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RESEARCH INTERESTS	pattern recognition, computer vision, multimedia video analysis and retrieval, human computer interaction	
WORK EXPERIENCE	Dec. 2015 – Now      Computer School, Wuhan University Jan. 2015 – Dec. 2015      973 Office, Ministry of Sci. & Tech. of P.R. China Aug. 2014 – Nov. 2014      Computer School, Wuhan University Aug. 2012 – Jul. 2014      Computer School, Wuhan University	Associate Professor Project Officer Assistant Professor Postdoc
EDUCATION BACKGROUND	Sep. 2006 – Jul. 2012 <i>Ph.D. in Computer Science</i> Institute of Automation, Chinese Academy of Sciences (CASIA), Beijing, China  Sep. 2009 – Sep. 2010 <i>Visiting Student</i> China-Singapore Institute of Digital Media (CSIDM), Singapore, Singapore  Sep. 2002 – Jun. 2006 <i>B.E. (Hons) in Automation</i> Huazhong University of Science & Technology (HUST), Wuhan, Hubei Province, China	
HONOURS AND AWARDS	Best Instructor Award, <i>Computer School, Wuhan University</i> , Wuhan, China, 2015 Best Paper Award, <i>The 15<sup>th</sup> Pacific-Rim Conference on Multimedia</i> , Kuching, Malaysia, 2014 Pandeng Scholarship, <i>Institute of Automation, Chinese Academy of Sciences</i> , Beijing, China, 2011 Merit Student, <i>Graduate University of Chinese Academy of Sciences</i> , Beijing, China, 2010 Winner Prize of Nokia Innovation Contest, <i>Nokia Research Center</i> , Beijing, China, 2008, 2009 Top Scholarship, <i>Huazhong University of Science &amp; Technology</i> , Wuhan, China, 2003-2006 Merit Student, <i>Huazhong University of Science &amp; Technology</i> , Wuhan, China, 2005	
PROJECTS AND FUNDINGS	F1. <b>Co-PI</b> : “Video Big Data: Efficient Representation, Deep Analysis and Integrated Utilization”, <i>Natural Science Foundation of China (NSFC)</i> , No. U1611461, 01/2017–12/2020, ¥ 798,000 CNY (tot. ¥ 5,320,000 CNY). F2. <b>PI</b> : “Computer Facilitated Video Investigation Technology”, <i>Natural Science Foundation of Jiangsu Province (NSFoJS)</i> , No. BK20160386, 06/2016–06/2019, ¥ 200,000 CNY. F3. <b>PI</b> : “Person Re-identification for Video Investigation”, <i>National Natural Science Foundation of China (NSFC)</i> , No. 61303114, 01/2014–12/2016, ¥ 260,000 CNY. F4. <b>PI</b> : “Person Re-identification Using Bag of Models”, <i>Specialized Research Fund for Doctoral Program of Higher Education</i> , No.20130141120024, 01/2014–12/2015, ¥ 40,000 CNY. F5. <b>PI</b> : “Suspect Object Tracking for Large Scope of Dynamic Scenes”, <i>Natural Science Foundation of Hubei Province (NSFoHB)</i> , No.2014CFB712, 01/2014–12/2015, ¥ 60,000 CNY. F6. <b>PI</b> : “Person Re-identification Using Representation Model for Sequential Objects”, <i>China Post-doc Foundation (CPF)</i> , No.2013M530350, 03/2013–07/2014, ¥ 80,000 CNY.	
PAPERS AND REPORTS	[ <b>Journal Papers</b> ] J1. Liang Chen, Ruimin Hu, <b>Chao Liang</b> , Qing Li, Zhen Han, “A novel face super resolution approach for noisy images using contour feature and standard deviation prior”, <i>Multimedia Tools Appl</i> (MTA), vol.76, no.2, pp.2467-2493, 2017. J2. Qingan Yan, Long Yang, <b>Chao Liang</b> , Huajun Liu, Ruimin Hu, Chunxia Xiao, “Geometrically Based Linear Iterative Clustering for Quantitative Feature Correspondence”, <i>Comput. Graph. Forum</i> (CGF), vol.35, no.7, pp.1-10, 2016. J3. Mang Ye, <b>Chao Liang</b> *, Yi Yu, Zheng Wang, Qingming Leng, Chunxia Xiao, Jun Chen, Ruimin Hu, “Person Re-identification via Ranking Aggregation of Similarity Pulling and Dissimilarity Pushing”, <i>IEEE Transactions on Multimedia</i> (TMM), vol.18, no.12, pp. 1-14, 2016. (* indicates corresponding author ) J4. Bo Luo, <b>Chao Liang</b> *, Weijian Ruan, Ruimin Hu, “Stable and salient patch-based appearance model for robust object tracking”, <i>Electronics Letters</i> (EL), vol. 52, no. 18, pp. 1522-1524, 2016. (* indicates corresponding author )	

