

# Dr. Xinggang Wang Assistant Professor

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RESEARCH INTERESTS	Computer vision & deep learning: object recognition, object detection, weakly-supervised visual learning.	
EDUCATION	Huazhong University of Science and Technology, China,	09/2010 - 11/2014
	Ph.D. in Communication and Information System. Advisor: Prof. Wenyu Liu	
	Huazhong University of Science and Technology, China,	09/2009 - 06/2010
	M.S. in Communication and Information System. Advisor: Prof. Wenyu Liu	
	Huazhong University of Science and Technology, China,	09/2005 - 06/2009
	B.S. in Electronics and Information Engineering	
PROFESSIONAL EXPERIENCE	Assistant Professor @ HUST, China	12/2014 - now
	Leading a research group with 3 Ph.D students and 11 master students doing research in computer vision and deep learning.	
	Visiting Graduate Researcher @ UCLA, USA	02/2013 - 09/2013
	I was supervised by Prof. Alan Yuille and worked on object recognition using compositional models.	
	Intern @ Microsoft Research Asia, China	12/2011 - 11/2012
	I was mentored by Prof. Zhuowen Tu and collaborated with Prof. Yi Ma, worked on the applications of low-rank optimization, object recognition, object discovery in un-labeled images, and semi-supervised codebook learning.	
HONOURS AND AWARDS	Visiting Scholar @ Temple University, USA	06/2010 - 08/2011
	I was supervised by Prof. Longin Latecki and worked on object detection, image classification, shape based object modeling and machine learning.	
	Outstanding reviewers of the Pattern Recognition journal, the Neurocomputing journal, the Pattern Recognition Letter journal.	2017
	Nature & Science Second Prize, Hubei Province.	2017
	Excellent Ph.D. Thesis Award Nomination, China Education Society OF ElectronicsCESE.	2017
	Excellent Ph.D. Thesis Award, Hubei Province.	2016
SELECTED FUNDS	Young Elite Sponsorship Program by China Association for Science and Technology. <sup>1</sup>	2015
	Microsoft Research Asia Fellow Award <sup>2</sup>	2012
	National Scholarship, Huazhong University of Science and Technology	2012
	Excellent Bachelor Thesis, Huazhong University of Science and Technology	2009
	National Ziqiang Scholarship, Huazhong University of Science and Technology	2008
	Innovative Student, Huazhong University of Science and Technology	2007
SELECTED PATENTS	Technological Innovation Key Project, Hubei Province	2018-2010
	HUST-Horizon Computer Vision Research Center	2017-2020
	CCF-Tencent Open Research Fund	2017
	NSFC 61503145, Discriminative dictionary learning for image understanding,	2016-2018
SELECTED PUBLICATIONS	Young Elite Sponsorship Program by CAST, No. YESS 20150077	2015-2017
	A convolutional network based end-to-end object detection method . Patent number: CN201611241694.3.	
	A deep learning based video frame up-conversion method and system. Patent number: CN201611241691.X	

## TOP CONFERENCES

1. Zilong Huang, Xinggang Wang\*, Jiasi Wang, Wenyu Liu, Jingdong Wang. Weakly-Supervised Semantic Segmentation Network with Deep Seeded Region Growing. CVPR, 2018.
2. Jianxiang Ma, Anlong Ming, Zilong Huang, Xinggang Wang, Yu Zhou. Object-Level Proposals. ICCV, 2017

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<sup>1</sup>one of the 180 award-winners from all the science and technology areas in China.

<sup>2</sup>one of the 10 winners out of ~100 excellent applicants from top Asian universities.

