Pennsylvania State University
- 2000 B. S., Tsinghua University, China

AWARDS & HONORS

- 2019 EURASIP Best Paper Award for the Speech Communication Journal
- Best 10% paper, VCIP, 2016
- Third Prize, Second Challenge on Big Data Innovation, 2014
- Shanghai Science and Technology Rising Star, 2011
- Best Paper Award, IEEE Workshop on Computer Vision Methods for Bioinformatics, 2005
- Best Paper Award Nomination, American Medical Informatics Association (AMIA) Annual Symposium, 2002

SELECTED PUBLICATIONS

Refereed Journal Papers:

- [1]. M. Li, S. Chen, Y. Zhao, Y. Zhang, Y. Wang, Q. Tian, "Multiscale Spatio-Temporal Graph Neural Networks for 3D Skeleton-Based Motion Prediction", IEEE Transactions on Image Processing, accepted.
- [2]. S. Feng, B. Liu, Y. Zhang*, X. Zhang, Y. Li, "Two-Stream Compare and Contrast Network for Vertebral Compression Fracture Diagnosis", IEEE Transactions on Medical Imaging, 40(9):2496-2506, 2021.
- [3]. M. Li, S. Chen*, X. Chen, Y. Zhang*, Y. Wang, Q. Tian, "Symbiotic Graph Neural Networks for 3D Skeleton-based Human Action Recognition and Motion Prediction", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021.
- [4]. X. Chen, S. Chen, J. Yao, H. Zheng, Y. Zhang*, I. Tsang, "Learning on Attribute-Missing Graphs", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020.

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- [5]. C. Ma, Q. Xu, X. Wang, B. Jin, X. Zhang, Y. Wang, Y. Zhang*, "Boundary-aware Supervoxel-level Iteratively Refined Interactive 3D Image Segmentation with Multi-agent Reinforcement Learning", IEEE Transactions on Medical Imaging, 2020.
- [6]. F. Ye, C. Huang, J. Cao, M. Li, Y. Zhang*, C. Lu, "Attribute Restoration Framework for Anomaly Detection", IEEE Transactions on Multimedia, 2020.
- [7]. P. Zhao, L. Xie, Y. Zhang*, Q. Tian, "Universal-to-Specific Framework for Complex Action Recognition", IEEE Transactions on Multimedia, 2020.
- [8]. X. Chen, J. Yao, M. Li, Y. Zhang*, Y. Wang, "Decoupled Variational Embedding for Signed Directed Networks", ACM Transactions on the Web, 15(1), Article 3 (October 2020), 31 pages.
- [9]. Y. Zhang, Y. Zhang*, "Learning Robust Shape-based Features for Domain Generalization", IEEE Access, 8:63748-63756, 2020.
- [10]. Z. Tan, Y. Zhang*, W. Hu, "Online Prediction of Video Popularity in OVSs: A Video Age-Sensitive Model With Beyond Views Features", IEEE Transactions on Broadcasting, 66(2):241-250, 2020.
- [11]. Y. Zhang, Y. Zhang, W. Cai, "A Unified Framework for Generalizable Style Transfer: Style and Content Separation", IEEE Transactions on Image Processing, 29(1):4085-4098, 2020.
- [12]. J. Yao, J. Wang, I. W. Tsang, Y. Zhang, J. Sun, C. Zhang, R. Zhang, "Deep Learning from Noisy Image Labels with Quality Embedding", IEEE Transactions on Image Processing, 28(4):1909-1922, 2019.
- [13]. Z. Tan, Y. Zhang, "Predicting the Top-N popular videos via a cross-domain hybrid model", IEEE Transactions on Multimedia, 21(1):147-156, 2019.
- [14]. Z. Chen, Z. Xu, Y. Zhang, X. Gu, "Query-free Clothing Retrieval via Implicit Relevance Feedback", IEEE Transactions on Multimedia, 20(8):2126-2137, 2018.
- [15]. Z. Xu, S. Huang, Y. Zhang, D. Tao, "Webly-Supervised Fine-Grained Visual Categorization via Deep Domain Adaptation", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 40(5): 1100-1113, 2018.
- [16]. J. Yao, Y. Wang, Y. Zhang, J. Sun, J. Zhou, "Joint Latent Dirichlet Allocation for Social Tags", IEEE Transactions on Multimedia, 20(1):224-237, 2018.
- [17]. Y. Zhang, W. Cai, W. Wang, Y. Zhang, "Stopping Criterion for Active Learning with Model Stability", ACM Transactions on Intelligent Systems and Technology, 9(2), Article No. 19, 2017.
- [18]. W. Cai, Y. Zhang, Y. Zhang, S. Zhou, W. Wang, Z. Chen, C. Ding, "Active Learning for Classification with Maximum Model Change", ACM Transactions on Information Systems (TOIS), 36(2), 15, 2017.
- [19]. W. Cai, M. Zhang, Y. Zhang, "Batch Mode Active Learning for Regression with Expected Model Change", IEEE Transactions on Neural Networks and Learning Systems, 28(7):1668-1681, 2017.
- [20]. Z. Xu, D. Tao, S. Huang, Y. Zhang, "Friend or Foe: Fine-Grained Categorization with Weak Supervision", IEEE Transactions on Image Processing, 26(1):135-146, 2017.
- [21]. Z. Xu, Z. Hong, Y. Zhang, J. Wu, A. C. Tsoi, D. Tao, "Multinomial Latent Logistic Regression for Image Understanding", IEEE Transactions on Image Processing, 25(2):973-987, 2016.
- [22]. B. Long, J. Bian, O. Chapelle, Y. Zhang, Y. Inagakiy, Y. Chang, "Active Learning for Ranking through Expected Loss Optimization", IEEE Transactions on Knowledge and Data Engineering, 27(5):1180-1191, 2015.
- [23]. W. Cai, M. Zhang, Y. Zhang, "Active learning for ranking with sample density", Information Retrieval Journal, 18(2):123-144, 2015.
- [24]. W. Cai, M. Zhang, Y. Zhang, "Active Learning for Web Search Ranking via Noise Injection", ACM Transactions on the Web (TWEB), 9(1): article No. 3, 2015.