- J5. Zheng Wang, Ruimin Hu, **Chao Liang**, Yu Yi, Junjun Jiang, Mang Ye, Jun Chen, Qingming Leng, “Zero-shot Person Re-identification via Cross-view Consistency”, *IEEE Transactions on Multimedia* (TMM), vol. 18, no.2, pp. 260-272, 2016.
- J6. Chunjie Zhang, Jian Cheng, Yifan Zhang, Jing Liu, **Chao Liang**, Junbiao Pang, Qingming Huang, Qi Tian, “Image classification using boosted local features with random orientation and location selection”, *Inf. Sci.*, vol.310, pp. 118-129 (2015).
- J7. Chunjie Zhang, **Chao Liang\***, Junbiao Pang, Yifan Zhang, Jing Liu, Lei Qin, Qingming Huang, “Undoing the codebook bias by linear transformation with sparsity and F-norm constraints for image classification”, *Pattern Recognition Letters* (PRL), vol.45, pp.197-204, 2014. (\* indicates corresponding author )
- J8. Junjun Jiang, Ruimin Hu, **Chao liang\***, Zhen Han, Chunjie Zhang, “Face Image Super-Resolution through Locality-induced Support Regression”, *Signal Processing* (SP), vol.103, pp.168-183, 2014. (\* indicates corresponding author )
- J9. Chunjie Zhang, Jing Liu, **Chao Liang\***, Zhe Xue, Junbiao Pang, Qingming Huang, “Image classification by non-negative sparse coding, correlation constrained low-rank and sparse decomposition”, *Computer Vision and Image Understanding* (CVIU), vol.123, pp.14-22, 2014. (\* indicates corresponding author )
- J10. Yimin Wang, Ruimin Hu, **Chao Liang**, Chunjie Zhang, Qingming Leng, “Camera compensation using feature projection matrix for person re-identification”, *IEEE Transactions on Circuit System and Video Technology* (TCSVT), vol.24, no.8, pp.1350-1361, 2014.
- J11. Qingming Leng, Ruimin Hu, **Chao Liang**, Yimin Wang, “Person re-identification with content and context re-ranking”, *Multimedia Tools and Applications* (MTA), vol. 74, no.17, pp.6989-7014, 2015.
- J12. Chunjie Zhang, Xian Xiao, Junbiao Pang, **Chao Liang**, Yifan Zhang, Qingming Huang, “Beyond visual word ambiguity: Weighted local feature encoding with governing region”, *J. Visual Communication and Image Representation* (JVCIR), vol.25, no.6, pp.1387-1398, 2014.
- J13. Chunjie Zhang, Jian Cheng, Jing Liu, Junbiao Pang, **Chao Liang**, Qingming Huang, Qi Tian, “Object categorization in sub-semantic space”, *Neurocomputing*, vol.142, pp.248-255, 2014.
- J14. **Chao Liang**, Changsheng Xu, Jian Cheng, Weiqing Min, Hanqing Lu, “Script-to-Movie: A Computational Framework for Story Movie Composition”, *IEEE Transactions on Multimedia* (TMM), vol.15, no.2, pp.401-414, 2013.
- J15. Qingming Leng, Ruimin Hu, **Chao Liang**, Yimin Wang, Jun Chen, “Person re-identification based on contextual characteristic”, *Electronics Letters* (EL), vol.49, issue.172013.
- J16. Chunjie Zhang, Jing Liu, **Chao Liang**, Qingming Huang, Qi Tian, “Image classification using Harr-like transformation of local features with coding residuals”, *Signal Processing* (SP) vol.93, no.8, pp.2111-2118, 2013.
- J17. Chunjie Zhang, Jing Liu, Qi Tian, **Chao Liang**, Qingming Huang, “Beyond visual features: A weak semantic image representation using exemplar classifiers for classification”, *Neurocomputing*, vol.120, pp.318-324, 2013.
- J18. Chunjie Zhang, Shuhui Wang, Qingming Huang, Jing Liu, **Chao liang\***, Qi Tian, “Image classification using spatial pyramid robust sparse coding”, *Pattern Recognition Letters* (PRL), vol.34, no.9, pp.1046-1052, 2013. (\* indicates corresponding author)
- J19. **Chao Liang**, Changsheng Xu, Hanqing Lu, “Personalized Sports Video Customization Using Content and Context Analysis”, *International Journal of Digital Multimedia Broadcasting* (IJDMB), vol. 2010, 2010.