3. Peng Tang, Xinggang Wang, Xiang Bai, and Wenyu Liu. Multiple Instance Detection Network with Online Instance Classifier Refinement. CVPR, 2017.
4. Minghui Liao, Baoguang Shi, Xiang Bai, Xinggang Wang, Wenyu Liu. TextBoxes: A Fast Text Detector with a Single Deep Neural Network. AAAI, 2017
5. Baoguang Shi, Xinggang Wang, Pengyuan Lv, Cong Yao, Xiang Bai. Robust Scene Text Recognition with Automatic Rectification. CVPR, 2016
6. Xinggang Wang, Zhuotun Zhu, Cong Yao, Xiang Bai. Relaxed Multiple-Instance SVM with Application to Object Discovery. IEEE International Conference on Computer Vision (ICCV), 2015.
7. Wei Shen, Xinggang Wang, Yan Wang, Xiang Bai, Zhijiang Zhang. DeepContour: A Deep Convolutional Feature for Contour Detection. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2015, Boston, USA.
8. Xiaojie Guo, Xinggang Wang, Liang Yang, Xiaochun Cao, Yi Ma. Robust Foreground Detection Using Smoothness and Arbitrariness Constraints. European Conference on Computer Vision (ECCV), Zurich, September, 2014
9. Xinggang Wang, Baoyuan Wang, Xiang Bai, Wenyu Liu, Zhuowen Tu. Max-Margin Multiple Instance Dictionary Learning. International Conference on Machine Learning (ICML), 2013, Atlanta, USA.
10. Xinggang Wang, Xiang Bai, Tianyang Ma, Wenyu Liu, Longin Latecki. Fan Shape Model for Object Detection. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2012, Providence, USA.
11. Xinggang Wang, Xiang Bai, Xingwei Yang, Wenyu Liu, Longin Jan Latecki. Maximal Cliques that Satisfy Hard Constraints with Application to Deformable Object Model Learning. Neural Information Processing Systems Conference (NIPS), 2011, Granada, Spain. (Google Scholar Citations=6)
12. Xinggang Wang, Xiang Bai, Wenyu Liu, Longin Latecki. Feature Context for Object Detection and Image Classification. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR), 2011, Colorado Spring, USA.
13. Xiang Bai, Bo Wang, Xinggang Wang, Wenyu Liu, Zhuowen Tu. Co-Transduction for Shape Retrieval. European Conference on Computer Vision (ECCV), 2010, Crete, Greece.
14. Bo Wang, Xiang Bai, Xinggang Wang, Wenyu Liu, Zhuowen Tu. Object Recognition using Junctions. European Conference on Computer Vision (ECCV), 2010, Crete, Greece.
15. Xiang Bai, Xinggang Wang, Longin Jan Latecki, Wenyu Liu, Zhuowen Tu. Active Skeleton for Non-rigid Object Detection. IEEE International Conference on Computer Vision (ICCV), 2009, Kyoto, Japan.

## JOURNALS

16. Baoguang Shi, Mingkun Yang, Xinggang Wang, Pengyuan Lyu, Cong Yao, Xiang Bai. ASTER: An Attentional Scene Text Recognizer with Flexible Rectification. IEEE Trans. on PAMI, accepted.
17. Yuan Li, Xinggang Wang, Wenyu Liu, Bin Feng. Deep attention network for joint hand gesture localization and recognition using static RGB-D images. Information Sciences. 441: 66-78 (2018)
18. Chao Li, Xinggang Wang\*, Wenyu Liu, Longin Latecki. DeepMitosis: Mitosis Detection via Deep Detection, Verification and Segmentation Networks. Medical image analysis. 45: 121-133 (2018)
19. Xinggang Wang, Yongluan Yan, Peng Tang, Xiang Bai, Wenyu Liu. Revisiting Multiple Instance Neural Networks. Pattern Recognition, 2018.
20. Peng Tang, Xinggang Wang\*, Zilong Huang, Xiang Bai, Wenyu Liu. Deep Patch Learning for Weakly Supervised Object Classification and Discovery. Pattern Recognition, Volume 71, Pages 446-459 (November 2017).
21. Chao Li, Xinggang Wang, Wenyu Liu. Neural features for pedestrian detection. Neurocomputing, Volume 238, 17 May 2017, Pages 420-432
22. Peng Tang, Jin Zhang, Xinggang Wang\*, Bin Feng, Fabio Roli, Wenyu Liu. Learning Extremely Shared Middle-level Image Representation for Scene Classification. Knowledge and Information Systems (KAIS), doi:10.1007/s10115-016-1015-z.
23. Xinggang Wang, Xiong Duan, Xiang Bai. Deep sketch feature for cross-domain image retrieval. Neurocomputing, Volume 207, 26 September 2016, Pages 387-397. [Github]
24. Zhuotun Zhu, Xinggang Wang\*, Song Bai, Cong Yao, Xiang Bai. Deep Learning Representation using Autoencoder for 3D Shape Retrieval. Neurocomputing, Volume 204, 5 September 2016, Pages 41-50

