

Jingdong Wang

Visual Computing Group
Microsoft Research Asia
13/F, Building 2
No. 5 Danling Street, Haidian District
Beijing 100080, P.R.China

Phone: (+86)13661386588 (M) (+8610)59173786 (O)
Fax: (86-10) 88099511
welleast@outlook.com
<https://jingdongwang2017.github.io/>

Education

Ph.D, Computer Science The Hong Kong University of Science and Technology	2004.09 - 2007.08
--	-------------------

M.Eng, Automation Tsinghua University Excellent master degree thesis award	2001.09 - 2004.07
--	-------------------

B.Eng, Automation Tsinghua University Rank: 1/150	1997.09 - 2001.07
---	-------------------

Research Interests

Computer vision and multimedia search

Neural architecture design, human pose estimation, semantic segmentation, object detection, image classification, large scale indexing, large scale image search, salient object detection.

Machine learning and pattern recognition

Large scale machine learning, graph-based learning, probabilistic graphical modeling, kernel methods, spectral clustering.

Work Experience

Senior Principal Research Manager (formerly Principal Research Manager) Microsoft Research Asia	2019.09 - present
--	-------------------

Ph.D Supervisor University of Science and Technology, China	2017.09 - present
--	-------------------

Principal Researcher (formerly Senior Researcher) Microsoft Research Asia	2017.09 - 2019.08
--	-------------------

Principal Researcher (formerly Lead Researcher) Microsoft Research Asia	2015.09 - 2017.08
--	-------------------

Senior Researcher (formerly Lead Researcher) Microsoft Research Asia	2013.09 - 2015.08
---	-------------------

Senior Researcher (formerly Researcher) Microsoft Research Asia	2012.03 - 2013.08
--	-------------------

Researcher (formerly Associate Researcher) Microsoft Research Asia	2007.09 - 2012.02
---	-------------------

Research and Teaching Assistants The Hong Kong University of Science and Technology Advisor: Long Quan	2004.09 - 2007.08
Research Intern Microsoft Research Asia Mentor: Heung-Yeung Shum	2005.07 - 2005.12 2003.09 - 2004.05
Research Assistant Tsinghua University Advisor: Changshui Zhang	2001.09 - 2004.07

Professional Activities

Area/track chair

CVPR 2021, IJCAI 2021, ECCV 2020, CVPR 2020, IJCAI 2020, ICCV 2019, IJCAI 2019, ACMMM 2018, ICCV 2017, CVPR 2017, ECCV 2016, ACMMM 2015, ICPR 2018, ICIP 2017, ICME 2015, ICME 2012

Senior programme committee member

AAAI 2019, IJCAI 2018, AAAI 2018

Conference organizers

ACMMM Asia 2020, general chair

ICME 2019, workshop co-chair

ACM ICMR 2014, special session co-chair

Associate editors/editorial board members

IEEE Transactions on Pattern Analysis and Machine Intelligence (Sept., 2018 -)

IEEE Transactions on Circuits and Systems for Video Technology (Jan., 2018 -)

IEEE Transactions on Multimedia (May, 2016 -)

Neurocomputing (April, 2015 - May, 2017)

Multimedia Tools and Applications (October, 2011 -)

Workshop organizers

The 2nd workshop and challenge on Target Re-Identification and Multi-Target Multi-Camera Tracking (CVPR 2019)

The 2nd International Workshop on Deep Learning for Pattern Recognition (DLPR2018), (ICPR 2018)

The 1st workshop on Target Re-Identification and Multi-Target Multi-Camera Tracking (CVPR 2017)

The 1st International Workshop on Deep Learning for Pattern Recognition (DLPR2016), (ICPR 2016)

Big Media Data: Understanding, Search, and Mining (ICDM 2015)

Advances in LargeScale Multimedia Data Collection, Mining and Retrieval (ICME 2012)

Special issue guest editor

Fine-grained image categorization (IEEE Trans. Pattern Anal. Mach. Intell., ongoing)

Intelligent urban computing with big data (Machine Vision and Applications, 2017)

Big Media Data: Understanding, Search, and Mining (IEEE Transactions on Big Data, 2016)

Ad Hoc Web Multimedia Analysis with Limited Supervision (Multimedia Tools and Applications, 2015)

Programme committee members or conference reviewers

ICML (2018), ICLR (2018 - 2019), CVPR (2009 - 2016, 2018), ICCV (2007/09/11/13/15), ECCV (2010/12/14), ACMMM (2009/12/13/14/17), NIPS (2014 - 2018) SIGIR (2011/13), SIGGRAPH Asia (2010), SIGKDD (2010), SIGCHI (2010), IJCAI (2011/13), ICMR (2011/12), ICME (2009/10/11), CIVR (2010), IJCNN (2007/09), ACCV (2007), ICPR (2006)

Journal reviewers

TPAMI, IJCV, JMLR, TIP, TKDE, TCSVT, TMM, PR, TOIS, TOSN, TOMM, TIST, CVIU, MVA, IVC

Honors and Awards

Outstanding service award	ICME	2019
ACM Distinguished Member		2018
COCO keypoints detection challenge	Second place (ECCV 2018)	2018
IAPR Fellow		2018
Best paper runner up	Workshop on Big Data Analytics for Social Computing	2018
Best paper award finalist	ACMMM	2015
Outstanding reviewer	CVPR	2014
Gold star	Microsoft	2009
Graduate Fellowship	HKUST	2004 - 2007
Excellent Master Degree Thesis Award	Tsinghua University	2004
Excellent Master Scholarship	Tsinghua University	2003
Title of Graduate with Honors (top 5%)	Tsinghua University	2001
Rockwell Scholarship	Tsinghua University	2000
Friend-Eastern Communications Scholarship	Tsinghua University	1999
Outstanding Student Scholarship	Tsinghua University	1998

Publications (Google Scholar citations: 17000+, h-index: 60)

Google Scholar citations to my articles (PDF Document Clickable Link):

<https://scholar.google.com/citations?user=z5SPCmgAAAAJ&hl=en>

The interns and supervisees are in bold.

Book

- [1] Jingdong Wang. Graph Based Image Segmentation: A Modern Approach. *ISBN-10: 3639110749, ISBN-13: 978-3639110746*. VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG. 2008.

Book chapters

- [1] Jingdong Wang, **Jing Wang**, Gang Zeng, Rui Gan, Shipeng Li, and Baining Guo. Fast Neighborhood Graph Search using Cartesian Concatenation. *Multimedia Data Mining and Analytics: Disruptive Innovation. Edited by Aaron K. Baughman, Jiang Gao, Jia-Yu Pan, and Valery Petrushin*, 397-417, Springer, 2015.
- [2] Jingdong Wang, **Jing Wang**, Qifa Ke, Gang Zeng, and Shipeng Li. Fast Approximate K-Means via Cluster Closures. *Multimedia Data Mining and Analytics: Disruptive Innovation. Edited by Aaron K. Baughman, Jiang Gao, Jia-Yu Pan, and Valery Petrushin*, 373-395, Springer, 2015.
- [3] Jingdong Wang, **Yinghai Zhao**, and Xian-Sheng Hua. Image Search by Color Map. *Internet Multimedia Search and Mining. Edited by Xian-Sheng Hua, Marcel Worring, and Tat-Seng Chua*. Bentham Science Publishers, 2010.

Technical reports

- [1] **Liming Zhao**, Jingdong Wang, Xi Li, Zhuowen Tu, and Wenjun Zeng. On the connection of deep fusion to ensembling. *CoRR*, abs/1611.07718, 2016.
- [2] Jingdong Wang, **Zhen Wei**, **Ting Zhang**, and Wenjun Zeng. Deeply-fused nets. *CoRR*, abs/1605.07716, 2016.