#### [Conference Papers]

- C1. Qi Zheng, Jun Chen, **Chao Liang**, Wenhua Fang, Xiaoyuan Jing, Ruimin Hu, “Transferring Clothing Parsing from Fashion Dataset to Surveillance”, *In Proc. of International Conf. on Acoustics, Speech and Signal Processing* (ICASSP), pp.1667-1671, 2017.
- C2. Zheng Wang, Ruimin Hu, Yi Yu, **Chao Liang**, Chen Chen, “Taichi Distance for Person Re-Identification”, *In Proc. of International Conf. on Acoustics, Speech and Signal Processing* (ICASSP), pp.2052-2056, 2017. (Oral)
- C3. Mingfu Xiong, Jun Chen, Zheng Wang, Zhongyuan Wang, Ruimin Hu, **Chao Liang**, Daming Shi, “Person Re-Identification via Multiple Coarse-to-Fine Deep Metrics”, *European Conference on Artificial Intelligence* (ECAI), pp.355-362, 2016. (Oral)
- C4. Xiao Wang, **Chao Liang\***, Jun Chen, “Multi-Pedestrian Detection from Effective Proposal in Crowd Scene”, *In Proc. of International Conference on Internet Multimedia Computing and Service* (ICIMCS), pp.156-159, 2016. (\* indicates corresponding author)