[25]. Z. Xu, Y. Zhang, L. Cao, "Social Image Analysis from a Non-IID Perspective", IEEE Transactions on Multimedia, 16(7):1986-1998, 2014.

Refereed Conference Papers:

- [1]. C. Ju, P. Zhao, S. Chen, Y. Zhang*, Y. Wang, Q. Tian, "Divide and Conquer for Single-frame Temporal Action Localization", ICCV 2021, accepted.
- [2]. T. Cao, L. Du, X. Zhang, S. Chen, Y. Zhang, Y. Wang, "CaT: Weakly Supervised Object Detection with Category Transfer", ICCV 2021, accepted.
- [3]. X. Zhang, S. Feng, Y. Zhou, Y. Zhang*, Y. Wang, "SAR: Scale-Aware Restoration Learning for 3D Tumor Segmentation", MICCAI 2021, accepted.
- [4]. M. Hu, T. Song, Y. Gu, J. Chen, X. Luo, Y. Chen, S. Zhang, Y. Zhang, "Fully Test-time Adaptation for Image Segmentation", MICCAI 2021, accepted.
- [5]. J. Chen, K. Yan, Y. Zhang, Y. Tang, X. Xu, Q. Liu, S. Sun, L. Huang, J. Xiao, A. Yuille, Y. Zhang, L. Lu, "Sequential Learning on Liver Tumor Boundary Semantics and Prognostic Biomarker Mining", MICCAI 2021, accepted.
- [6]. F. Ye, H. Zheng, C. Huang, Y. Zhang*, "Deep Unsupervised Image Anomaly Detection: an Information Theoretic Framework", ICIIP 2021, accepted.
- [7]. Z. Cheng, S. Chen, Y. Zhang, "Semi-supervised 3D Hand-Object Pose Estimation via Pose Dictionary Learning", ICIIP 2021, accepted.
- [8]. L. Du, L. Hu, X. Zhang, Y. Zhang, Y. Zhang, Y. Wang, "Unsupervised Segmentation Framework with Active Contour Models for Cine Cardiac MRI", ICIIP 2021, accepted.
- [9]. Q. Xu, R. Zhang, Y. Zhang*, Y. Wang, Q. Tian, "A Fourier-based Framework for Domain Generalization", CVPR 2021 (oral), pp. 14383-14392.
- [10]. H. Wu, J. Yao, Y. Zhang, Y. Wang, "Cooperative Learning for Noisy Supervision", ICME 2021 (Oral).
- [11]. C. Xu, S. Chen*, M. Li, Y. Zhang*, "Invariant Teacher and Equivariant Student for Unsupervised 3D Human Pose Estimation", AAAI 2021, pp. 3013-3021.
- [12]. C. Wen, Y. Pan, J. Chang, Y. Zhang, S. Chen, Y. Wang, M. Han, Q. Tian, "Handwritten Chinese Font Generation with Collaborative Stroke Refinement", WACV 2021, pp. 3882-3891.
- [13]. K. Du, Y. Zhang*, H. Guan, "From Quantized DNNs to Quantizable DNNs", BMVC 2020.
- [14]. M. Li, S. Chen*, Y. Zhang*, I. Tsang, "Graph Cross Networks with Vertex Infomax Pooling", NeurIPS 2020 (Oral).
- [15]. K. Du, Y. Zhang*, H. Guan, Q. Tian, Y. Wang, S. Cheng, J. Lin, "FTL: A universal framework for training low-bit DNNs via Feature Transfer", ECCV 2020.
- [16]. P. Zhao, L. Xie, C. Ju, Y. Zhang*, Y. Wang, Q. Tian, "Bottom-Up Temporal Action Localization with Mutual Regularization", ECCV 2020. (Source code)
- [17]. Y. Xue, S. Feng, Y. Zhang*, X. Zhang, Y. Wang, "Dual-task Self-supervision for Cross-Modality Domain Adaptation", MICCAI 2020, pp. 408-417.
- [18]. M. Hu, M. Mailard*, Y. Zhang*, T. Ciceri, G. L. Barbera, I. Bloch, P. Gori, "Knowledge distillation from multi-modal to mono-modal segmentation networks", MICCAI 2020, pp. 773-781.
- [19]. M. Li, S. Chen*, Y. Zhao, Y. Zhang*, Y. Wang, Q. Tian, "Dynamic Multiscale Graph Neural Networks for 3D Skeleton-Based Human Motion Prediction", CVPR 2020 (Oral), pp. 214-223. (Source code)
- [20]. Y. Hu, S. Chen*, Y. Zhang*, X. Gu, "Collaborative Motion Prediction via Neural Motion Message Passing", CVPR 2020 (Oral), pp. 6319-6328. (Source code)