Top referred journals: TPAMI (11), IJCV (7), TOG (3), TIP (7), TMM (6), TOMM (2), TKDE (1)

- [1] Jingdong Wang, **Ke Sun**, **Tianheng Cheng**, **Borui Jiang**, **Chaorui Deng**, **Yang Zhao**, Dong Liu, Yadong Mu, Mingkui Tan, Xinggang Wang, Wenyu Liu, and Bin Xiao. Deep High-Resolution Representation Learning for Visual Recognition. *IEEE Trans. Pattern Anal. Mach. Intell.*, 2020.
- [2] **Yifan Liu**, Changyong Shu, Jingdong Wang, and CHunhua Shen. Structured Knowledge Distillation for Dense Prediction. *IEEE Trans. Pattern Anal. Mach. Intell.*, 2020.
- [3] **Zilong Huang**, Chunyu Wang, Xinggang Wang, Wenyu Liu, and Jingdong Wang. Semantic Image Segmentation by Scale-Adaptive Networks. *IEEE Trans. Image Processing.*, Accepted, 2019.
- [4] **Peng Tang**, Chunyu Wang, Xinggang Wang, Wenyu Liu, and Jingdong Wang. Object Detection in Videos by High Quality Object Linking. *IEEE Trans. Pattern Anal. Mach. Intell.*, 2020.
- [5] **Song Bai**, Zhichao Zhou, Jingdong Wang, Xiang Bai, Longin Jan Latecki and Qi Tian. Automatic Ensemble Diffusion for 3D Shape and Image Retrieval. *IEEE Trans. Image Processing.*, 28(1):88-101, 2019.
- [6] Jingdong Wang and **Ting Zhang**. Composite quantization. *IEEE Trans. Pattern Anal. Mach. Intell.*, 2019.
- [7] **Hong Liu**, Rongrong Ji, Jingdong Wang, and Chunhua Shen. Ordinal constraint binary coding for approximate nearest neighbor search. *IEEE Trans. Pattern Anal. Mach. Intell.*, Accepted, 2018.
- [8] Jingdong Wang, **Ting Zhang**, **Jingkuan Song**, Nicu Sebe, and Heng Tao Shen. A survey on learning to hash. *IEEE Trans. Pattern Anal. Mach. Intell.*, 40(4):769-790, 2018.
- [9] **Na Qi**, Yunhui Shi, Xiaoyan Sun, Jingdong Wang, Baocai Yin, and Junbin Gao. Multi-Dimensional Sparse Models. *IEEE Trans. Pattern Anal. Mach. Intell.*, 40(1):163-178, 2018.
- [10] **Qiurui Wang**, Chun Yuan, Jingdong Wang and Wenjun Zeng. Learning Attentional Recurrent Neural Network for Visual Tracking. *IEEE Trans. Multimedia*, 2018.
- [11] Weiyao Lin, Yang Shen, Junchi Yan, Mingliang Xu, Jianxin Wu, Jingdong Wang, and Ke Lu. Learning Correspondence Structures for Person Re-identification. *IEEE Trans. Image Processing*, 26(5):2438-2453, 2017.
- [12] **Dapeng Chen**, Zejian Yuan, Jingdong Wang, Gang Hua, and Nanning Zheng. Exemplar-Guided Similarity Learning on Polynomial Feature Map for Person Re-Identification. *International Journal of Computer Vision*, 123(3):392-414, 2017.
- [13] Jingdong Wang, **Huaizu Jiang**, Zejian Yuan, Ming-Ming Cheng, Xiaowei Hu, and Nanning Zheng. Salient Object Detection: A Discriminative Regional Feature Integration Approach. *International Journal of Computer Vision*, 123(2):251-268, 2017.
- [14] **Lingxi Xie**, Jingdong Wang, Weiyao Lin, Bo Zhang, and Qi Tian. Towards Reversal-Invariant Image Representation. *International Journal of Computer Vision*, 123(2):226-250, 2017.
- [15] **Dapeng Chen**, Zejian Yuan, Gang Hua, Jingdong Wang, and Nanning Zheng. Multi-timescale collaborative tracking. *IEEE Trans. Pattern Anal. Mach. Intell.*, 39(1):141-155, 2017.
- [16] **Liang Zheng**, Shengjin Wang, Jingdong Wang, and Qi Tian. Accurate image search with multi-scale contextual evidences. *International Journal of Computer Vision*, 120(1):1-13, 2016.
- [17] **Dingwen Zhang**, Junwei Han, Chao Li, Jingdong Wang, and Xuelong Li. Detection of co-salient objects by looking deep and wide. *International Journal of Computer Vision*, 120(2):215-232, 2016.

- [18] Xi Li, Xueyi Zhao, Zhongfei Zhang, Fei Wu, Yueting Zhuang, Jingdong Wang, and Xuelong Li. Joint multilabel classification with community-aware label graph learning. *IEEE Trans. Image Processing*, 25(1):484–493, 2016.
- [19] Weiyao Lin, **Yang Mi**, Weiyue Wang, Jianxin Wu, Jingdong Wang, and Tao Mei. A diffusion and clustering-based approach for finding coherent motions and understanding crowd scenes. *IEEE Trans. Image Processing*, 25(4):1674–1687, 2016.
- [20] Xi Li, Liming Zhao, Lina Wei, Ming-Hsuan Yang, Fei Wu, Yueting Zhuang, Haibin Ling, and Jingdong Wang. Deepsaliency: Multi-task deep neural network model for salient object detection. *IEEE Trans. Image Processing*, 25(8):3919–3930, 2016.
- [21] **Jingkuan Song**, Heng Tao Shen, Jianfeng Wang, Zi Huang, Nicu Sebe, and Jingdong Wang. A distance-computation-free search scheme for binary code databases. *IEEE Trans. Multimedia*, 18(3):484–495, 2016.
- [22] Jinhui Tang, **Xiangbo Shu**, Zechao Li, Guo-Jun Qi, and Jingdong Wang. Generalized deep transfer networks for knowledge propagation in heterogeneous domains. *TOMCCAP*, 12(4s):68:1–68:22, 2016.
- [23] **Jianfeng Wang**, Jingdong Wang, Jingkuan Song, Xin-Shun Xu, Heng Tao Shen, and Shipeng Li. Optimized cartesian k-means. *IEEE Trans. Knowl. Data Eng.*, 27(1):180–192, 2015.
- [24] **Lingxi Xie**, Jingdong Wang, Bo Zhang, and Qi Tian. Fine-grained image search. *IEEE Trans. Multimedia*, 17(5):636–647, 2015.
- [25] Jingdong Wang, **Naiyan Wang**, **You Jia**, Jian Li, Gang Zeng, Hongbin Zha, and Xian-Sheng Hua. Trinary-projection trees for approximate nearest neighbor search. *IEEE Trans. Pattern Anal. Mach. Intell.*, 36(2):388–403, 2014.
- [26] Jingdong Wang, **Huaizu Jiang**, **Yangqing Jia**, Xian-Sheng Hua, Changshui Zhang, and Long Quan. Regularized tree partitioning and its application to unsupervised image segmentation. *IEEE Trans. Image Processing*, 23(4):1909–1922, 2014.
- [27] Qinghua Huang, **Bisheng Chen**, Jingdong Wang, and Tao Mei. Personalized video recommendation through graph propagation. *TOMCCAP*, 10(4):32:1–32:17, 2014.
- [28] **Peng Wang**, Gang Zeng, Rui Gan, Jingdong Wang, and Hongbin Zha. Structure-sensitive superpixels via geodesic distance. *International Journal of Computer Vision*, 103(1):1–21, 2013.
- [29] Houqiang Li, **Yang Wang**, Tao Mei, Jingdong Wang, and Shipeng Li. Interactive multimodal visual search on mobile device. *IEEE Trans. Multimedia*, 15(3):594–607, 2013.
- [30] **Tianjia Shao**, Weiwei Xu, Kun Zhou, Jingdong Wang, Dongping Li, and Baining Guo. An interactive approach to semantic modeling of indoor scenes with an RGBD camera. *ACM Trans. Graph.*, 31(6):136:1–136:11, 2012.
- [31] Tie Liu, Zejian Yuan, Jian Sun, Jingdong Wang, Nanning Zheng, Xiaoou Tang, and Heung-Yeung Shum. Learning to detect a salient object. *IEEE Trans. Pattern Anal. Mach. Intell.*, 33(2):353–367, 2011.
- [32] **Xinmei Tian**, Linjun Yang, Jingdong Wang, Xiuqing Wu, and Xian-Sheng Hua. Bayesian visual reranking. *IEEE Trans. Multimedia*, 13(4):639–652, 2011.
- [33] Jingdong Wang, Fei Wang, Changshui Zhang, Helen C. Shen, and Long Quan. Linear neighborhood propagation and its applications. *IEEE Trans. Pattern Anal. Mach. Intell.*, 31(9):1600–1615, 2009.
- [34] Tie Liu, Jingdong Wang, Jian Sun, Nanning Zheng, Xiaoou Tang, and Heung-Yeung Shum. Picture collage. *IEEE Trans. Multimedia*, 11(7):1225–1239, 2009.
- [35] Long Quan, Jingdong Wang, Ping Tan, and Lu Yuan. Image-based modeling by joint segmentation. *International Journal of Computer Vision*, 75(1):135–150, 2007.