- C5. Xiaoke Zhu, Xiao-Yuan Jing, Fei Wu, Weishi Zheng, Ruimin Hu, Chunxia Xiao, **Chao Liang**, “Distance learning by treating negative samples differently and exploiting impostors with symmetric triplet constraint for person re-identification”, *In Proc. of IEEE Computer Society Conf. on Multimedia & Expo. (ICME)*, pp.1-6, 2016. (Oral)
- C6. Zheng Wang, Ruimin Hu, Yi Yu, Junjun Jiang, **Chao Liang**, Jinqiao Wang, “Scale-Adaptive Low-Resolution Person Re-Identification via Learning a Discriminating Surface”, *International Joint Conference on Artificial Intelligence (IJCAI)*, pp. 2669-2675, 2016. (Oral)
- C7. Yang Yang, Yuhong Yang, Mang Ye, Wenxin Huang, Zheng Wang, **Chao Liang**, Lei Yao, Chunjie Zhang, “Spatial Constrained Fine-Grained Color Name for Person Re-identification”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp. 886-897, 2016.
- C8. Wenxin Huang, Ruimin Hu, **Chao Liang**, Yi Yu, Zheng Wang, Xian Zhong, Chunjie Zhang, “Camera Network Based Person Re-identification by Leveraging Spatial-Temporal Constraint and Multiple Cameras Relations”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp. 174-186, 2016. (Oral)
- C9. **Chao Liang**, Bingyue Huang, Ruimin Hu, Chunjie Zhang, Xiao-Yuan Jing, Jing Xiao, “A Un-supervised Person Re-identification Method Using Model Based Representation and Ranking”, *ACM Multimedia (MM)*, pp. 771-774, 2015.
- C10. Mang Ye, **Chao Liang\***, Zheng Wang, Qingming Leng, Jun Chen, “Ranking Optimization for Person Re-identification via Similarity and Dissimilarity”, *ACM Multimedia (MM)*, pp.1239-1242, 2015. (\* indicates corresponding author)
- C11. Zheng Wang, Ruimin Hu, Yi Yu, **Chao Liang**, Wenxin Huang, “Multi-Level Fusion for Person Re-identification with Incomplete Marks”, *ACM Multimedia (MM)*, pp.1267-1270, 2015.
- C12. Mang Ye, **Chao Liang\***, Zheng Wang, Qingming Leng, Jun Chen, Jun Liu, “Specific Person Retrieval via Incomplete Text Description”, *In Proc. of International Conf. on Multimedia Retrieval (ICMR)*, pp.547-550, 2015. (\* indicates corresponding author)
- C13. Bingyue Huang, Jun Chen, Yimin Wang, **Chao Liang**, Zheng Wang, Kaimin Sun, “Sparsity-Based Occlusion Handling Method for Person Re-identification”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.61-73, 2015. (Oral)
- C14. Mang Ye, Jun Chen, Qingming Leng, **Chao Liang**, Zheng Wang, Kaimin Sun, “Coupled-View Based Ranking Optimization for Person Re-identification”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.105-117, 2015. (Oral)
- C15. Jin Wang, **Chao Liang\***, Xiaochen Wang, Zhongyuan Wang, “Real-Life Voice Activity Detection Based on Audio-Visual Alignment”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.109-117, 2015. (Oral, \* indicates corresponding author)
- C16. Mingfu Xiong, Jun Chen, Zheng Wang, **Chao Liang**, Qi Zheng, Zhen Han, Kaimin Sun, “Deep Feature Representation via Multiple Stack Auto-Encoders”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.275-284, 2015. (Oral)
- C17. Jun Liu, **Chao Liang\***, Mang Ye, Zheng Wang, Yang Yang, Zhen Han, Kaimin Sun, “Person Re-identification via Attribute Confidence and Saliency”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp. 591-600, 2015. (\* indicates corresponding author)
- C18. Zheng Wang, Ruimin Hu, **Chao Liang**, Junjun Jiang, Kaimin Sun, Qingming Leng, Bingyue Huang, “Person Re-identification Using Data-Driven Metric Adaptation”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.195-207, 2015. (Oral)
- C19. Qi Zheng, **Chao Liang**, Wenhua Fang, Da Xiang, Xin Zhao, Chengping Ren, Jun Chen, “Car re-identification from large scale images using semantic attributes”, *17th IEEE International Workshop on Multimedia Signal Processing (MMSp)*, pp. 1-5, 2015 (Oral)
- C20. Wenhua Fang, Jun Chen, **Chao Liang**, Xiao Wang, Yuanyuan Nan, Ruimin Hu, “Object Detection in Low-Resolution Image via Sparse Representation”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.234-245, 2015.
- C21. Zheng Wang, Ruimin Hu, **Chao Liang**, Qingming Leng, Kaimin Sun, “Region-Based Interactive Ranking Optimization for Person Re-identification”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.1-10, 2014. (**Best Paper Award**)
- C22. Xiao Wang, Jun Chen, Wenhua Fang, **Chao Liang\***, Chunjie Zhang, Kaimin Sun, Ruimin Hu, “Saliency-Based Deformable Model for Pedestrian Detection”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp. 203-210, 2014. (Oral, \* indicates corresponding author)
- C23. Yuanyuan Nan, **Chao Liang\***, Wenhua Fang, Xiao Wang, Yuhong Yang, Jun Chen, “Histograms of Saliency for Pedestrian Detection”, *In Proc. of International Conference on Internet Multimedia Computing and Service (ICIMCS)*, pp.275-280, 2014. (Oral, \* indicates corresponding author)

