

Prof. Liang Wang

National Laboratory of Pattern Recognition
Institute of Automation
Chinese Academy of Sciences
Beijing, China, 100190

Tel: +86 10 82610573
Fax: +86 10 62551993
E-mail: wangliang@nlpr.ia.ac.cn
[Http://www.cbsr.ia.ac.cn/users/liangwang/](http://www.cbsr.ia.ac.cn/users/liangwang/)

1. SHORT BIOGRAPHY

Liang Wang received both the B. Eng. and M. Eng. degrees in Electronic Engineering from the Department of Electronics Engineering and Information Science, Anhui University (AHU), China, in 1997 and 2000 respectively, and the PhD degree in Pattern Recognition and Intelligent System from the National Laboratory of Pattern Recognition (NLPR), Institute of Automation, Chinese Academy of Sciences (CAS), China, in 2004. After graduation, he has worked as a Research Assistant at the Department of Computing, Imperial College London, United Kingdom and at the Department of Electrical and Computer Systems Engineering, Monash University, Australia, and a Research Fellow at the Department of Computer Science and Software Engineering, University of Melbourne, Australia, respectively. Before he returned back to China, he was a Lecturer with the Department of Computer Science, University of Bath, United Kingdom. Currently, he is a Professor of Hundred Talents Program at the Institute of Automation, Chinese Academy of Sciences, P. R. China.

His major research interests include machine learning, pattern recognition, computer vision, multimedia processing, and data mining. He has widely published at highly-ranked international journals such as IEEE TPAMI, IEEE TIP, IEEE TKDE, IEEE TCSVT, IEEE TSMC, CVIU, and PR, and leading international conferences such as CVPR, ICCV and ICDM. He has obtained several honors and awards such as the Special Prize of the Presidential Scholarship of Chinese Academy of Sciences and the Research Commendation from University of Melbourne in recognition of Excellent Research. He is currently a Senior Member of IEEE (Institute of Electrical and Electronics Engineers), as well as a member of IEEE Computer Society, IEEE Communications Society and BMVA (British Machine Vision Association).

He is serving with more than 20 major international journals and more than 40 major international conferences and workshops. He is an associate editor of IEEE Transactions on Systems, Man and Cybernetics – Part B, International Journal of Image and Graphics (WorldSci), International Journal of Signal Processing (Elsevier), Neurocomputing (Elsevier), and International Journal of Cognitive Biometrics (Inderscience). He is a leading guest editor of 3 special issues appearing in PRL (Pattern Recognition Letters), IJPRAI (International Journal of Pattern Recognition and Artificial Intelligence) and IEEE TSMC-B, as well as a co-editor of 5 edited books. He has also co-chaired 8 international workshops.

2. RESEARCH INTEREST

Machine learning, pattern recognition, computer vision, multimedia processing, and data mining

3. QUALIFICATIONS

- 2000.9-2004.3, PhD in Pattern Recognition and Intelligent System, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences (CASIA), Beijing, China (Supervisor: **Prof. Tieniu Tan**)
 - 1997.9-2000.6, Master of Engineering in Circuits and Systems, Department of Electronics Engineering and Information Science, Anhui University, Hefei, China (Supervisor: **Prof. Jun Ming**)
 - 1993.9-1997.6, Bachelor of Engineering in Electronics Engineering, Department of Electronics Engineering and Information Science, Anhui University, Hefei, China
-

4. SELECTED PUBLICATIONS

Representative journal papers

- *L. Wang*, W. M. Hu and T. N. Tan, Recent developments in human motion analysis, *Pattern Recognition (PR)*, 2003, 36(3): 585-601.
- *L. Wang*, T. N. Tan, H. Z. Ning and W. M. Hu, Silhouette analysis based gait recognition for human identification, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2003, 25(12): 1505-1518.
- *L. Wang*, T. N. Tan, W. M. Hu and H. Z. Ning, Automatic gait recognition based on statistical shape analysis, *IEEE Transactions on Image Processing (TIP)*, 2003, 12(9): 1120-1131.
- *L. Wang*, T. N. Tan, H. Z. Ning and W. M. Hu, Fusion of static and dynamic body biometrics for gait recognition, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, 2004, 14(2): 149-158.
- *L. Wang* and D. Suter, Learning and matching of dynamic shape manifolds for human action recognition, *IEEE Transactions on Image Processing (TIP)*, 2007, 16(6): 1646-1661.
- *L. Wang* and D. Suter, Visual learning and recognition of sequential data manifolds with applications to human movement analysis, *Computer Vision and Image Understanding (CVIU)*, 2008, 110(2): 153-172.
- *L. Wang*, C. Leckie, R. Kotagiri and J. Bezdek, Automatically determining the number of clusters in unlabeled data sets, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2009, 21(3): 335-350.

- *L. Wang, X. Geng, J. Bezdek, C. Leckie and R. Kotagiri, Enhanced visual analysis for cluster tendency assessment and data partitioning, IEEE Transactions on Knowledge and Data Engineering (TKDE), 2010, 22(10): 1401-1414.*

Representative conference papers

- *L. Wang, X. Geng, J. Bezdek, C. Leckie and R. Kotagiri, SpecVAT: enhanced visual cluster analysis, Proceedings of IEEE International Conference on Data Mining (ICDM), pp. 638-647, 2008.*
 - *L. Wang, X. Geng, C. Leckie and R. Kotagiri, Moving shape dynamics: a signal processing perspective, Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), pp. 1649-1656, 2008.*
 - *L. Wang and D. Suter, Recognizing human activities from silhouettes: motion subspace and factorial discriminative graph model, Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), pp. 2518-2525, 2007.*
 - *L. Wang, H. Z. Ning, T. N. Tan and W. M. Hu, Fusion of static and dynamic body biometrics for gait recognition, Proceedings of IEEE International Conference on Computer Vision (ICCV), 2: 1449-1454, 2003.*
-