- [36] Ping Tan, Gang Zeng, Jingdong Wang, Sing Bing Kang, and Long Quan. Image-based tree modeling. *ACM Trans. Graph.*, 26(3):87, 2007.
- [37] Long Quan, Ping Tan, Gang Zeng, Lu Yuan, Jingdong Wang, and Sing Bing Kang. Image-based plant modeling. *ACM Trans. Graph.*, 25(3):599–604, 2006.

Referred journals

- [1] **Guotian Xie**, Kuiyuan Yang, Ting Zhang, Jingdong Wang, and Jianhuang Lai. Balanced Decoupled Spatial Convolution for CNNs. *IEEE Trans. Neural Netw. Learning Syst.*, Accepted, 2019.
- [2] Shengkang Yu, Xi Li, Xueyi Zhao, Zhongfei Mark Zhang, Fei Wu, Jingdong Wang, Yue Ting Zhuang, and Xuelong Li. A bilinear ranking SVM for knowledge based relation prediction and classification. *IEEE Trans. Big Data*, Accepted, 2018.
- [3] Ruoyu Liu, Shikui Wei, Yao Zhao, Zhenfeng Zhu, and Jingdong Wang. Multi-View Cross-Media Hashing with Semantic Consistency. *IEEE MultiMedia*, Accepted, 2018.
- [4] **Baoguang Shi**, Xiang Bai, Wenyu Liu, and Jingdong Wang. Face Alignment with Deep Regression. *IEEE Trans. Neural Netw. Learning Syst.*, 29(1):183–194, 2018.
- [5] **Lingxi Xie**, Jingdong Wang, Bo Zhang, and Qi Tian. Incorporating visual adjectives for image classification. *Neurocomputing*, 182:48–55, 2016.
- [6] **Min Tan**, Baoyuan Wang, Zhaohui Wu, Jingdong Wang, and Gang Pan. Weakly supervised metric learning for traffic sign recognition in a lidar-equipped vehicle. *IEEE Trans. Intelligent Transportation Systems*, 17(5):1415–1427, 2016.
- [7] Congyan Lang, Jiashi Feng, Songhe Feng, Jingdong Wang, and Shuicheng Yan. Dual low-rank pursuit: Learning salient features for saliency detection. *IEEE Trans. Neural Netw. Learning Syst.*, 27(6):1190–1200, 2016.
- [8] **Shiyang Lu**, Tao Mei, Jingdong Wang, Jian Zhang, Zhiyong Wang, and Shipeng Li. Exploratory product image search with circle-to-search interaction. *IEEE Trans. Circuits Syst. Video Techn.*, 25(7):1190–1202, 2015.
- [9] Weiwei Xu, Zhouxu Shi, Mingliang Xu, Kun Zhou, Jingdong Wang, Bin Zhou, Jinrong Wang, and Zhenming Yuan. Transductive 3d shape segmentation using sparse reconstruction. *Comput. Graph. Forum*, 33(5):107–115, 2014.
- [10] Jingdong Wang, **Jiazhen Zhou**, **Hao Xu**, Tao Mei, Xian-Sheng Hua, and Shipeng Li. Image tag refinement by regularized latent dirichlet allocation. *Computer Vision and Image Understanding*, 124:61–70, 2014.
- [11] **Shiyang Lu**, Tao Mei, Jingdong Wang, Jian Zhang, Zhiyong Wang, and Shipeng Li. Browse-to-search: Interactive exploratory search with visual entities. *ACM Trans. Inf. Syst.*, 32(4):18:1–18:27, 2014.
- [12] Jingdong Wang, **Zhe Zhao**, **Jiazhen Zhou**, Hao Wang, Bin Cui, and Guojun Qi. Recommending flickr groups with social topic model. *Inf. Retr.*, 15(3-4):278–295, 2012.
- [13] **Tianjia Shao**, Weiwei Xu, KangKang Yin, Jingdong Wang, Kun Zhou, and Baining Guo. Discriminative sketch-based 3d model retrieval via robust shape matching. *Comput. Graph. Forum*, 30(7):2011–2020, 2011.
- [14] Jingdong Wang, **Liyan Jia**, and Xian-Sheng Hua. Interactive browsing via diversified visual summarization for image search results. *Multimedia Syst.*, 17(5):379–391, 2011.
- [15] Jingdong Wang, **Yinghai Zhao**, Xiuqing Wu, and Xian-Sheng Hua. A transductive multi-label learning approach for video concept detection. *Pattern Recognition*, 44(10-11):2274–2286, 2011.
- [16] Jingdong Wang and Xian-Sheng Hua. Interactive image search by color map. *ACM TIST*, 3(1):12:1–12:23, 2011.

- [17] **Zheng-Jun Zha**, Tao Mei, Jingdong Wang, Zengfu Wang, and Xian-Sheng Hua. Graph-based semi-supervised learning with multiple labels. *J. Visual Communication and Image Representation*, 20(2):97–103, 2009.
- [18] Fei Wang, Jingdong Wang, Changshui Zhang, and James T. Kwok. Face recognition using spectral features. *Pattern Recognition*, 40(10):2786–2797, 2007.
- [19] Jianguo Lee, Jingdong Wang, Changshui Zhang, and Zhaoqi Bian. Visual object recognition using probabilistic kernel subspace similarity. *Pattern Recognition*, 38(7):997–1008, 2005.

Top refereed conferences: CVPR (29), ICCV (16), ECCV (9), ACMMM (13), ICML (4), SIGIR (3), KDD (1), IJCAI (3), AAAI (1), NIPS (1)

- [1] **Baifeng Shi**, Dinghuai Zhang, Qi Dai, Zhanxing Zhu, Yadong Mu, and Jingdong Wang Informative Dropout for Robust Representation Learning: A Shape-bias Perspective. In *Proceedings of the 31th International Conference on Machine Learning*, ICML 2014.
- [2] Yuhui Yuan, Xilin Chen, and Jingdong Wang. Object-Contextual Representations for Semantic Segmentation. In *European Conference Computer Vision*, ECCV 2020.
- [3] Yuhui Yuan, Jingyi Xie, Xilin Chen, and Jingdong Wang. SegFix: Model-Agnostic Boundary Refinement for Segmentation. In *European Conference Computer Vision*, ECCV 2020.
- [4] **Yifan liu**, Chunhua Shen, Changqian Yu, and Jingdong Wang Efficient Semantic Video Segmentation with Per-frame Inference. In *European Conference Computer Vision*, ECCV 2020.
- [5] Fangyun Wei, Xiao Sun, Hongyang Li, Jingdong Wang, and Stephen Lin. Point-Set Anchors for Object Detection, Instance Segmentation and Pose Estimation. In *European Conference Computer Vision*, ECCV 2020.
- [6] **Bowen Cheng**, Bin Xiao, Jingdong Wang, Honghui Shi, Thomas S. Huang, Lei Zhang. HigherHRNet: Scale-Aware Representation Learning for Bottom-Up Human Pose Estimation. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2020.
- [7] **Baifeng Shi**, Qi Dai, Yadong Mu, and Jingdong Wang. Weakly-Supervised Action Localization by Generative Attention Modeling. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2020.
- [8] Yong Guo, Jian Chen, Jingdong Wang, Qi Chen, Jiezhong Cao, Zeshuai Deng, Yanwu Xu, and Minghui Tan. Closed-Loop Matters: Dual Regression Networks for Single Image Super-Resolution. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2020.
- [9] **Jianing Li**, Jingdong Wang, Qi Tian, Wen Gao, and Shiliang Zhang Global-Local Temporal Representations For Video Person Re-Identification. In *IEEE/CVF International Conference on Computer Vision*, ICCV 2019.
- [10] **Haibo Qiu**, Chunyu Wang, Jingdong Wang, Naiyan Wang, and Wenjun Zeng Cross View Fusion for 3D Human Pose Estimation. In *IEEE/CVF International Conference on Computer Vision*, ICCV 2019.
- [11] **Ke Sun**, Bin Xiao, Dong Liu, and Jingdong Wang. Deep High-Resolution Representation Learning for Human Pose Estimation. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2019.
- [12] **Yifan Liu**, Ke Chen, Chris Liu, Zengchang Qin, Zhenbo Luo, Jingdong Wang. Structured Knowledge Distillation for Semantic Segmentation. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2019.
- [13] Ruochen Fan, Ming-Ming Cheng, Qibin Hou, Tai-Jiang Mu, Jingdong Wang, Shi-Min Hu. S4Net: Single Stage Salient-Instance Segmentation. In IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2019.