- C24. Xiao-Yuan Jing, Rui-Min Hu, Yang-Ping Zhu, Jian Yang, Shan-Shan Wu, **Chao Liang**, Qian Liu, “Intra-view and Inter-view Supervised Correlation Analysis for Multi-view Feature Learning”, *In Proc. of Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI)*, pp.1882-1889, 2014.
- C25. Xiao Wang, Jun Chen, Wenhua Fang, **Chao Liang**, Chunjie Zhang, Ruimin Hu, “Pedestrian Detection from Salient Regions”, *In Proc. of International Conf. on Image Processing (ICIP)*, pp. 2423-2426, 2014.
- C26. Bo Luo, Ruimin Hu, Yimin Wang, **Chao Liang**, Chunjie Zhang, Ge Gao, “Robust Tracking via Saliency-based Appearance Model”, *In Proc. of International Conf. on Image Processing (ICIP)*, pp. 417-420, 2014.
- C27. Yimin Wang, Ruimin Hu, **Chao Liang**, Chunjie Zhang, Qingming Leng, “Person Re-identification by Smooth Metric Learning”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.561-573, 2013. (Oral)
- C28. Chunjie Zhang, Shuhui Wang, **Chao Liang**, Jing Liu, Qingming Huang, Haojie Li, Qi Tian, “Beyond bag of words: image representation in sub-semantic space”, *ACM Multimedia (MM)*, pp.497-500, 2013.
- C29. Chunjie Zhang, Yifan Zhang, Shuhui Wang, Junbiao Pang, **Chao Liang**, Qingming Huang, Qi Tian, “Undo the codebook bias by linear transformation for visual applications”, *ACM Multimedia (MM)* pp.533-536, 2013.
- C30. Yimin Wang, Ruimin Hu, **Chao Liang**, Chunjie Zhang, Qingming Leng, “Camera compensation using feature projection matrix for person re-identification”, *In Proc. of IEEE Computer Society Conf. on Multimedia & Expo. (ICME)*, pp.1-6, 2013. (Oral)
- C31. Qingming Leng, Ruimin Hu, **Chao Liang**, Yimin Wang, Jun Chen, “Bi-directional ranking for person re-identification”, *In Proc. of IEEE Computer Society Conf. on Multimedia & Expo. (ICME)*, pp.10-16, 2013. (Oral)
- C32. Wenhua Fang, Jun Chen, **Chao Liang**, Yimin Wang, Ruimin Hu, “Vehicle re-identification collaborating visual and temporal-spatial network”, *In Proc. of International Conference on Internet Multimedia Computing and Service (ICIMCS)*, pp.121-125, 2013. (Oral)
- C33. Chunjie Zhang, Wei Xiong, Jing Liu, Yifan Zhang, **Chao Liang**, Qingming Huang, “Fine-Grained Image Classification Using Color Exemplar Classifiers”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.327-336, 2013. (**Best Paper Runner-up**)
- C34. Chunjie Zhang, Jing Liu, **Chao Liang**, Jinhui Tang, Hanqing Lu, “Beyond Local Image Features: Scene Classification Using Supervised Semantic Representation”, *In Proc. of International Conf. on Image Processing (ICIP)*, pp.3133-3136, 2012.
- C35. **Chao Liang**, Changsheng Xu, Jian Cheng, Hanqing Lu, “TVParser: An automatic TV video parsing method”, *In Proc. of IEEE Computer Society Conf. on Computer Vision and Pattern Recognition (CVPR)*, pp.3377-3384, 2011.
- C36. Jitao Sang, **Chao Liang**, Changsheng Xu, Jian Cheng, “Robust Movie Character Identification and Its Sensitivity Analysis”, *In Proc. of IEEE Computer Society Conf. on Multimedia & Expo. (ICME)*, pp.1-6, 2011. (Oral)
- C37. Xinming Zhang, Yang Liu, **Chao Liang**, Changsheng Xu, “A Visualized Communication System Using Cross-Media Semantic Association”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.88-98, 2011. (Oral)
- C38. **Chao Liang**, Yu Jiang, Jian Cheng, Changsheng Xu, Xiaowei Luo, Jinqiao Wang, Yu Fu, Hanqing Lu, Jian Ma, “Personalized Sports Video Customization for Mobile Devices”, *In Proc. of International Conf. on Multimedia Modeling (MMM)*, pp.614-625, 2010. (Oral)
- C39. Huazhong Xu, Xiaowei Luo, **Chao Liang**, “Personalized Sports Video Customization Based on Multi-modal Analysis for Mobile Devices”, *In Proc. of IEEE Computer Society Conf. on Electrical and Control Engineering (ICECE)*, pp.4725-4730, 2010.
- C40. **Chao Liang**, Yi Zhang, Changsheng Xu, Jinqiao Wang, Hanqing Lu, “A Hierarchical Semantics-matching Approach for Sports Video Annotation”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.684-696, 2009. (Oral)
- C41. **Chao Liang**, Yifan Zhang, Jian Cheng, Hanqing Lu, “A Novel Role-based Movie Scene Segmentation Method”, *In Proc. of Pacific-Rim Conf. on Multimedia (PCM)*, pp.917-922, 2009.