5. PATENTS

- *Gait-based human identification at a distance, Chinese Invention Patent Number: ZL01144157.7, issued in 2004.*
-

6. RESEARCH GRANTS

- *Principal Investigator: Theory and method of intelligent visual computing; 2010.5~2013.5; Fund of Hundred Talents Program, Chinese Academy of Sciences; 2,000,000 RMB.*
- *Principal Investigator: Large-scale visual cluster analysis and its application; 2012.1~2015.12; National Natural Science Funds of China; 580,000 RMB.*
- *Principal Investigator: Research and application of multimodal biometric recognition systems at a distance; 2011.1~2013.12; International S&T Cooperation; 2,730,000 RMB.*
- *Principal Investigator: Research on the enhanced searching system, the key technologies and the testing standards; 2011.1~2013.6; National S&T Supporting Program (sub-project); 800,000 RMB.*
- *Principal Investigator: Statistical machine learning and large-scale data mining of Internet multimedia data; 2010.5~2013.5; Start-up Fund of Hundred Talents Program, Institute of Automation, Chinese Academy of Sciences; 700,000 RMB.*

- *Principal Investigator*: Advanced vision computing based on machine learning; Start-up Fund of National Lab of Pattern Recognition; 2010.5~2011.5; 325,000 RMB.
 - *Principal Investigator*; Learning to automatically understand human activities in videos; Early Career Researcher Grant Award, 2009.1~2009.12; The University of Melbourne; 38, 843 AUD.
 - *Main participant*: Data mining by clustering in very large relational databases; 2006.1~2008.12; ARC (Australian Research Council) Discovery Project, Australia; 250,000 AUD.
 - *Main participant*: Perceptive and intelligent machines in complex environments; 2003.1~2007.12; ARC (Australian Research Council) Special Research Centre, Australia; 5,000,000 AUD.
 - *Main participant*; UbiSense: vision-based sensing for elderly and chronically ill people; 2004.1 ~ 2005.12; Department of Industry and Trade, United Kingdom.
-

7. PUBLICATIONS

GX: Google scholar citation (until Oct 2011)

Books

1. *L. Wang*, G. Y. Zhao, L. Cheng, and M. Pietiaainen, Machine learning for vision-based motion analysis: theory and techniques, **Springer**, ISBN: 978-0-85729-056-4, 372 pages, December 2010.
2. D. Schonfeld, C. F. Shan, D. C. Tao, and *L. Wang*, Video search and mining, **Springer**, ISBN: 978-3-642-12899-8, 386 pages, March 2010.
3. *L. Wang*, L. Cheng and G. Y. Zhao, Machine learning for human motion analysis: theory and practice, **IGI Global USA**, ISBN: 978-1-60566-900-7, 387 pages, December, 2009.
4. *L. Wang* and X. Geng, Behavioural biometrics for human identification: intelligent applications, **IGI Global USA**, ISBN: 978-1-60566-725-6, 488 pages, August 2009.
5. J. Gonzalez, T. Moeslund and *L. Wang*, Tracking humans for the evaluation of their motion in image sequences, **Graficas Rey**, S.L. Spain, ISBN 13: 978-84-935251-9-4, 119 pages, September 2008.

Book chapters

6. S. Q. Yu and *L. Wang*, Gait recognition and analysis, in *L. Wang* and *X. Geng* (eds): Behavioural biometrics for human identification: intelligent applications, IGI Global USA, pp. 151-168, August 2009.

Refereed journal articles

7. *L. Wang*, H. Zhou, D. Suter, and C. Li, Spectrum analysis based model selection for Gaussian process classification, submitted to IEEE Transactions on Systems, Man and Cybernetics – Part B (**TSMCB**, under review).
8. R. He, T. N. Tan, and *L. Wang*, Robust recovery of corrupted low-rank matrix by Implicit Regularizers, IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**, under review).
9. Y. Z. Song, C. Li, *L. Wang*, and P. Hall, Robust visual tracking using structure hierarchy and graph matching, Neurocomputing, in press.
10. C. Wang, J. Zhang, *L. Wang*, J. Pu, and X. Yuan, Human identification using temporal information preserving gait templates, IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**, accepted).
11. *L. Wang* and C. Leckie, Improved Gaussian process classification via feature space rotation, Neurocomputing, 83:89-97, 2012.
12. H. X. Yang, L. Shao, F. Zheng, *L. Wang*, and Z. Song, Recent advances and trends in visual tracking: a review, Neurocomputing, 74(18): 3823-3831, 2012.
13. J. Gonzalez, T. B. Moeslund, and *L. Wang*, Editorial: Special issue on Semantic Understanding of Human Behaviors in Image Sequences: From Video-Surveillance to Video-Hermeneutics, Computer Vision and Image Understanding (**CVIU**), 116(3): 305-306, 2012.
14. *L. Wang*, L. Cheng and *L. Wang*, Elastic sequence correlation for human action analysis, IEEE Transactions on Image Processing (**TIP**), 2011, 20(6): 1725-1738.
15. X. Geng, K. Smith-Miles, Z. H. Zhou, and *L. Wang*, Face image modelling by multilinear subspace analysis with missing values, IEEE Transactions on System, Man, and Cybernetics, Part B (**TSMC-B**), 2011, 41(3): 881-892.
16. L. Shao, H. Zhang, *L. Wang*, and L. J. Wang, Repairing imperfect video enhancement algorithms using classification-based trained filters, The Signal, Image and Video Processing Journal (**SIVP**), 2011, 5(3): 307-313.
17. Y. Song, X. Bai, P. Hall and *L. Wang*, In search of perceptually salient groupings, IEEE Transactions on Image Processing (**TIP**), 2011, 20(4): 935-947.
18. B. Tan, J. P. Zhang and *L. Wang*, Semi-supervised elastic net for pedestrian counting, Pattern Recognition (**PR**), 2011, 44(10-11):2297-2304. **G2**
19. *L. Wang*, C. Leckie, R. Kotagiri, and J. Bezdek, Approximate pairwise clustering for large datasets via sampling plus extension, Pattern Recognition (**PR**), 2011, 44(2): 222-235.
20. *L. Wang*, G. Y. Zhao, N. Rajpoot, and M. Nixon, Special issue on new advances in video-based gait analysis and applications: challenges and solutions, IEEE Transactions on System, Man and Cybernetics – Part B (**TSMC-B**), 2010, 40(4): 982-985.
21. X. Geng, K. Smith-Miles, *L. Wang*, M. Li, and Q. Wu, Context-aware multi-biometric fusion with application to human identification in video, Pattern Recognition (**PR**), 2010, 43 (10): 3660-3673. **G2**