- [21]. X. Liao, W. Li, Q. Xu, X. Wang*, B. Jin*, X. Zhang, Y. Wang, Y. Zhang*, "Iteratively-Refined Interactive 3D Medical Image Segmentation with Multi-Agent Reinforcement Learning", CVPR 2020, pp. 9394-9402
- [22]. C. Li, X. Chen, Y. Zhang*, S. Chen, D. Lv, Y. Wang, "Dual Graph Embedding for Object-Tag Link Prediction on the Knowledge Graph", in Proceedings of the 11th IEEE International Conference on Knowledge Graph, ICKG 2020, pp. 283-290.
- [23]. J. Su, X. Chen, Y. Zhang*, S. Chen, D. Lv, C. Li, "Collaborative Adversarial Learning for Relational Learning on Multiple Bipartite Graphs", in Proceedings of the 11th IEEE International Conference on Knowledge Graph, ICKG 2020, pp. 466-473.
- [24]. Z. Tan, W. Hu, Y. Zhang, H. Ding, "Online Popularity Prediction of Video Segments Towards More Efficient Content Delivery Networks", IEEE GLOBECOM 2019.
- [25]. H. Wu, J. Yao, J. Wang, Y. Chen, Y. Zhang, Y. Wang, "Collaborative Label Correction via Entropy Thresholding", ICDM 2019, pp. 1390-1395.
- [26]. B. Lai, S. Peng, G. Yao, Y. Zhang, X. Zhang, Y. Wang, H. Zhao, "Spatial Regularized Classification Network for Spinal Dislocation Diagnosis", H.-I. Suk et al. (Eds.): MLMI 2019, LNCS 11861, pp 9-17, 2019.
- [27]. S. Peng, B. Lai, G. Yao, X. Zhang, Y. Zhang, Y. Wang, H. Zhao, "Learning-Based Bone Quality Classification Method for Spinal Metastasis", H.-I. Suk et al. (Eds.): MLMI 2019, LNCS 11861, pp. 426-434, 2019.
- [28]. Y. Zhou, Y. Zhang, Y. Wang, Q. Tian, "Accelerate CNN via Recursive Bayesian Pruning", ICCV 2019, pp. 3306-3315.
- [29]. M. Li, S. Chen, X. Chen, Y. Zhang, Y. Wang, Q. Tian, "Actional-Structural Graph Convolutional Networks for Skeleton-based Action Recognition", CVPR 2019, pp. 3595-3603.
- [30]. Y. Hu, S. Chen, X. Chen, Y. Zhang and X. Gu, "Neural Message Passing for Visual Relationship Detection", ICML 2019 workshop on Learning and Reasoning with Graph-Structured Representations.
- [31]. H. Zheng, J. Yao, Y. Zhang, I. Tsang, J. Wang, "Understanding VAEs in Fisher-Shannon Plane", AAAI 2019, pp. 5917-5924.
- [32]. J. Yao, H. Wu, Y. Zhang, I. Tsang, J. Sun, "Safeguarded Dynamic Label Regression for Noisy Supervision", AAAI 2019, pp. 9103-9110.
- [33]. B. Han, J. Yao, G. Niu, M. Zhou, I. Tsang, Y. Zhang, M. Sugiyama, "Masking: A New Perspective of Noisy Supervision", NeurIPS 2018: 5841-5851.
- [34]. K. Ren, Y. Fang, W. Zhang, S. Liu, J. Li, Y. Zhang, Y. Yu, J. Wang, "Learning Multi-touch Conversion Attribution with Dual-attention Mechanisms for Online Advertising", CIKM 2018, pp. 1433-1442.
- [35]. H. Guan, G. Yao, Y. Zhang, Y. Gu, H. Zhao, Y. Zhang, "Deep Dual-view Network with Smooth Loss for Spinal Metastases Classification", VCIP 2018.
- [36]. Y. Wang, L. Xie, S. Qiao, Y. Zhang, W. Zhang, A. Yuille, "Multi-Scale Spatially-Asymmetric Recalibration for Image Classification", ECCV 2018, pp. 523-539.
- [37]. J. Chang, Y. Gu, Y. Zhang, Y. Wang, "Chinese Handwriting Imitation with Hierarchical Generative Adversarial Network", BMVC 2018: 290.
- [38]. J. Wang, J. Yao, Y. Zhang, R. Zhang, "Collaborative Learning for Weakly Supervised Object Detection", IJCAI-ECAI-2018, pp. 971-977.
- [39]. Y. Zhang, Y. Zhang, W. Cai, "Separating Style and Content for Generalized Style Transfer", CVPR 2018, pp. 8447-8455.