#### [Technical Reports]

- TR1. Zheng Wang, Yang Yang, Shuosun Guan, Chenxia Han, Jiamei Lan, Rui Shao, Jinqiao Wang, **Chao liang\***, “WHU-NERCMS at TRECVID 2016: Instance Search Task”, *Participant Notebook Paper*, NIST TRECVID, 2016. (\* indicates correspondence author)

- TR2. Lei Yao, Mang Ye, Dongjing Liu, Rui Shao, Tao Liu, Jun Liu, Zheng Wang, **Chao liang\***, “WHU-NERCMS at TRECVID 2015: Instance Search Task”, *Participant Notebook Paper*, NIST TRECVID, 2015. (\* indicates corresponding author)
- TR3. Mang Ye, Bingyue Huang, Lei Yao, Jian Qin, Jian Guan, Xiao Wang, Bo Luo, Zheng Wang, Dongjing Liu, Zhuosheng Zhang, Su Mao, **Chao liang\***, “WHU-NERCMS at TRECVID 2014: Instance Search Task”, *Participant Notebook Paper*, NIST TRECVID, 2014. (\* indicates corresponding author )
- TR4. Jinqiao Wang, Si Liu, **Chao Liang**, Hanqing Lu, “IVA-NLPR-IA-CAS TRECVID 2009: High Level Features Extraction”, *Participant Notebook Paper*, NIST TRECVID, 2009.