- [14] **Xuguang Duan**, Wenbing Huang, Chuang Gan, Jingdong Wang, Wenwu Zhu, and Junzhou Huang. Weakly Supervised Dense Event Captioning in Videos. In *Proceedings of Advances in Neural Information Processing Systems, NIPS 2018*.
- [15] Bin Liu, Yue Cao, Mingsheng Long, Jianmin Wang, and Jingdong Wang. Deep Triplet Quantization. In *Proceedings of the 2018 ACM Conference on Multimedia Conference, MM 2018*.
- [16] Hao Xiao, Weiyao Lin, Bin Sheng, Ke Lu, Junchi Yan, Jingdong Wang, Errui Ding, Yihao Zhang, Hongkai Xiong. Group Re-Identification: Leveraging and Integrating Multi-Grain Information. In *Proceedings of the 2018 ACM Conference on Multimedia Conference, MM 2018*.
- [17] **Yumin Suh**, Jingdong Wang, Siyu Tang, Tao Mei, and Kyoung Mu Lee. Part-Aligned Bilinear Representations for Person Re-identification. In *European Conference Computer Vision, ECCV 2018*.
- [18] **Liming Zhao, Mingjie Li, Depu Meng**, Xi Li, Zhuowen Tu, Zhaoxiang Zhang, Yueting Zhuang, and Jingdong Wang. Deep Convolutional Neural Networks with Merge-and-Run Mappings. In *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2018*.
- [19] **Guotian Xie**, Jingdong Wang, Ting Zhang, Jianhuang Lai, Richang Hong, and Guo-Jun Qi. IGCv2: Interleaved Structured Sparse Convolutional Neural Networks. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018*.
- [20] **Zilong Huang**, Xinggang Wang, Jiasi Wang, Wenyu Liu, and Jingdong Wang. Weakly-Supervised Semantic Segmentation Network with Deep Seeded Region Growing. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018*.
- [21] Guo-Jun Qi, Liheng Zhang, Hao Hu, Marzieh Edraki, Jingdong Wang, and Xian-Sheng Hua. Global versus Localized Generative Adversarial Nets. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018*.
- [22] **Guotian Xie**, Ting Zhang, Kuiyuan Yang, Jianhuang Lai, and Jingdong Wang. Coupled Convolutions for CNNs. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence, New Orleans, Louisiana, USA, February 2-7, 2018, 2018*.
- [23] **Ting Zhang**, Guo-Jun Qi, Bin Xiao, and Jingdong Wang. Interleaved Group Convolutions. In *IEEE International Conference on Computer Vision, ICCV 2017, Venice, Italy, October 22-29, 2017*, pages 4383-4392, 2017.
- [24] **Liming Zhao**, Xi Li, Yueting Zhuang, and Jingdong Wang. Deeply-Learned Part-Aligned Representations for Person Re-Identification. In *IEEE International Conference on Computer Vision, ICCV 2017, Venice, Italy, October 22-29, 2017*, pages 3239-3248, 2017.
- [25] **Ke Sun**, Cuiling Lan, Junliang Xing, Jingdong Wang, Wenjun Zeng, Dong Liu. Human Pose Estimation using Global and Local Normalization. In *IEEE International Conference on Computer Vision, ICCV 2017, Venice, Italy, October 22-29, 2017*, pages 5600-5608, 2017.
- [26] **Song Bai**, Zhichao Zhou, Jingdong Wang, Xiang Bai, Longin Jan Latecki, Qi Tian. Ensemble Diffusion for Retrieval. In *IEEE International Conference on Computer Vision, ICCV 2017, Venice, Italy, October 22-29, 2017*, pages 774-783, 2017.
- [27] **Lixin Liao**, Yao Zhao, Shikui Wei, and Jingdong Wang. Finding the Secret of CNN Parameter Layout under Strict Size Constraint. In *Proceedings of the 2017 ACM on Multimedia Conference, MM 2017, Mountain View, CA, USA, October 23-27, 2017*, pages 997-1005, 2017.
- [28] Guo-Jun Qi, Jiliang Tang, Jingdong Wang, and Jiebo Luo. Mixture Factorized Ornstein-Uhlenbeck Processes for Time-Series Forecasting. In *Proceedings of the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Halifax, NS, Canada, August 13 - 17, 2017*, pages 987-995, 2017.

- [29] **Gangming Zhao**, Jingdong Wang, and Zhaoxiang Zhang. Random Shifting for CNN: a Solution to Reduce Information Loss in Down-Sampling Layers. In *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2017, Melbourne, Australia, August 19-25, 2017*, pages 3476–3482, 2017.
- [30] **Lingxi Xie**, **Liang Zheng**, Jingdong Wang, Alan L. Yuille, and Qi Tian. Interactive: Inter-layer activeness propagation. In *2016 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016, Las Vegas, NV, USA, June 27-30, 2016*, pages 270–279, 2016.
- [31] **Xiaojuan Wang**, **Ting Zhang**, Guo-Jun Qi, Jinhui Tang, and Jingdong Wang. Supervised quantization for similarity search. In *2016 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016, Las Vegas, NV, USA, June 27-30, 2016*, pages 2018–2026, 2016.
- [32] **Ting Zhang** and Jingdong Wang. Collaborative quantization for cross-modal similarity search. In *2016 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016, Las Vegas, NV, USA, June 27-30, 2016*, pages 2036–2045, 2016.
- [33] **Lingxi Xie**, Jingdong Wang, **Zhen Wei**, Meng Wang, and Qi Tian. Disturblabel: Regularizing CNN on the loss layer. In *2016 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016, Las Vegas, NV, USA, June 27-30, 2016*, pages 4753–4762, 2016.
- [34] Lingxi Xie, Qi Tian, John Flynn, Jingdong Wang, and Alan L. Yuille. Geometric neural phrase pooling: Modeling the spatial co-occurrence of neurons. In *Computer Vision - ECCV 2016 - 14th European Conference, Amsterdam, The Netherlands, October 11-14, 2016, Proceedings, Part I*, pages 645–661, 2016.
- [35] **Liang Zheng**, Zhi Bie, Yifan Sun, Jingdong Wang, Chi Su, Shengjin Wang, and Qi Tian. MARS: A video benchmark for large-scale person re-identification. In *Computer Vision - ECCV 2016 - 14th European Conference, Amsterdam, The Netherlands, October 11-14, 2016, Proceedings, Part VI*, pages 868–884, 2016.
- [36] **Qi Dai**, Jianguo Li, Jingdong Wang, and Yu-Gang Jiang. Binary optimized hashing. In *Proceedings of the 2016 ACM Conference on Multimedia Conference, MM 2016, Amsterdam, The Netherlands, October 15-19, 2016*, pages 1247–1256, 2016.
- [37] Jian Liang, Zhihang Li, Dong Cao, Ran He, and Jingdong Wang. Self-paced cross-modal subspace matching. In *Proceedings of the 39th International ACM SIGIR conference on Research and Development in Information Retrieval, SIGIR 2016, Pisa, Italy, July 17-21, 2016*, pages 569–578, 2016.
- [38] **Dapeng Chen**, Zejian Yuan, Gang Hua, Nanning Zheng, and Jingdong Wang. Similarity learning on an explicit polynomial kernel feature map for person re-identification. In *IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2015, Boston, MA, USA, June 7-12, 2015*, pages 1565–1573, 2015.
- [39] **Dingwen Zhang**, Junwei Han, Chao Li, and Jingdong Wang. Co-saliency detection via looking deep and wide. In *IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2015, Boston, MA, USA, June 7-12, 2015*, pages 2994–3002, 2015.
- [40] **Ting Zhang**, Guo-Jun Qi, Jinhui Tang, and Jingdong Wang. Sparse composite quantization. In *IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2015, Boston, MA, USA, June 7-12, 2015*, pages 4548–4556, 2015.
- [41] **Lingxi Xie**, Jingdong Wang, Weiyao Lin, Bo Zhang, and Qi Tian. RIDE: reversal invariant descriptor enhancement. In *2015 IEEE International Conference on Computer Vision, ICCV 2015, Santiago, Chile, December 7-13, 2015*, pages 100–108, 2015.
- [42] **Liang Zheng**, Liyue Shen, Lu Tian, Shengjin Wang, Jingdong Wang, and Qi Tian. Scalable person re-identification: A benchmark. In *2015 IEEE International Conference on Computer Vision, ICCV 2015, Santiago, Chile, December 7-13, 2015*, pages 1116–1124, 2015.