25. Yingying Zhu, Chengquan Zhang, Duoyou Zhou, Xinggang Wang, Xiang Bai, Wenyu Liu. Traffic Sign Detection and Recognition using Fully Convolutional Network Guided Proposals. *Neurocomputing*, Volume 214, 19 November 2016, Pages 758-766
26. Wei Shen, Yuan Jiang, Wenjing Gao, Dan Zeng, Xinggang Wang. Shape recognition by bag of skeleton-associated contour parts. *Pattern Recognition Letters*, Volume 83, Part 3, 1 November 2016, Pages 321-329
27. Sihua Yi, Nan Jiang, Bin Feng, Xinggang Wang, Wenyu Liu. Online similarity learning for visual tracking. *Information Sciences*, 364-365: 33-50 (2016)
28. Sihua Yi, Nan Jiang, Xinggang Wang, Wenyu Liu. Individual adaptive metric learning for visual tracking. *Neurocomputing* 191: 273-285 (2016)
29. Yang Wang, Xinggang Wang\*, Wenyu Liu. Unsupervised Local Deep Feature for Image Recognition. *Information Sciences* (2016), Volume 351, 10 July 2016, Pages 67-75
30. Chuanping Hu, Xiang Bai, Li Qi, Xinggang Wang, Gengjian Xue, Lin Mei. Learning Discriminative Pattern for Real-Time Car Brand Recognition. *IEEE Trans. Intelligent Transportation Systems* 16(6): 3170-3181 (2015)
31. Xiang Bai, Song Bai, Xinggang Wang\*. Beyond diffusion process: Neighbor set similarity for fast re-ranking. *Inf. Sci.* 325: 342-354 (2015)
32. Xiang Bai, Cong Rao, Xinggang Wang\*. Shape Vocabulary: A Robust and Efficient Shape Representation for Shape Matching, *IEEE Transactions on Image Processing* 23(9): 3935-3949 (2014)
33. Chen Duan, Xinggang Wang, Shuiming Shu, Changwei Jing, and Huawei Chang. Thermodynamic design of Stirling engine using multi-objective particle swarm optimization algorithm, *Energy Conversion and Management*, Volume 84, August 2014, Pages 88-96.
34. Xinggang Wang, Bin Feng, Xiang Bai, Wenyu Liu, Login Latecki. Bag of Contour Fragments for Robust Shape Classification. *Pattern Recognition*, Volume 47, Issue 6, June 2014, Pages 2116-2125.
35. Xinggang Wang, Zhengdong Zhang, Yi Ma, Xiang Bai, Wenyu Liu, Zhuowen Tu. Robust Subspace Discovery via Relaxed Rank Minimization. *Neural Computation*, Vol. 26, No. 3 April 2014, Pages 611-635.