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- [40]. Y. Li, M. Li, Y. Zhang, Y. Wang, "Unsupervised Local Facial Attributes transfer Using Dual Discriminative Adversarial Networks", ICME 2018.
- [41]. Y. Zhou, S. Huang, Y. Zhang, Y. Wang, "Deep Hashing with Triplet Quantization Loss", VCIP 2017.
- [42]. Z. Wang, Y. Gu, Y. Zhang, J. Zhou, X. Gu, "Clothing Retrieval with Visual Attention Model", VCIP 2017.
- [43]. Y. Wang, L. Xie, C. Liu, S. Qiao, Y. Zhang, W. Zhang, Q. Tian, A. Yuille, "SORT: Second-Order Response Transform for Visual Recognition", ICCV 2017, pp. 1359-1368.
- [44]. S. Huang, Y. Xiong, Y. Zhang, J. Wang, "Unsupervised Triplet Hashing for Fast Image Retrieval", ACM Multimedia (Thematic Workshops) 2017, pp. 84-92.
- [45]. W. Wang, Y. Zhang, J. Hu, "Distance Metric Learning with Eigenvalue Fine Tuning", IJCNN 2017, pp. 502-509.
- [46]. Y. Zhang, Y. Wang, S. Zhou, W. Cai, Y. Zhang, "From Theory to Practice: Efficient Active Cost-sensitive Classification with Expected Error Reduction", SDM 2017, pp. 153-161.
- [47]. S. Huang, Z. Xu, D. Tao, Y. Zhang, "Part-Stacked CNN for Fine-Grained Visual Categorization", CVPR 2016.
- [48]. X. Zhe, S. Huang, Y. Zhang, D. Tao, "Augmenting Strong Supervision Using Web Data for Fine-grained Categorization", ICCV 2015.
- [49]. J. Yao, Y. Zhang, Z. Xu, J. Sun, J. Zhou, X. Gu, "Joint Latent Dirichlet Allocation for Non-IID Social Tags, Proc. of ICME2015, pp. 1-6.
- [50]. Y. Zhang, Y. Wei, J. Ren, "Multi-Touch Attribution in Online Advertising with Survival Theory", in Proc. of ICDM 2014, pp. 687-696.
- [51]. W. Wang, W. Cai, Y. Zhang, "Stability-based Stopping Criterion for Active Learning", in Proc. of ICDM 2014, pp. 1019-1024.
- [52]. W. Cai, Y. Zhang, S. Zhou, W. Wang, C. Ding, X. Gu, "Active Learning for Support Vector Machines with Maximal Model Change", in Proc. of ECML/PKDD 2014, pp. 211-226.
- [53]. Z. Xu, D. Tao, Y. Zhang, J. Wu, A. Tsoi, "Architectural Style Classification using Multinomial Latent Logistic Regression", ECCV2014, pp. 600-615.
- [54]. M. Zhang, C. Ding, Y. Zhang, F. Nie, "Feature Selection at the Discrete Limit", in Proc. of AAAI 2014, pp. 1355-1361.
- [55]. J. Yan, Y. Tian, H. Zha, X. Yang, Y. Zhang, S. Chu, "Joint optimization for consistent multiple graph matching", in Proc. of ICCV 2013, pp. 4321-4328.
- [56]. W. Cai, Y. Zhang, J. Zhou, "Maximizing Expected Model Change for Active Learning in Regression", in Proc. of ICDM 2013, pp. 51-60.