- [43] **Yang Shen**, Weiyao Lin, Junchi Yan, Mingliang Xu, Jianxin Wu, and Jingdong Wang. Person re-identification with correspondence structure learning. In *2015 IEEE International Conference on Computer Vision, ICCV 2015, Santiago, Chile, December 7-13, 2015*, pages 3200–3208, 2015.
- [44] **Botong Wu**, Qiang Yang, Wei-Shi Zheng, Yizhou Wang, and Jingdong Wang. Quantized correlation hashing for fast cross-modal search. In *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2015, Buenos Aires, Argentina, July 25-31, 2015*, pages 3946–3952, 2015.
- [45] **Xiangbo Shu**, Guo-Jun Qi, Jinhui Tang, and Jingdong Wang. Weakly-shared deep transfer networks for heterogeneous-domain knowledge propagation. In *Proceedings of the 23rd Annual ACM Conference on Multimedia Conference, MM '15, Brisbane, Australia, October 26 - 30, 2015*, pages 35–44, 2015.
- [46] **Lingxi Xie**, Jingdong Wang, Baining Guo, Bo Zhang, and Qi Tian. Orientational pyramid matching for recognizing indoor scenes. In *2014 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2014, Columbus, OH, USA, June 23-28, 2014*, pages 3734–3741, 2014.
- [47] **Weiye Wang**, Weiyao Lin, Yuanzhe Chen, Jianxin Wu, Jingdong Wang, and Bin Sheng. Finding coherent motions and semantic regions in crowd scenes: A diffusion and clustering approach. In *Computer Vision - ECCV 2014 - 13th European Conference, Zurich, Switzerland, September 6-12, 2014, Proceedings, Part I*, pages 756–771, 2014.
- [48] **Ting Zhang**, **Chao Du**, and Jingdong Wang. Composite quantization for approximate nearest neighbor search. In *Proceedings of the 31th International Conference on Machine Learning, ICML 2014, Beijing, China, 21-26 June 2014*, pages 838–846, 2014.
- [49] **Jianfeng Wang**, Heng Tao Shen, Shuicheng Yan, Nenghai Yu, Shipeng Li, and Jingdong Wang. Optimized distances for binary code ranking. In *Proceedings of the ACM International Conference on Multimedia, MM '14, Orlando, FL, USA, November 03 - 07, 2014*, pages 517–526, 2014.
- [50] **Huaizu Jiang**, Jingdong Wang, Zejian Yuan, Yang Wu, Nanning Zheng, and Shipeng Li. Salient object detection: A discriminative regional feature integration approach. In *2013 IEEE Conference on Computer Vision and Pattern Recognition, Portland, OR, USA, June 23-28, 2013*, pages 2083–2090, 2013.
- [51] **Peng Wang**, Jingdong Wang, Gang Zeng, Weiwei Xu, Hongbin Zha, and Shipeng Li. Supervised kernel descriptors for visual recognition. In *2013 IEEE Conference on Computer Vision and Pattern Recognition, Portland, OR, USA, June 23-28, 2013*, pages 2858–2865, 2013.
- [52] **Naiyan Wang**, Jingdong Wang, and Dit-Yan Yeung. Online robust non-negative dictionary learning for visual tracking. In *IEEE International Conference on Computer Vision, ICCV 2013, Sydney, Australia, December 1-8, 2013*, pages 657–664, 2013.
- [53] **Jing Wang**, Jingdong Wang, Gang Zeng, Rui Gan, Shipeng Li, and Baining Guo. Fast neighborhood graph search using cartesian concatenation. In *IEEE International Conference on Computer Vision, ICCV 2013, Sydney, Australia, December 1-8, 2013*, pages 2128–2135, 2013.
- [54] **Honghui Zhang**, Jingdong Wang, Ping Tan, Jinglu Wang, and Long Quan. Learning crfs for image parsing with adaptive subgradient descent. In *IEEE International Conference on Computer Vision, ICCV 2013, Sydney, Australia, December 1-8, 2013*, pages 3080–3087, 2013.
- [55] **Quannan Li**, Jingdong Wang, David P. Wipf, and Zhuowen Tu. Fixed-point model for structured labeling. In *Proceedings of the 30th International Conference on Machine Learning, ICML 2013, Atlanta, GA, USA, 16-21 June 2013*, pages 214–221, 2013.
- [56] **Jianfeng Wang**, Jingdong Wang, Nenghai Yu, and Shipeng Li. Order preserving hashing for approximate nearest neighbor search. In *ACM Multimedia Conference, MM '13, Barcelona, Spain, October 21-25, 2013*, pages 133–142, 2013.

- [57] Xian-Sheng Hua, Linjun Yang, Jingdong Wang, **Jing Wang**, Ming Ye, Kuansan Wang, Yong Rui, and Jin Li. Clickage: towards bridging semantic and intent gaps via mining click logs of search engines. In *ACM Multimedia Conference, MM '13, Barcelona, Spain, October 21-25, 2013*, pages 243–252, 2013.
- [58] **Jing Wang**, Jingdong Wang, Gang Zeng, Zhuowen Tu, Rui Gan, and Shipeng Li. Scalable k-nn graph construction for visual descriptors. In *2012 IEEE Conference on Computer Vision and Pattern Recognition, Providence, RI, USA, June 16-21, 2012*, pages 1106–1113, 2012.
- [59] **Junyang Lu, Jiazhen Zhou**, Jingdong Wang, Tao Mei, Xian-Sheng Hua, and Shipeng Li. Image search results refinement via outlier detection using deep contexts. In *2012 IEEE Conference on Computer Vision and Pattern Recognition, Providence, RI, USA, June 16-21, 2012*, pages 3029–3036, 2012.
- [60] **Jing Wang**, Jingdong Wang, Qifa Ke, Gang Zeng, and Shipeng Li. Fast approximate k-means via cluster closures. In *2012 IEEE Conference on Computer Vision and Pattern Recognition, Providence, RI, USA, June 16-21, 2012*, pages 3037–3044, 2012.
- [61] **Peng Wang**, Jingdong Wang, Gang Zeng, Jie Feng, Hongbin Zha, and Shipeng Li. Salient object detection for searched web images via global saliency. In *2012 IEEE Conference on Computer Vision and Pattern Recognition, Providence, RI, USA, June 16-21, 2012*, pages 3194–3201, 2012.
- [62] **Naiyan Wang, Tiansheng Yao**, Jingdong Wang, and Dit-Yan Yeung. A probabilistic approach to robust matrix factorization. In *Computer Vision - ECCV 2012 - 12th European Conference on Computer Vision, Florence, Italy, October 7-13, 2012, Proceedings, Part VII*, pages 126–139, 2012.
- [63] Jingdong Wang and Shipeng Li. Query-driven iterated neighborhood graph search for large scale indexing. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 179–188, 2012.
- [64] **Jianping Shi, Xiang Ren**, Guang Dai, Jingdong Wang, and Zhihua Zhang. A non-convex relaxation approach to sparse dictionary learning. In *The 24th IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2011, Colorado Springs, CO, USA, 20-25 June 2011*, pages 1809–1816, 2011.
- [65] Gang Zeng, **Peng Wang**, Jingdong Wang, Rui Gan, and Hongbin Zha. Structure-sensitive superpixels via geodesic distance. In *IEEE International Conference on Computer Vision, ICCV 2011, Barcelona, Spain, November 6-13, 2011*, pages 447–454, 2011.
- [66] **Hao Xu**, Jingdong Wang, Zhu Li, Gang Zeng, Shipeng Li, and Nenghai Yu. Complementary hashing for approximate nearest neighbor search. In *IEEE International Conference on Computer Vision, ICCV 2011, Barcelona, Spain, November 6-13, 2011*, pages 1631–1638, 2011.
- [67] Bin Cheng, Guangcan Liu, Jingdong Wang, ZhongYang Huang, and Shuicheng Yan. Multi-task low-rank affinity pursuit for image segmentation. In *IEEE International Conference on Computer Vision, ICCV 2011, Barcelona, Spain, November 6-13, 2011*, pages 2439–2446, 2011.
- [68] **Yang Wang**, Tao Mei, Jingdong Wang, Houqiang Li, and Shipeng Li. JIGSAW: interactive mobile visual search with multimodal queries. In *Proceedings of the 19th International Conference on Multimedia 2011, Scottsdale, AZ, USA, November 28 - December 1, 2011*, pages 73–82, 2011.
- [69] **Wenhao Lu**, Jingdong Wang, Xian-Sheng Hua, Shengjin Wang, and Shipeng Li. Contextual image search. In *Proceedings of the 19th International Conference on Multimedia 2011, Scottsdale, AZ, USA, November 28 - December 1, 2011*, pages 513–522, 2011.
- [70] **Nobuyuki Morioka** and Jingdong Wang. Robust visual reranking via sparsity and ranking constraints. In *Proceedings of the 19th International Conference on Multimedia 2011, Scottsdale, AZ, USA, November 28 - December 1, 2011*, pages 533–542, 2011.