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37. Xin Yang, Xinggang Wang, Tim Cheng. OGB: A Distinctive and Efficient Feature for Mobile Augmented Reality. *International Conference on Multimedia Modeling (MMM)*, 2016
38. Xinggang Wang, Xin Yang, Wenyu Liu, Chen Duan, Longin Latecki. Location-Aware Image Classification. *International Conference on Multimedia Modeling (MMM)*, 2016
39. Weichao Qiu, Xinggang Wang, Xiang Bai, Alan Yuille, Zhuowen Tu. Scale-space SIFT Flow, *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2014, Steamboat Springs CO, USA.
40. Song Bai, Xinggang Wang, Cong Yao, Xiang Bai. Multiple Stage Residual Model for Accurate Image Classification. *Asian Conference on Computer Vision (ACCV)*, 2014.
41. Wei Shen, Xinggang Wang, Cong Yao, Xiang Bai. Shape Recognition by Combining Contour and Skeleton into a Mid-level Representation. *China Conference on Pattern Recognition (CCPR)*, Shanghai, Chian, 2014.
42. Xinggang Wang, Zhengdong Zhang, Yi Ma, Xiang Bai, Wenyu Liu, Zhuowen Tu. One-Class Multiple Instance Learning via Robust PCA for Common Object Discovery. *Asian Conference on Computer Vision (ACCV)*, 2012, Daejeon, Korea.
43. Yingying Zhu, Xinggang Wang, Cong Yao, Xiang Bai. Traffic sign classification using two-layer image representation. *International Conference on Image Processing (ICIP)*, 2013, Melbourne, Australia.
44. Yueming Wang, Xinggang Wang, Shaojun Zhu, Xiang Bai, Wenyu Liu. Adjacent Coding for Image Classification. *International Conference on Pattern Recognition (ICPR)*, 2012, Tsukuba Science City, Japan.
45. Quannan Li, Xinggang Wang, Wei Wang, Yuan Jiang, Zhi-Hua Zhou, Zhuowen Tu. Disagreement-Based Multi-System Tracking. *ACCV Workshop of Detection and Tracking in Challenging Environments*, 2012.
46. Meng Yi, Tatyana Nuzhnaya, Vasileios Megalooikonomou, Xinggang Wang, Longin Jan Latecki, Mark Kohn, Robert Steiner. Lung Image Classification using Locality-Constrained Linear Coding. *STMI 2012: MICCAI Workshop on Sparsity Techniques in Medical Imaging*.

INVITED TALKS	Modeling and Learning in Object Recognition, in Institute of Information Engineering, CAS, Beijing (10/2013), in Shanghai Univ. (03/2014), in Zhejiang Univ. (03/2014), and in Xidian Univ. (10/2014). Multi-instance learning and its applications in computer vision. VALSE 2015 Weakly supervised deep learning for object classification and detection. Shenzhen Univ. (11/2016), Horizon Robotics (11/2017) Weakly-Supervised Semantic Segmentation Network with Deep Seeded Region Growing. VALSE, Dalian (04/2018).
OTHER EXPERIENCE	IPAM Graduate Summer School: Computer Vision, Los Angeles, USA. 07/2013-08/2013 Vision, Learning and Pattern Recognition (VLPR) Summer School, Chengdu, China. 08/2011 Member and project leader in Dian Group, HUST. 03/2007-06/2009 Member in Seedclass 2005, HUST. 06/2007-06/2009
SERVICE	Secretary-General, Image, Video & Communication (IVC) Technical Committee, China Society of Image and Graphics (CSIG) Reviewer for the following journals/institutes/conferences: TPAMI / JMLR / Pattern Recognition / T. Cybernetics / TIP / TITS / CVIU/ Neurocomputing / NIPS / ICDM / ICCV / ECCV / CVPR / ICME / ICIP / ICPR. Website chair of VALSE 2016 / Website chair of IEEE SIDAS 2016 / Website chair of IEEE CAS conference on intelligent media computing VALSE VOOC, Member of CSIG, Member of CCF, Member of IEEE
TEACHING	Data structure, computer vision & deep learning, The C programming language.