22. *L. Wang*, X. Geng, J. Bezdek, C. Leckie, and R. Kotagiri, Enhanced visual analysis for cluster tendency assessment and data partitioning, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2010, 22(10): 1401-1414. **G3**
23. *L. Wang*, Q. Wu, M. Li, J. González, and X. Geng, Editorial: Video analysis and understanding for surveillance applications, *International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI)*, 2009, 23(7): 1-2.
24. *L. Wang*, Q. Wu, H. Wang, X. Geng, and M. Li, Editorial: Image/video based pattern analysis and HCI applications, *Pattern Recognition Letters (PRL)*, 2009, 30(12): 1-1.
25. H. Zhou, *L. Wang* and D. Suter, Human action recognition using feature-reduced Gaussian process classification, *Pattern Recognition Letters (PRL)*, 2009, 30(12): 1059-1066. **G6**
26. *L. Wang*, C. Leckie, R. Kotagiri, and J. Bezdek, Automatically determining the number of clusters in unlabeled data sets, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2009, 21(3): 335-350. **G16**
27. *L. Wang* and D. Suter, Visual learning and recognition of sequential data manifolds with applications to human movement analysis, *Computer Vision and Image Understanding (CVIU)*, 2008, 110(2): 153-172. **G24**
28. *L. Wang*, J. C. Bezdek, C. Leckie, and R. Kotagiri, Selective sampling for approximate clustering of very large data sets, *International Journal of Intelligence Systems (IJIS)*, 2008, 23(3): 313-331. **G7**
29. *L. Wang* and D. Suter, Learning and matching of dynamic shape manifolds for human action recognition, *IEEE Transactions on Image Processing (TIP)*, 2007, 16(6): 1646-1661. **G72**
30. J. Coutinho, M. Juvonen, *L. Wang*, B. Lo, W. Luk, O. Mencer, and G. Yang, Designing a posture analysis system with hardware implementation, *Journal of VLSI Signal Processing Systems for Signal Image and Video Technology (VLSI-SPS)*, 2007, 47(1): 33-45. **G2**
31. *L. Wang*, T. N. Tan, H. Z. Ning, and W. M. Hu, Fusion of static and dynamic body biometrics for gait recognition, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, 2004, 14(2): 149-158. **G124**
32. W. M. Hu, T. N. Tan, *L. Wang*, and S. Maybank, A survey of visual surveillance of object motion and behaviors, *IEEE Transactions on Systems, Man, and Cybernetics - Part C (TSMC-C)*, 2004, 34(3): 334-352. **G883**
33. H. Z. Ning, T. N. Tan, *L. Wang*, and W. M. Hu, Kinematics-based tracking of human walking in monocular video sequences, *Image and Vision Computing (IVC)*, 2004, 22: 429-441. **G45**
34. H. Z. Ning, T. N. Tan, *L. Wang*, and W. M. Hu, People tracking based on motion model and motion constraints with automatic initialization, *Pattern Recognition (PR)*, 2004, 37: 1423-1440. **G37**

35. *L. Wang*, T. N. Tan, H. Z. Ning, and W. M. Hu, Silhouette analysis based gait recognition for human identification, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2003, 25(12): 1505-1518. **G398**
36. *L. Wang*, T. N. Tan, W. M. Hu, and H. Z. Ning, Automatic gait recognition based on statistical shape analysis, *IEEE Transactions on Image Processing (TIP)*, 2003, 12(9): 1120-1131. **G144**
37. *L. Wang*, W. M. Hu and T. N. Tan, Recent developments in human motion analysis, *Pattern Recognition (PR)*, 2003, 36(3): 585-601. **G536**
38. *L. Wang*, W. M. Hu and T. N. Tan, Gait-based human identification, *Journal of Computers*, 2003, 26(3): 353-360. **G151**
39. *L. Wang*, W. M. Hu and T. N. Tan, A survey of visual analysis of human motion, *Journal of Computers (in Chinese)*, 2002, 25(3): 225-237. **G301**
40. *L. Wang*, Y. Y. Liu, C. Y. Liu, and J. Ming, Improvement of test methods for 'G-Y' matrix, *Journal of Anhui University (Natural Sciences, in Chinese)*, 2000, 24(2): 35-38. **G2**
41. J. Ming, P. Wu and *L. Wang*, Generation of signals for video primary-colour encoders, *Journal of University of Electronic Science and Technology of China (in English)*, 1999, 28(5): 464-466.
42. J. Ming, P. Wu and *L. Wang*, Signal design for video primary-colour encoders, *Journal of Image and Graphics (in Chinese)*, 1999, 4(7): 579-582. **G4**