#### [Patents]

- P1. Ruimin Hu, Zheng Wang, **Chao liang**, Wenxin Huang, Yang Yang, Jun Chen, Mang Ye, “Tachi: A Relative Distance-based Metric Learning Algorithm”, No.201510486310.3, 2015. (*In Chinese*)
- P2. Ruimin Hu, Mang Ye, **Chao liang**, Dongjing Liu, Zheng Wang, Jun Chen, Jun Liu, “A Person Retrieval Method Using Incomplete Textual Description”, No.201510153983.7, 2015. (*In Chinese*)
- P3. Ruimin Hu, Mingfu Xiong, Wenhua Fang, **Chao liang**, Xiao Wang, Qi Zheng, Jun Chen, “A Car Retrieval Method Using Multi-view Modeling”, No.201510081237.1, 2015. (*In Chinese*)
- P4. Ruimin Hu, Mang Ye, **Chao liang**, Jun Liu, Zheng Wang, Jun Chen, Weijian Ruan, “A Person Re-identification Method Using Aggregated Similarity and Dis-similarity Rankings”, No.201410827080.8, 2014. (*In Chinese*)
- P5. Ruimin Hu, Wenhua Fang, **Chao liang**, Xiao Wang, Yuanyuan Nan, Yi Wen, Jun Chen, “A Pedestrian Detection Method and System Using Salient Histogram Feature”, No.201410268777.6, 2014. (*In Chinese*)
- P6. Ruimin Hu, Wenhua Fang, **Chao liang**, Xiao Wang, Yuanyuan Nan, Yi Wen, Jun Chen, “A Pedestrian Detection Method and System Using Salient Regions”, No.201410266759.4, 2014. (*In Chinese*)
- P7. Ruimin Hu, Wenhua Fang, **Chao liang**, Yuanyuan Nan, Xiao Wang, Yifei Pan, Jun Chen, “A Low Re-resolution Pedestrian Detection Method Using Sparse Representation”, No.201410291012.4, 2014. (*In Chinese*)
- P8. Ruimin Hu, Zheng Wang, **Chao liang**, Bingyue Huang, Mang Ye, Yan Yan, Jun Chen, “A Person Re-identification Method Using Data Driven Adaptive Metric”, No.201410541165.X, 2014. (*In Chinese*)
- P9. Ruimin Hu, Mang Ye, Jun Chen, **Chao liang**, Qingming Leng, Zheng Wang, Yifei Pan, “A Person Re-identification Method Using Dual-view Rankings”, No.201410454857.0, 2014. (*In Chinese*)
- P10. Ruimin Hu, Qingming Leng, **Chao liang**, Mang Ye, Zheng Wang, Cuina Jiao, Yimin Wang, “A Person Re-identification Method Using Collaborative Metric Learning”, No.201410071721.1, 2014. (*In Chinese*)
- P11. Ruimin Hu, Zheng Wang, **Chao liang**, Qingming Leng, Wengang Li, Jun Chen, Yan Yan, “A Person Re-identification Method and System Using Region-based Relevance Feedback”, No.201410076028.3, 2014. (*In Chinese*)
- P12. Ruimin Hu, Yimin Wang, **Chao Liang**, Bo Luo, Qi Zheng, Mingfu Xiong, “A Object Tracking Method Using Saliency”, No. 201410086703.0, 2014. (*Issued, in Chinese*)
- P13. Ruimin Hu, Yimin Wang, **Chao Liang**, Bingyue Huang, Qi Zheng, Jun Chen, “A Person Retrieval Method Using Sparse-based Occlusion Handling Scheme”, No.201410014852.6, 2014. (*Issued, in Chinese*)
- P14. Ruimin Hu, Qingming Leng, **Chao Liang**, Yimin Wang, Jun Chen, Hua Zhang, “A Person Retrieval Method Using Dual-directional Ranking”, No.201310277259.9, 2013. (*Issued, in Chinese*)
- P15. Changsheng Xu, Jian Cheng, **Chao Liang**, Xinming Zhang, “A Multi-modality facilitated Language Communication System and Method”, No. 201110225342.X, 2011. (*Issued, in Chinese*)
- P16. Changsheng Xu, Hanqing Lu, **Chao Liang**, Jian Cheng, “A TV Parser Method Using Roles”, No.201110406765.1, 2014. (*Issued, in Chinese*)

#### [Software Copyrights]

- SC1. Ruimin Hu, **Chao Liang**, Zheng Wang, Mang Ye, Jun Chen, Yan Yan, Jun Liu, “A Image-based Investigation Software Using Human Computer Interaction”, No. 2015SR085551, 2015 (*Issued, in Chinese*)

SC2. Ruimin Hu, Bo Luo, **Chao Liang**, Weijian Ruan, Dongquan Yi, Wenjun Huang, “A Multi-camera Tracking System Software”, No.2015SR085548, 2015. (*Issued, in Chinese*)

PROFESSIONAL  
ACTIVITIES

**[Reviewers]**

- R1. *Pattern Recognition* (PR)
- R2. *IEEE Trans. on Multimedia* (TMM)
- R3. *ACM Trans. on Multimedia Computing, Communications and Applications* (TOMCCAP)
- R4. *IET Image Processing*
- R5. *ACM/Springer Multimedia Systems Journal* (MMSJ)
- R6. *Signal Processing* (SP)
- R7. *Neurocomputing*
- R8. *Multimedia Tools and Applications* (MTA)
- R9. *Software: Practice and Experience* (SPE)

**[Organizers]**

- S1. General Secretary, *Multimedia Communication Committee, China Institute of Communications*, 2016 – now
- S2. Special Session Co-chair, *Pacific-Rim Conf. on Multimedia*, 2015

**[Membership]**

- M1. Member, *China National Information Technology Standardization Committee* (CNITSC)
- M2. Member, *Association for Computing Machinery* (ACM)
- M3. Member, *Institute of Electrical and Electronics Engineers* (IEEE)
- M4. Member, *China Computer Federation* (CCF)

ENGLISH  
PROFICIENCY

CET 4: 80.5 (/100), CET 6: 81.5 (/100), Spoken English: A (*top class*)  
IELTS: 6.5 (/9) where Listening: 7 (/9), Reading: 6 (/9), Writing: 6 (/9) and Speaking: 6.5 (/9)

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