- [71] **Dan Zhang**, Jingdong Wang, and Luo Si. Document clustering with universum. In *Proceeding of the 34th International ACM SIGIR Conference on Research and Development in Information Retrieval, SIGIR 2011, Beijing, China, July 25-29, 2011*, pages 873–882, 2011.
- [72] **You Jia**, Jingdong Wang, Gang Zeng, Hongbin Zha, and Xian-Sheng Hua. Optimizing kd-trees for scalable visual descriptor indexing. In *The Twenty-Third IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2010, San Francisco, CA, USA, 13-18 June 2010*, pages 3392–3399, 2010.
- [73] **Hao Xu**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Image search by concept map. In *Proceeding of the 33rd International ACM SIGIR Conference on Research and Development in Information Retrieval, SIGIR 2010, Geneva, Switzerland, July 19-23, 2010*, pages 275–282, 2010.
- [74] Jingdong Wang, **Yangqing Jia**, Xian-Sheng Hua, Changshui Zhang, and Long Quan. Normalized tree partitioning for image segmentation. In *2008 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2008), 24-26 June 2008, Anchorage, Alaska, USA, 2008*.
- [75] **Zheng-Jun Zha**, Xian-Sheng Hua, Tao Mei, Jingdong Wang, Guo-Jun Qi, and Zengfu Wang. Joint multi-label multi-instance learning for image classification. In *2008 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2008), 24-26 June 2008, Anchorage, Alaska, USA, 2008*.
- [76] **Xinmei Tian**, Linjun Yang, Jingdong Wang, Yichen Yang, Xiuqing Wu, and Xian-Sheng Hua. Bayesian video search reranking. In *Proceedings of the 16th International Conference on Multimedia 2008, Vancouver, British Columbia, Canada, October 26-31, 2008*, pages 131–140, 2008.
- [77] Jianxiong Xiao, Jingdong Wang, Ping Tan, and Long Quan. Joint affinity propagation for multiple view segmentation. In *IEEE 11th International Conference on Computer Vision, ICCV 2007, Rio de Janeiro, Brazil, October 14-20, 2007*, pages 1–7, 2007.
- [78] Fei Wang, Jingdong Wang, Helen C. Shen, and Changshui Zhang. Semi-supervised classification using linear neighborhood propagation. In *2006 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2006), 17-22 June 2006, New York, NY, USA, 2006*, pages 160–167, 2006.
- [79] Jingdong Wang, Long Quan, Jian Sun, Xiaoou Tang, and Heung-Yeung Shum. Picture collage. In *2006 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2006), 17-22 June 2006, New York, NY, USA, 2006*, pages 347–354, 2006.
- [80] Jianguo Lee, Jingdong Wang, Changshui Zhang, and Zhaoqi Bian. Probabilistic tangent subspace: a unified view. In *Machine Learning, Proceedings of the Twenty-first International Conference (ICML 2004), Banff, Alberta, Canada, July 4-8, 2004, 2004*.

Refereed conferences

- [1] **Ke Sun, Mingjie Li**, Dong Liu, and Jingdong Wang. IGCv3: Interleaved Low-Rank Group Convolutions for Efficient Deep Neural Network. In *British Machine Vision Conference, BMVC 2018, 2018*.
- [2] **Liang Zheng**, Yali Zhao, Shengjin Wang, Jingdong Wang, and Qi Tian. On the Large-Scale Transferability of the Convolutional Neural Network. In *Workshop on Big Data Analytics for Social Computing (BDASC18), Melbourne, Australia, June 3-6, 2018*.
- [3] Yuhui Yuan, Kuiyuan Yang, Jianyuan Guo, Chao Zhang, and Jingdong Wang. Feature Incay for Representation Regularization. In *ICLR, 2018*.
- [4] **Gangming Zhao**, Zhaoxiang Zhang, He Guan, Peng Tang, and Jingdong Wang. Rethinking ReLU to Train Better CNNs. In *ICPR, 2018*.

- [5] **Zhansheng Jiang, Lingxi Xie**, Xiaotie Deng, Weiwei Xu, and Jingdong Wang. Fast nearest neighbor search in the hamming space. In *MultiMedia Modeling - 22nd International Conference, MMM 2016, Miami, FL, USA, January 4-6, 2016, Proceedings, Part I*, pages 325–336, 2016.
- [6] Mengyin Wang, Zechao Li, Xiangbo Shu, Jingdong Wang, and Jinhui Tang. Deep kinship verification. In *17th IEEE International Workshop on Multimedia Signal Processing, MMSp 2015, Xiamen, China, October 19-21, 2015*, pages 1–6, 2015.
- [7] Shengnan Cai, Jingdong Wang, and Long Quan. How fashion talks: Clothing-region-based gender recognition. In *Progress in Pattern Recognition, Image Analysis, Computer Vision, and Applications - 19th Iberoamerican Congress, CIARP 2014, Puerto Vallarta, Mexico, November 2-5, 2014. Proceedings*, pages 515–523, 2014.
- [8] **Na Qi**, Yunhui Shi, Xiaoyan Sun, Jingdong Wang, and Wenpeng Ding. Two dimensional analysis sparse model. In *IEEE International Conference on Image Processing, ICIP 2013, Melbourne, Australia, September 15-18, 2013*, pages 310–314, 2013.
- [9] **Na Qi**, Yunhui Shi, Xiaoyan Sun, Jingdong Wang, and Baocai Yin. Two dimensional synthesis sparse model. In *Proceedings of the 2013 IEEE International Conference on Multimedia and Expo, ICME 2013, San Jose, CA, USA, July 15-19, 2013*, pages 1–6, 2013.
- [10] Yingwei Pan, Ting Yao, Kuiyuan Yang, Houqiang Li, Chong-Wah Ngo, Jingdong Wang, and Tao Mei. Image search by graph-based label propagation with image representation from DNN. In *ACM Multimedia Conference, MM '13, Barcelona, Spain, October 21-25, 2013*, pages 397–400, 2013.
- [11] **Peng Wang, Dongqing Zhang**, Gang Zeng, and Jingdong Wang. Contextual dominant color name extraction for web image search. In *2012 IEEE International Conference on Multimedia and Expo Workshops, Melbourne, Australia, July 9-13, 2012*, pages 319–324, 2012.
- [12] **Weiwen Tu**, Rong Pan, and Jingdong Wang. Similar image search with a tiny bag-of-delegates representation. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 885–888, 2012.
- [13] **Bisheng Chen**, Jingdong Wang, Qinghua Huang, and Tao Mei. Personalized video recommendation through tripartite graph propagation. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 1133–1136, 2012.
- [14] **Shiyang Lu**, Tao Mei, Jingdong Wang, Jian Zhang, Zhiyong Wang, David Dagan Feng, Jian-Tao Sun, and Shipeng Li. Browse-to-search. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 1323–1324, 2012.
- [15] **Jing Wang**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Scalable similar image search by joint indices. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 1325–1326, 2012.
- [16] **Peng Wang, Dongqing Zhang**, Jingdong Wang, Zhong Wu, Xian-Sheng Hua, and Shipeng Li. Color filter for image search. In *Proceedings of the 20th ACM Multimedia Conference, MM '12, Nara, Japan, October 29 - November 02, 2012*, pages 1327–1328, 2012.
- [17] **Huaizu Jiang**, Jingdong Wang, Zejian Yuan, Tie Liu, and Nanning Zheng. Automatic salient object segmentation based on context and shape prior. In *British Machine Vision Conference, BMVC 2011, Dundee, UK, August 29 - September 2, 2011. Proceedings*, pages 1–12, 2011.
- [18] Jingdong Wang and Xian-Sheng Hua. Web-scale image search by color sketch. In *Proceedings of the 19th International Conference on Multimedia 2011, Scottsdale, AZ, USA, November 28 - December 1, 2011*, pages 751–752, 2011.
- [19] **Hao Xu**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Hybrid image summarization. In *Proceedings of the 19th International Conference on Multimedia 2011, Scottsdale, AZ, USA, November 28 - December 1, 2011*, pages 1217–1220, 2011.