Refereed conference papers

43. R. He, T. N. Tan, *L. Wang*, and W. S. Zheng, l21 regularized correntropy for robust feature selection, to appear at Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**, 24% acceptance rate), 2012.
44. C. Wang, J. P. Zhang, J. Pu, X. R. Yuan, and *L. Wang*, Chrono-gait image: A novel temporal template for gait recognition, Proceedings of European Conference on Computer Vision (**ECCV**, Poster, 27% acceptance rate), pp. 257-270, 2010.
45. *L. Wang*, C. Leckie and R. Kotagiri, Combining real and virtual graphs to enhance data clustering, Proceedings of International Conference on Pattern Recognition (**ICPR**, Oral), pp. 790-793, 2010.
46. *L. Wang* and C. Leckie, Encoding actions via the quantized vocabulary of averaged silhouettes, Proceedings of International Conference on Pattern Recognition (**ICPR**, Poster), pp. 3657-3660, 2010.
47. H. Qu, *L. Wang* and C. Leckie, Action recognition using space-time shape differences, Proceedings of International Conference on Pattern Recognition (**ICPR**, Poster), pp. 3661-3664, 2010.
48. *L. Wang*, U. Nguyen, C. Leckie, J. Bezdek, and R. Kotagiri, iVAT and aVAT: visual analysis for cluster tendency assessment, Proceedings of 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**, Long, 10.2% acceptance rate), LNAI 6118, pp. 16-27, 2010. **G10**

49. U. Nguyen, L. Park, *L. Wang*, and R. Kotagiri, A novel path-based clustering algorithm using multi-dimensional scaling, Proceedings of the 22nd Australian Joint Conference on Artificial Intelligence (**AI**), LNAI 5866, pp. 280-290, 2009.
50. *L. Wang*, H. Zhou, S. Low, and C. Leckie, Action recognition via multi-feature fusion and Gaussian process classification, Proceedings of International Workshop on Applications of Computer Vision (**WACV**), pp. 1-6, 2009. **G1**
51. X. Geng, K. Smith-Miles, *L. Wang*, and Z. H. Zhou, Face image modelling by multilinear subspace analysis with missing values, Proceedings of ACM International Conference on Multimedia (**MM**), pp. 629-632, 2009. **G3**
52. *L. Wang*, C. Leckie, R. Kotagiri, and J. Bezdek, Approximate spectral clustering, Proceedings of 13th Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**, Long, **11.5%** acceptance rate), LNAI 5476, pp. 134-146, 2009. **G3**
53. *L. Wang*, X. Geng, J. Bezdek, C. Leckie, and R. Kotagiri, SpecVAT: enhanced visual cluster analysis, Proceedings of IEEE International Conference on Data Mining (**ICDM**, Regular, **9.6%** acceptance rate), pp. 638-647, 2008. **G4**
54. H. Zhou, *L. Wang* and D. Suter, Human motion recognition using Gaussian processes classification, Proceedings of the 19th International Conference on Pattern Recognition (**ICPR**, Oral, **18%** acceptance rate), pp. 1-4, 2008. **G2**
55. J. Cheng, *L. Wang* and C. Leckie, Dual clustering for categorization of action sequences, Proceedings of the 19th International Conference on Pattern Recognition (**ICPR**, Poster), pp. 1-4, 2008.
56. *L. Wang*, X. Geng, C. Leckie, and R. Kotagiri, Moving shape dynamics: a signal processing perspective, Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**, Poster, **27.9%** acceptance rate), pp. 1649-1656, 2008. **G10**
57. X. Z. Wang, *L. Wang* and A. Wirth, Pattern discovery in motion time series via structure-based spectral clustering, Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**, Poster, **27.9%** acceptance rate), pp. 341-348, 2008. **G1**
58. *L. Wang*, X. Z. Wang, C. Leckie, and R. Kotagiri, Characteristic-based descriptors for motion sequence recognition, Proceedings of the 12th Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**, Long, **11.9%** acceptance rate), LNCS 5012, pp. 369-380, 2008. **G2**
59. X. Geng, *L. Wang*, M. Li, Q. Wu, and K. Smith-Miles, Adaptive fusion of gait and face for human identification in video, Proceedings of IEEE Workshop on Applications of Computer Vision (**WACV**, Oral), pp. 1-6, 2008. **G1**
60. X. Z. Wang, A. Wirth and *L. Wang*, Structure-based statistical features and multivariate time series clustering, Proceedings of the 7th IEEE International Conference on Data Mining (**ICDM**, Regular, **7.5%** acceptance rate), pp. 351-360, 2007. **G11**

61. *L. Wang* and D. Suter, Recognizing human activities from silhouettes: motion subspace and factorial discriminative graph model, Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**, Poster, **23.4%** acceptance rate), pp. 2518-2525, 2007. **G81**
62. *L. Wang*, C. Leckie, X. Z. Wang, R. Kotagiri, and J. Bezdek, Tensor space learning for analyzing activity patterns from video sequences, Proceedings of the ICDM'07 Workshop on Knowledge Discovery and Data Mining from Multimedia Data and Multimedia Applications (**KDM**, Oral), pp. 63-68, 2007. **G3**
63. Q. Wu, *L. Wang*, X. Geng, M. Li, and X. He, Dynamic biometrics fusion at feature level for video-based human recognition, Proceedings of the 22nd Image and Vision Computing New Zealand Conference (**IVCNZ**, Oral), pp. 152-157, 2007. **G3**
64. T. J. Chin, *L. Wang*, K. Schindler, and D. Suter, Extrapolating learned manifolds for human activity recognition, Proceedings of the 14th IEEE International Conference on Image Processing (**ICIP**, Poster), I: 381-384, 2007. **G8**
65. X. Geng, *L. Wang*, M. Li, Q. Wang, and K. Smith-Miles, Distance-driven fusion of face and gait for human recognition in video, Proceedings of the 22nd Image and Vision Computing New Zealand Conference (**IVCNZ**, Oral), pp. 19-24, 2007. **G3**
66. *L. Wang* and D. Suter, Analyzing human movements from silhouettes using manifold learning, Proceedings of the 5th IEEE International Conference on Advanced Video- and Signal-based Surveillance (**AVSS**, Oral), p. 7, 2006. **G17**
67. *L. Wang* and D. Suter, Informative shape representations for human action recognition, Proceedings of the 18th International Conference on Pattern Recognition (**ICPR**, **15%** acceptance rate), 2: 1266-1269, 2006. **G27**
68. *L. Wang*, Abnormal walking gait analysis using silhouette-masked flow histograms, Proceedings of 18th International Conference on Pattern Recognition (**ICPR**, Poster), III: 473-476, 2006. **G12**
69. *L. Wang*, From blob metrics to posture classification to activity profiling, Proceedings of the 18th International Conference on Pattern Recognition (**ICPR**, Poster), 4: 736-739, 2006. **G5**
70. *L. Wang*, B. Lo and G. Z. Yang, Ubiquitous sensing for posture/behaviour analysis, Proceedings of the 2nd International Workshop on Wearable and Implantable Body Sensor Networks (**BSN**, Poster), pp. 112-115, 2005.
71. D. Agathangelou, B. Lo, *L. Wang*, and G. Z. Yang, Self-configuring video-sensor networks, Proceedings of the 3rd International Conference on Pervasive Computing (**Pervasive**, Poster), pp. 29-32, 2005. **G13**
72. B. Lo, *L. Wang* and G. Z. Yang, From imaging networks to behaviour profiling: ubiquitous sensing for managed homecare of the elderly, Proceedings of the 3rd International Conference on Pervasive Computing (**Pervasive**, Demo), pp. 101-104, 2005. **G27**
73. M. P. Juvonen, J. G. Coutinho, *L. Wang*, B. L. Lo, W. Luk, O. Mencer, and G. Z. Yang, Custom hardware architectures for posture analysis, Proceedings of IEEE

- International Conference on Field-Programmable Technology (**FPT**, Oral), pp. 77-84, 2005. **G5**
74. G. Z. Yang, B. Lo, *L. Wang*, M. Rans, S. Thiemjarus, J. Ng, P. Garner, S. Brown, B. Majeed, and I. Neid, From sensor networks to behaviour profiling: a homecare perspective of intelligent building, Proceedings of the IEEE Seminar on Sensor Systems for Intelligent Buildings (**Invited Talk**), p. 3, 2004. **G19**
 75. S. Yu, *L. Wang*, W. M. Hu, and T. N. Tan, Gait analysis for human identification in frequency domain, Proceedings of the 4th International Conference on Image and Graphics (**ICIG**, Poster), pp. 282-285, 2004. **G29**
 76. *L. Wang*, H. Z. Ning, T. N. Tan, and W. M. Hu, Fusion of static and dynamic body biometrics for gait recognition, Proceedings of the 9th International Conference on Computer Vision (**ICCV**, Poster, **16.1%** acceptance rate), 2: 1449-1454, 2003. **G36**
 77. *L. Wang*, W. M. Hu and T. N. Tan, Face tracking using motion-guided dynamic template matching, Proceedings of the 5th Asian Conference on Computer Vision (**ACCV**, Oral), II: 448-453, 2002. **G15**
 78. *L. Wang*, W. M. Hu and T. N. Tan, A new attempt to gait-based human identification, Proceedings of the 16th International Conference on Pattern Recognition (**ICPR**, Poster), I: 115-118, 2002. **G39**
 79. *L. Wang*, H. Z. Ning, W. M. Hu, and T. N. Tan, Gait recognition based on Procrustes shape analysis, Proceedings of the 9th IEEE International Conference on Image Processing (**ICIP**, Poster), III: 433-436, 2002. **G39**
 80. H. Z. Ning, *L. Wang*, W. M. Hu, and T. N. Tan, Model-based tracking of human walking in monocular image sequences, Proceedings of the 17th IEEE Region 10 Technical Conference on Computers, Communication, Control and Power Engineering (**TENCON**, Oral), pp. 537-540, 2002. **G11**
 81. *L. Wang*, H. Z. Ning, T. N. Tan, and W. M. Hu, Gait recognition by combining static and dynamic body biometrics, Proceedings of the 4th Chinese Conference on Biometric Recognition (**CBR**, Oral), pp. 241-249, 2003.
 82. H. Z. Ning, *L. Wang*, W. M. Hu, and T. N. Tan, Articulated model based people tracking using motion models, Proceedings of the 4th International Conference on Multimodal Interfaces (**ICMI**, Oral), pp. 383-388, 2002. **G20**
 83. *L. Wang*, H. Z. Ning, W. M. Hu, and T. N. Tan, Automatic gait recognition based on statistical shape analysis, Proceedings of the 3rd Chinese Conference on Biometric Recognition (**CBR**, Oral), pp. 261-266, 2002.
 84. H. Z. Ning, *L. Wang*, W. M. Hu, and T. N. Tan, Tracking people based on human body model and kinematics, *Proceedings of the 1st Chinese Conference on Intelligent Visual Surveillance* (**IVS**, Oral), 2002.
 85. *L. Wang*, W. M. Hu and T. N. Tan, PCA-based automatic gait recognition for personal identification, Proceedings of the 2nd Chinese Workshop on Biometrics (**Sinobiometrics**, Oral), 2001.
-