- [20] **Xiangang Cheng**, Jingdong Wang, Liang-Tien Chia, and Xian-Sheng Hua. Learning to combine multi-resolution spatially-weighted co-occurrence matrices for image representation. In *Proceedings of the 2010 IEEE International Conference on Multimedia and Expo, ICME 2010, 19-23 July 2010, Singapore*, pages 631–636, 2010.
- [21] Yan Wang, Tao Mei, Jingdong Wang, and Xian-Sheng Hua. Dynamic video collage. In *Advances in Multimedia Modeling, 16th International Multimedia Modeling Conference, MMM 2010, Chongqing, China, January 6-8, 2010. Proceedings*, pages 793–795, 2010.
- [22] **Hao Xu**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Interactive image search by 2d semantic map. In *Proceedings of the 19th International Conference on World Wide Web, WWW 2010, Raleigh, North Carolina, USA, April 26-30, 2010*, pages 1321–1324, 2010.
- [23] **Hao Xu**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Summarizing tagged image collections by cross-media representativeness voting. In *Proceedings of the 2009 IEEE International Conference on Multimedia and Expo, ICME 2009, June 28 - July 2, 2009, New York City, NY, USA*, pages 922–925, 2009.
- [24] **Hao Xu**, Jingdong Wang, Xian-Sheng Hua, and Shipeng Li. Tag refinement by regularized LDA. In *Proceedings of the 17th International Conference on Multimedia 2009, Vancouver, British Columbia, Canada, October 19-24, 2009*, pages 573–576, 2009.
- [25] **Yang Hu**, Jingdong Wang, Nenghai Yu, and Xian-Sheng Hua. Maximum margin clustering with pairwise constraints. In *Proceedings of the 8th IEEE International Conference on Data Mining (ICDM 2008), December 15-19, 2008, Pisa, Italy*, pages 253–262, 2008.
- [26] **Yangqing Jia**, Jingdong Wang, Changshui Zhang, and Xian-Sheng Hua. Augmented tree partitioning for interactive image segmentation. In *Proceedings of the International Conference on Image Processing, ICIP 2008, October 12-15, 2008, San Diego, California, USA*, pages 2292–2295, 2008.
- [27] Jingdong Wang, **Xinmei Tian**, Linjun Yang, Zheng-Jun Zha, and Xian-Sheng Hua. Optimized video scene segmentation. In *Proceedings of the 2008 IEEE International Conference on Multimedia and Expo, ICME 2008, June 23-26 2008, Hannover, Germany*, pages 301–304, 2008.
- [28] **Zheng-Jun Zha**, Tao Mei, Jingdong Wang, Zengfu Wang, and Xian-Sheng Hua. Graph-based semi-supervised learning with multi-label. In *Proceedings of the 2008 IEEE International Conference on Multimedia and Expo, ICME 2008, June 23-26 2008, Hannover, Germany*, pages 1321–1324, 2008.
- [29] **Xinmei Tian**, Linjun Yang, Jingdong Wang, Xiuqing Wu, and Xian-Sheng Hua. Transductive video annotation via local learnable kernel classifier. In *Proceedings of the 2008 IEEE International Conference on Multimedia and Expo, ICME 2008, June 23-26 2008, Hannover, Germany*, pages 1509–1512, 2008.
- [30] Jingdong Wang, **Yinghai Zhao**, Xiuqing Wu, and Xian-Sheng Hua. Transductive multi-label learning for video concept detection. In *Proceedings of the 1st ACM SIGMM International Conference on Multimedia Information Retrieval, MIR 2008, Vancouver, British Columbia, Canada, October 30-31, 2008*, pages 298–304, 2008.
- [31] **Yangqing Jia**, Jingdong Wang, Changshui Zhang, and Xian-Sheng Hua. Finding image exemplars using fast sparse affinity propagation. In *Proceedings of the 16th International Conference on Multimedia 2008, Vancouver, British Columbia, Canada, October 26-31, 2008*, pages 639–642, 2008.
- [32] **Dan Zhang**, Jingdong Wang, Fei Wang, and Changshui Zhang. Semi-supervised classification with universum. In *Proceedings of the SIAM International Conference on Data Mining, SDM 2008, April 24-26, 2008, Atlanta, Georgia, USA*, pages 323–333, 2008.
- [33] Tao Mei, Zheng-Jun Zha, Yuan Liu, Meng Wang, Guo-Jun Qi, Xinmei Tian, Jingdong Wang, Linjun Yang, and Xian-Sheng Hua. MSRA att TRECVID 2008: High-level feature extraction

and automatic search. In *TRECVID 2008 workshop participants notebook papers*, Gaithersburg, MD, USA, November 2008, 2008.

- [34] Xing Yi, Changshui Zhang, and Jingdong Wang. Multi-view EM algorithm and its application to color image segmentation. In *Proceedings of the 2004 IEEE International Conference on Multimedia and Expo, ICME 2004, 27-30 June 2004, Taipei, Taiwan*, pages 351–354, 2004.
- [35] Jingdong Wang, Jianguo Lee, and Changshui Zhang. Kernel trick embedded gaussian mixture model. In *Algorithmic Learning Theory, 14th International Conference, ALT 2003, Sapporo, Japan, October 17-19, 2003, Proceedings*, pages 159–174, 2003.
- [36] Jianguo Lee, Jingdong Wang, and Changshui Zhang. Color image segmentation: Kernel do the feature space. In *Machine Learning: ECML 2003, 14th European Conference on Machine Learning, Cavtat-Dubrovnik, Croatia, September 22-26, 2003, Proceedings*, pages 253–264, 2003.
- [37] Jingdong Wang, Jianguo Lee, and Changshui Zhang. Kernel GMM and its application to image binarization. In *Proceedings of the 2003 IEEE International Conference on Multimedia and Expo, ICME 2003, 6-9 July 2003, Baltimore, MD, USA*, pages 533–536, 2003.

Tutorial and Seminars

High-resolution networks	Keynote	CVWC at ICCV 2019
Neural architecture construction and search	tutorial	ICME 2019
High-resolution networks	Keynote	CEFRL at CVPR 2019
Interleaved group convolutions for efficient deep neural networks	Keynote	ACM ICIMCS 2018
Person re-identification: datasets and representations	Keynote	PCM 2018
Person re-identification: recent advances and challenges	Tutorial	FG 2018
CNN architecture design: from deeper to wider	Keynote	ACM ICIMCS 2017

Patents

1. Computing visual and textual summaries for tagged image collections	US patent	9092673	1	2015/7/28
2. Intelligent image search results summarization and browsing	US patent	8774526	1	2014/7/8
3. Bayesian video search reranking	US patent	8180766	2	2012/5/15
4. Approximate K-means via cluster closures	US patent	9710493	1	2017/7/18
5. Transductive multi-label learning for video concept detection	US patent	8218859	1	2012/7/10
6. Contextual dominant color name extraction	US patent	8873845	1	2014/10/24
7. Interactive multi-modal image search	US patent	9411830	2	2016/8/9
8. Optimized KD-tree for scalable search	US patent	8645380	1	2014/2/4
9. Hybrid neighborhood graph search for scalable visual indexing	US patent	8370363	1	2013/2/5
10. Reranking using confident image samples	US patent	9384241	1	2016/7/5
11. Salient object segmentation	US patent	9042648	1	2015/5/26
12. Document-related representative information	US patent	8712991	1	2014/4/29
13. Interactively ranking image search results using color layout relevance	US patent	8369656	1	2013/2/5
14. Concept-structured image search	US patent	8706740	2	2013/3/5
15. Image searching by approximate K-NN graph	US patent	8705870	1	2014/4/22

Product Transfer

- | | |
|---|---|
| 1. SPTAG (spatial partition tree and graph, improved NGS) | Shipped to Bing platform, 2018 |
| 2. Fast human detection | Shipped to XiaoIce, 2017 |
| 3. How-Old Fashion | Shipped to XiaoIce, 2016 |
| 4. How-Old 2.0 | Shipped to XiaoIce, 2015 |
| 5. Celebrity for chat | Shipped to XiaoIce, 2015, 2017 |
| 6. Similar image search for image chat | Shipped to XiaoIce, 2015 |
| 7. Similar video search for video chat | Shipped to XiaoIce, 2015 |
| 8. Similarity search | Shipped to Ads Selection, 2015 |
| 9. XiaoIce book recognition | Shipped to Weibo in XiaoIce, 2014 |
| 10. Nearest neighbor search | Shipped to Microsoft Bing image search in 2014. |
| 11. Image match | Shipped to Microsoft Bing image search in 2014. |
| 12. Visual attribute enhanced image relevance ranker | Shipped to Microsoft Bing image search in 2012. |
| 13. | Cognitive service. 2015 |
| 14. Dominant color filter | Shipped to Microsoft Bing image search, 2012 |
| 15. Image search by color map | Shipped to Microsoft Bing image search, 2010 |

Interns and students ever working with me

- | | |
|--------------------|--|
| 1. Xiaokang Chen | Peking University (20) |
| 2. Changqian Yu | HUST (20) |
| 3. Shaobo Min | USTC (20) |
| 4. Baifeng Shi | Peking University |
| 5. Chaoqun Wang | USTC (19) |
| 6. Hung-Jen Chen | National Chiao Tung University (19) |
| 7. Jingyi Xie | USTC (19) |
| 8. Zigang Geng | USTC (19) |
| 9. Boqi Chen | Boston University (19) |
| 10. Tianheng Cheng | Huazhong University of Science & Technology (18) |
| 11. Chaorui Deng | South China University of Technology |
| 12. Manli Shu | USTC (18) |
| 13. Borui Jiang | Peking University (18) |
| 14. Jingchun Cheng | Tsinghua University (18) |
| 15. Weijian Xu | UCSD (18) |
| 16. Yifan Liu | Beihang University (18) |
| 17. Yao Qin | UCSD (18) |
| 18. Ke Sun | USTC (17 - 18) |
| 19. Shichen Liu | Tsinghua University (17 - 18) |
| 20. Depu Meng | USTC (17 - 18) |
| 21. Mingji Li | USTC (17 - 18) |
| 22. Junran Peng | IA, CAS (17) |

1. Chong Shang Tsinghua University (17)
2. Guotian Xie Sun Yat-Sen University (17)
3. Peng Tang Huazhong University of Science & Technology (16 - 17)
4. Song Bai Huazhong University of Science & Technology (16 - 17)
5. Gangming Zhao IA, CAS (17)
6. Kexin Zhang Peking University (17)
7. Yumin Suh Seoul National University, Korea (16 - 17)
8. Yajie Xing Peking University (16 - 17)
9. Shuang Li Tsinghua University (16)
10. Ryosuke Furuta The University of Tokyo, Japan (16)
11. Yanzhao Wu USTC (16)
12. Jun He HeFei University of Technology (16)
13. Liheng Zhang University of Central Florida (16)
14. Liming Zhao Zhejiang University (16)
15. Zilong Huang Huazhong University of Science & Technology (16)
16. Xun Huang Beihang University (16)
17. Xiaojuan Wang Sun Yat-Sen University (15)
18. Zhen Wei Shanghai Jiao Tong University (15)
19. Wei Tang IA, CAS (15)
20. Qiqi hou Xi'an Jiaotong University (15)
21. Ning Xu UIUC (15)
22. Liang Zheng Tsinghua University (14 - 15)
23. Jiaming Song Tsinghua University (14)
24. Tianxiao Shen Tsinghua University (14)
25. Jianqiu Ji Tsinghua University (14)
26. Fan Liu Nanjing University of Science & Technology (14)
27. Baoguang Shi Huazhong University of Science & Technology (14)
28. Dapeng Chen Xi'an Jiaotong University (14)
29. Falong Shen Peking University (13 - 14)
30. Lingxi Xie Tsinghua University (13)
31. Ting Zhang USTC (13)
32. Xianjie Chen University of California, Los Angeles (13)
33. Chongxuan Li Tsinghua University (13)
34. Chao Du Tsinghua University (13 - 14)
35. Jingkuan Song The University of Queensland, Australia (12 - 13)
36. Chuang Gan Beihang University (12 - 13)
37. Zhansheng Jiang Shanghai Jiao Tong University (12 - 13)
38. Yupeng Gu USTC (12 - 13)
39. Shiyu Chang UIUC (12)
40. Jianfeng Wang USTC (12 - 13)
41. Weiwen Tu Sun Yat-Sen University (11)
42. Tiansheng Yao Zhejiang University (11)
43. Dongqing Zhang Shanghai Jiao Tong University (11)
44. Peng Wang Peking University (11 - 13)

1.	Xianghang Liu	University of New South Wales, Australia (11)	
2.	Jiazhen Zhou	Peking University (11)	Columbia University
3.	Junyang Lu	Peking University (11)	Columbia University
4.	Xiang Ren	Zhejiang University (11)	UIUC
5.	Nobuyuki Morioka	University of New South Wales, Australia (11)	Google
6.	Naiyan Wang	Zhejiang University (10 - 11)	HKUST
7.	Huaizu Jiang	Xi'an Jiaotong University (10 - 11)	
8.	Shijie Xu	Beihang University (10)	
9.	Jing Wang	Peking University (10 - 13)	
10.	Bin Cheng	National University of Singapore (10)	
11.	Biao Wang	Tsinghua University (10)	
12.	Wenhao Lu	Tsinghua University (10)	
13.	Zhe Zhao	Peking University (09 - 10)	University of Michigan
14.	Xiangang Chen	Nanyang Technological University (09)	
15.	Jue Xie	Monash University, Melbourne, Australia (09)	
16.	Hao Xu	USTC (08 - 09)	
17.	You Jia	Peking University (09)	CMU, Facebook
18.	Liyan Jia	Tsinghua University (09)	Cornell University
19.	Heng Zhang	Peking University (08 - 09)	
20.	Yang Hu	USTC (08)	
21.	Darui Li	USTC (08)	
22.	Yinghai Zhao	USTC (08)	
23.	Xuan Huang	USTC (07 - 08)	
24.	Jianxiong Xiao	HKUST	
25.	Fei Wang	Tsinghua University (05 - 06)	IBM T. J. Watson Research Lab
26.	Yangqing Jia	Tsinghua University (07)	University of California, Berkeley
27.	Dan Zhang	Tsinghua University (07, 10)	Purdue University
28.	Mingjie Qian	Tsinghua University (09)	UIUC

Beijing, July 15, 2020