8. WORKING EXPERIENCE

- 2010.5-Present, National Lab of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, China (Professor)
 - Research on machine learning, computer vision and pattern recognition.
- 2009.11-2010.7, Department of Computer Science, University of Bath, United Kingdom (Lecturer)
 - Research on computer vision, graphics and their applications.
- 2007.1-2009.11, Department of Computer Science and Software Engineering, The University of Melbourne, Australia (Research Fellow, Supervisor: **A/Prof. Christopher Leckie** and **Prof. Rao Kotagiri**)
 - Research on machine learning (especially unsupervised clustering) for very large relational data mining, supported by the ARC (Australian Research Council) Discovery Project.
- 2005.10-2007.1, Department of Electrical and Computer Systems Engineering, Monash University, Australia (Research Assistant, Supervisor: **Prof. David Suter**)
 - Research on video-based human motion and activity recognition, supported by the ARC Research Centre for Perceptive and Intelligent Machines in Complex Environments (PIMCE).
- 2004.7-2005.9, Department of Computing, Imperial College London, United Kingdom (Research Assistant, Supervisor: **Prof. Guangzhong Yang**)
 - Research on posture, gait and activity analysis for health monitoring of the elderly, supported by the DTI (Department of Trade and Industry) Project, United Kingdom.
- 2000.9-2004.3, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, China (PhD)
 - Research on people tracking and gait-based human identification, supported by the R&D Program of Hi-Tech (863), Natural Science Foundation of China (NSFC), Sino-Franco Joint Project, etc.
- 1997.9-2000.6, Department of Electronics Engineering and Information Science, Anhui University, China (Master)
 - Research on signal design of video primary-colour encoders, wavelet-based image compression and intelligent online impurity detector.
- 1998.5-1999.7, Department of Electronics Engineering and Information Science, Anhui University, China (Teaching Assistant)
 - Assisting in undergraduate course "Principle of colour television" and guiding 95/96 undergraduates in the "TV set assembling" practice.
- 1998.9-1999.6, Medical School of Anhui, China (Part-time Teacher)

- Teaching the curriculum such as "Data structure", "C program design" and "Computer principles".
-

9. HONOURS AND AWARDS

- Honorary Professor of the University of Melbourne, Australia, 2012.
 - Scopus Young Researcher Silver Award, 2011
 - Hundred Talents Program, Chinese Academy of Sciences, 2010.
 - The Marquis Who's Who in the World, 2009.
 - IEEE Senior Member, 2009.
 - The ECR Grant Award, University of Melbourne, 2009.
 - Research Commendation from the Department of Computer Science and Software Engineering, University of Melbourne, 2008.
 - National Hundred Excellent Doctoral Thesis Nomination, 2006.
 - Outstanding Doctoral Thesis of Chinese Academy of Sciences, 2005.
 - First-class Award of Science and Technology of Beijing, China, 2004.
 - Special Prize of the President Scholarship of Chinese Academy of Sciences, 2003.
 - First-class Scholarship of Excellent Postgraduates of the Institute of Automation, Chinese Academy of Sciences, 2003.
 - First-class Scholarship of Excellent Postgraduates of the Institute of Automation, Chinese Academy of Sciences, 2002.
 - First-class Award of the 4th Postgraduate Competition of Science and Technology of Anhui University, 1999.
 - Admitted to the Postgraduate Program with the Entrance Examination Waived (top 3%), 1997.
 - Honor of Outstanding Graduate of Anhui University, 1997.
 - "Electronic Cup" Prize of Anhui University, 1996.
 - Excellent Award of the first Keli-Cup Programming Competition of Anhui University, 1996.
 - Honors of Most Outstanding Students of Anhui University, 1995.
 - Honors of Most Outstanding Students of Anhui University, 1994.
 - First-class (three times), Second-class (once) and Third-class (once) Scholarships of Excellent Students of Anhui University, 1994-1997.
-

10. PRESENTATIONS/INVITED TALKS/SEMINARS

- Silhouette analysis based human action recognition, invited keynote speech at CJKPR2010, 2010/11/05.
- Overview of my research, CS departmental seminar, University of Bath, United Kingdom, 2010/03/12.
- Human action recognition, invited talk at the University of Technology, Sydney (UTS), 2009/08/06.

- Human action recognition, invited talk at the National ICT Australia (NICTA), Sydney, 2009/08/06.
 - Enhanced visual analysis for cluster tendency assessment and data partitioning, Peking University, China, 2009/06/25.
 - Human motion analysis from image sequences, CSSE departmental seminar, The University of Melbourne, 2007/05/15.
 - Analyzing human movements from silhouettes using manifold learning, Canon Information Systems Research Australia (CiSRA), Australia, 2006/11/24.
 - Vision-based posture, gait and activity analysis, ECSE departmental seminar, Monash University, 2005/11/18.
 - Presentations at ICCV'03, ICPR'06, AVSS'06, PAKDD'08, ICDM'08, etc
-

11. PROFESSIONAL ACTIVITIES

Membership

- Senior Member, IEEE (Institute of Electrical and Electronic Engineers)
- Member, IEEE Computer Society
- Member, IEEE Communications Society
- Member, BMVA (British Machine Vision Association)
- Member, IAPR (International Association of Pattern Recognition)
- Member, CCF (China Computer Federation)
- Member, ACM (Association for Computing Machinery)

Associate editors/Editorial board member

- Associate editor of IEEE Transactions on Systems, Man and Cybernetics, Part B (IEEE TSMC-B), 2007.12 -, ISSN: 1083-4419
- Associate editor of International Journal of Image and Graphics (IJIG), 2008.06 -, ISSN: 0219-4678
- Editorial board of Signal Processing, 2008.09 -2011.01, ISSN: 0165-1684
- Editorial board of Neurocomputing, 2009.03 -, ISSN: 0925-2312
- Editorial board of International Journal of Cognitive Biometrics, 2009.12-, ISSN: 2042-6461

Guest editors

- Sparse representation for event recognition in video surveillance, Pattern Recognition (PR), 2012.
- Machine learning in motion analysis, Image and Vision Computing (IVC), 2012.
- Semantic understanding of human behaviours, Computer Vision and Image Understanding (CVIU), 2012, 116(3).
- Lead guest editor, New advances in video-based gait analysis and applications: challenges and solutions, IEEE Transactions on Systems, Man and Cybernetics, Part-B (IEEE TSMC-B), 2010, 40(4).

- Lead guest editor, Image/video-based pattern analysis and HCI applications (PA&HCI), Pattern Recognition Letters (PRL), 2009, 30(12).
- Lead guest editor, Video analysis and understanding for surveillance applications (VAUSA), International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI), 2009, 23(7).

Book editors

- Lead editor, Machine learning for vision-based motion analysis: theory and technologies, Springer, 372 pages, December 2010
- Video search and mining, Springer, 386 pages, March 2010
- Lead editor, Machine learning for human motion analysis: theory and practice, IGI Global, 387 pages, December 2009
- Lead editor, Behavioural biometrics for human identification: intelligent applications, IGI Global, 488 pages, August 2009
- Tracking humans for the evaluation of their motion in image sequences, Gaficas Rey, Spain, 119 pages, September 2008

Grant reviewer

- Grant assessor of Australian Research Council (ARC) Discovery Projects, 2009.
- Grant assessor of Science and Technology Development Fund of Macao, 2011.

Journal reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI)
- IEEE Transactions on Image Processing (IEEE TIP)
- IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE)
- IEEE Transactions on Information Forensics and Security (IEEE TIFS)
- IEEE Transactions on System, Man and Cybernetics, Part C (IEEE TSMC-C)
- IEEE Transactions on System, Man and Cybernetics, Part B (IEEE TSMC-B)
- IEEE Transactions on Instrumentation and Measurement (IEEE TIM)
- IEEE Transactions on Intelligent Transportation Systems (IEEE ITS)
- IEEE Transactions on Circuit and System for Video Technology (IEEE TCSVT)
- International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI)
- International Journal of Image and Graphics (IJIG)
- International Journal of Signal, Image and Video Processing (SIVP)
- International Journal of Digital Multimedia Broadcasting (IJDMB)
- Pattern Recognition (PR)
- Pattern Recognition Letters (PRL)
- Data Mining and Knowledge Discovery (DMKD)
- Machine Vision and Applications (MVA)
- Image and Vision Computing (IVC)
- Neurocomputing (NEUCOM)
- Signal Processing (SIGPRO)
- EURASIP Journal of Image and Video Processing (IVP)

- EURASIP Journal on Advances in Signal Processing
- Applied Intelligence (APIN)
- IPSJ Transactions on Computer Vision and Applications (CVA)
- Computers in Biology and Medicine (CBM)

Conference PC member

- The 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD2012)
- International Symposium on Neural Networks (ISNN2011)
- The 15th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD2011)
- The 15th National Conference on Image and Graphics (NCIG2010)
- The 4th International Conference on Image and Signal Processing (ICISP2010)
- The 3rd International Congress on Image and Signal Processing (CISP2010)
- The 6th International Conference on Natural Computation (ICNC2010)
- The 7th AIMI International Conference on Image Analysis and Recognition (ICIAR2010)
- The 10th IEEE Computer Society International Conference on Computer and Information Technology (CIT2010)
- International Symposium on Neural Networks (ISNN2010)
- International Conference on Imaging Theory and Applications (IMAGAPP2010)
- IASTED Conference on Computer Graphics and Imaging (CGIM2010)
- The 3rd International Conference on Biometrics: Theory, Applications and Systems (BTAS2009)
- The 16th International Conference on Digital Signal Processing (DSP2009)
- International Conference on Frontier of Computer Science and Technology (FCST2009)
- The 6th IEEE Computer Society International Conference on Advanced Video and Signal Based Surveillance (AVSS2009)
- The 7th International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR2009)
- The 5th International Conference on Natural Computation (ICNC2009)
- The 9th IEEE Computer Society International Conference on Computer and Information Technology (CIT2009)
- The 5th International Conference on Image and Graphics (ICIG2009)
- The 6th AIMI International Conference on Image Analysis and Recognition (ICIAR2009)
- The 5th IEEE Computer Society International Conference on Advanced Video and Signal Based Surveillance (AVSS2008)
- The 3rd International Conference on Image and Signal Processing (ICISP2008)
- International Conference on Artificial Intelligence and Pattern Recognition (AIPR2008)

- The 8th IEEE Computer Society International Conference on Computer and Information Technology (CIT2008)
- Technical program committee member of Pattern Recognition and Image Processing Track at the 6th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA2008)
- The 5th International Conference on Articulated Motion and Deformable Objects (AMDO2008)
- The 5th AIMI International Conference on Image Analysis and Recognition (ICIAR2008)
- The 6th International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR2008)
- The 6th IADIS International Conference on WWW/Internet, 2007
- International Conference on Computer Vision and Pattern Recognition (CVPR2006)

Workshop PC member

- The 1st International Workshop on Performance Evaluation on Recognition of Human Actions and Pose Estimation Methods (PERHAPS) 2011 in association with ICCV 2011.
- The 10th International Workshop on Pattern Recognition in Information Systems (PRIS2010)
- The 9th International Workshop on Pattern Recognition in Information Systems (PRIS2009)
- The Computer Vision Applications track in the 3rd Pacific-Rim Symposium on Image and Video Technology (PSIVT2009)
- The 9th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS2008)
- The 8th IEEE Signal Processing Society International Workshop on Multimedia Signal Processing (MMSP2008)
- Scientific committee member of the 1st IAPR Workshop on Cognitive Information Processing (CIP2008)
- The 8th International Workshop on Pattern Recognition in Information Systems (PRIS2008)
- The 1st Student Symposium on Visual Computing, 2003

Conference non-PC reviewer

- European Conference on Computer Vision (ECCV)
- IEEE International Conference on Data Mining (ICDM)
- IEEE International Conference on Multimedia & Expo (ICME)
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC)
- IEEE International Conference on Image Processing (ICIP)

- International Conference on Computer Vision Systems (ICVS)
- IEEE CS International Conference on Computer Vision and Pattern Recognition (CVPR)
- IEEE International Conference on Computer Vision (ICCV)
- International Conference on Pattern Recognition (ICPR)
- Asian Conference on Pattern Recognition (ACPR)

Conference/Workshop/Session organizer

- Program chair of the 5th Chinese Conference on Pattern Recognition (CCPR2012)
- Program chair of the 9th International Conference on Advanced Video and Signal-Based Surveillance (AVSS2012)
- Organizing chair of NSFC-RSE Workshop on Emerging Directions of Image Processing and Understanding, 2011.
- Student committee of the 3rd Sino-USA Summer School on Vision, Learning and Pattern Recognition (VLPR'11), 2011.
- Co-chair of the 1st International Workshop on Sparse Representation for Event Detection in Multimedia (SRED'11) in conjunction with ACM Multimedia 2011.
- Co-chair of the 3rd International Workshop on Video Event Categorization, Tagging and Retrieval for Real-World Applications (VECTaR'11) in conjunction with ICCV2011.
- Co-chair of the 3rd International Workshop on Machine Learning for Vision-based Motion Analysis (MLVMA'11) in conjunction with CVPR2011
- Publication chair of the 1st Asian Conference on Pattern Recognition (ACPR2011)
- Program area chair of the 1st International Workshop on Analysis and Retrieval of Tracked Events and Motion in Imagery Streams (ARTEMIS'10) in conjunction with ACM Multimedia 2010
- Co-chair of the 2nd International Workshop on Machine Learning for Vision-based Motion Analysis (MLVMA'09) in conjunction with ICCV2009
- Co-chair of the 2nd International Workshop on Tracking Humans for the Evaluation of Their Motion in Image Sequences (THEMIS'09) in conjunction with ICCV2009
- Co-chair of the 1st International Workshop on Video Mining (VM'08) in conjunction with ICDM2008
- Co-chair of the 1st International Workshop on Machine Learning for Vision-based Motion Analysis (MLVMA'08) in conjunction with ECCV2008
- Co-chair of the 1st International Workshop on Tracking Humans for the Evaluation of Their Motion in Image Sequences (THEMIS'08) in conjunction with BMVC2008
- Co-chair of invited special session on Image and Video-based Pattern Analysis and Applications (IVPAA'08) in conjunction with CIT2008
- Organizing committee member of the 2nd International Workshop on Wearable and Implantable Body Sensor Networks (BSN2005)

- Organizing committee member of the 2nd Chinese Conference on Intelligent Visual Surveillance (IVS2003)
- Organizing committee member of the 4th Chinese Conference on Biometrics Recognition (Sinobiometrics2003)
- Organizing committee member of the 1st Chinese Conference on Intelligent Visual Surveillance (IVS2002)

Visiting student/fellow

- Senior visiting research fellow, Computer Vision Centre, UAB, Barcelona, Spain, 11/2011.
 - Visiting research fellow, University of Technology, Sydney, 08/2009.
 - Short-term visiting student to University of Bordeaux-3, France, (2002, 2003)
-

12. TEACHING

- Digital Media (CM40198), Department of Computer Science, University of Bath, United Kingdom, 2010.2-2010.6.
-

13. SUPERVISION

- Summer scholarship project entitled “Human Action Categorization from Video Sequences”. 2007.12-2008.2. Student name: Joanna Cheng
 - Summer scholarship project entitled “Human Action Recognition and Search”. 2008.12-2009.2. Student name: Sui-Chien Low
 - Summer scholarship project entitled “Novelty Detection from Videos”. 2008.12-2009.2. Student name: Alexander Knight
 - Honour student (BCS) project entitled “Visual Event Analysis and Anomaly Detection”. 2009.03 – 2009.10, Student name: Hao Qu
 - Master student. 2009.01-2009.11, Student name: Uyen T. H. Nguyen
 - PhD student. 2006.01-2009.04, Student name: Cathy H. Zhou
 - Research assistant. 2009.04-2009.10, Name: Cathy H. Zhou
 - PhD student, 2010.09-, Student name: Dong Wang
 - PhD student, 2011.09-, Student name: Zifeng Wu
-

14. REFEREES

Note that referees are listed in an alphabetical order. Before contacting any referee, please kindly give me a notice.

Prof. James Bezdek

Department of Computer Science
 University of West Florida, USA
 E-mail: jbezdek@gmail.com

Note: Retired

Prof. Weiming Hu

National Laboratory of Pattern Recognition
Institute of Automation, Chinese Academy of Sciences, China
E-mail: wmhu@nlpr.ia.ac.cn
Tel: +86 10 62556911
Fax: +86 10 62551993

Prof. Rao Kotagiri

School of Engineering
The University of Melbourne, Australia
E-mail: rao@csse.unimelb.edu.au
Tel: +61 3 8344 1301
Fax: +61 3 9348 1184

A/Prof. Christopher Leckie

School of Engineering
The University of Melbourne, Australia
E-mail: caleckie@csse.unimelb.edu.au
Tel: +61 3 8344 1413
Fax: +61 3 9348 1184

Prof. David Suter

School of Computer Science
University of Adelaide, Australia
E-mail: dsuter@cs.adelaide.edu.au
Tel: +61 8 8303 3661
Fax: +61 8 8303 4366

Prof. Tieniu Tan

National Laboratory of Pattern Recognition
Institute of Automation, Chinese Academy of Sciences, China
E-mail: tnt@nlpr.ia.ac.cn
Tel: +86 10 82614515/68597549/68597550
Fax: +86 10 62551993

Prof. Phillip Willis

Department of Computer Science
University of Bath, Bath BA2 7AY, UK
Email: P.J.Willis@bath.ac.uk
Tel: +44 (0)1225 386 964
Fax: +44 (0)1225 383 493

Prof. Guangzhong Yang

Department of Computing
Imperial College London, London SW7 2AZ, UK

Email: g.z.yang@imperial.ac.uk
Tel: +44 (0)20 7594 8441