Longyin Wen

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Education

2010 – 2015	**Institute of Automation, Chinese Academic of Sciences, Beijing, China** Ph.D. in Pattern Recognition and Intelligent System , June 2015 <u>Dissertation</u>: *Graph based Object Tracking* <u>Advisor</u>: Prof. Stan Z. Li
2006 – 2010	**University of Electronic Science and Technology of China, Chengdu, China** B.S. in Automation, June 2010 <u>Thesis</u>: *Real-time Face Detection*

Professional Experience

2016.10 – 2018.08	**Computer Vision Scientist**	AI & Computer Vision Lab GE Global Research
2015.08 – 2016.10	**Postdoctoral Researcher**	Computer Science Department University at Albany, State University of New York
2009.10 – 2010.05	**Intern**	Institute of Automation, Chinese Academic of Sciences

Awards and Honors

2015	Pacesetter of the Merit Student in University of Chinese Academy of Sciences.
2014	Pan Deng Second Prize, Institute of Automation, Chinese Academy of Science.
2013	Merit Student in University of Chinese Academy of Sciences.
2009	National Scholarship in University of Electronic Science and Technology of China.
2008	National Scholarship in University of Electronic Science and Technology of China.
2007	National Scholarship in University of Electronic Science and Technology of China.
2007	Third Prize, High Mathematics Contest in University of Electronic Science and Technology of China.

Publications [1]

Journal Articles [2]

1. **Longyin Wen**, Zhaowei Cai, Zhen Lei, Dong Yi, and Stan Z. Li. Robust online learned spatio-temporal context model for visual tracking. *IEEE Transactions on Image Processing (TIP)*, 23(2):785–796, 2014. (impact factor: 4.828)

2. Zhaowei Cai, **Longyin Wen**, Zhen Lei, Nuno Vasconcelos, and Stan Z. Li. Robust deformable and occluded object tracking with dynamic graph. *IEEE Transactions on Image Processing (TIP)*, 23(12):5497–5509, 2014. (impact factor: 4.828)

3. **Longyin Wen**, Zhen Lei, Siwei Lyu, Stan Z. Li, and Ming-Hsuan Yang. Exploiting hierarchical dense structures on hypergraphs for multi-object tracking. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 38(10):1983–1996, 2016. (impact factor: 8.329)

4. **Longyin Wen**, Zhen Lei, Ming-Ching Chang, Honggang Qi, and Siwei Lyu. Multi-camera multi-target tracking with space-time-view hyper-graph. *International Journal of Computer Vision (IJCV)*, 2016. (impact factor: 8.222)

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[1] According to Google Scholar, my articles are totally cited more than **1986** times as of June 19, 2019.

[2] Journal impact factor is based on the latest Thomson Reuters Journal Citation Report.

5. Dawei Du, Honggang Qi, Wenbo Li, **Longyin Wen**, Qingming Huang, and Siwei Lyu. Online deformable object tracking based on structure-aware hyper-graph. *IEEE Transactions on Image Processing (TIP)*, 25(8):3572–3584, 2016. (impact factor: 4.828)

6. Dawei Du, Honggang Qi, **Longyin Wen**, Qi Tian, Qingming Huang, and Siwei Lyu. Geometric hypergraph learning for visual tracking. *IEEE Transactions on Cybernetics (TCYB)*, 2016. (impact factor: 7.384).

7. Dawei Du, **Longyin Wen**, Honggang Qi, Qingming Huang, Qi Tian, and Siwei Lyu. Iterative graph seeking for object tracking. *IEEE Transactions on Image Processing (TIP)*, 2017. (Accepted) (impact factor: 4.828)

8. **Longyin Wen**, Honggang Qi, and Siwei Lyu. Contrast enhancement estimation for digital image forensics. *ACM Transactions on Multimedia Computing, Communications and Applications (TOMM)*, 2018. (impact factor: 2.250)

9. Shifeng Zhang, **Longyin Wen**, Hailin Shi, Zhen Lei, Siwei Lyu, and Stan Z. Li. Single-shot scale-aware network for real-time face detection. *International Journal of Computer Vision*, 127(6-7):537–559, 2019. (impact factor: 8.222)

10. Lipeng Ke, Ming-Ching Chang, **Longyin Wen**, Honggang Qi and Siwei Lyu. Fast Online Video Pose Estimation by Dynamic Bayesian Modeling of Mode Transitions. *IEEE Transactions on Cybernetics (TCYB)*, 2016. (impact factor: 7.384).

Prestigesous Conference Papers

11. Kai Xu, **Longyin Wen**, Guorong Li, Liefeng Bo, and Qingming Huang. Spatiotemporal CNN for Video Object Segmentation. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, CA, 16-20 June, 2019.

12. Rui Zhu, Shifeng Zhang, Xiaobo Wang, **Longyin Wen**, Hailin Shi, Liefeng Bo, and Tao Mei. ScratchDet: Exploring to Train Single-Shot Object Detectors from Scratch. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, CA, 16-20 June, 2019.

13. **Longyin Wen***, Dawei Du*, Shengkun Li, Xiao Bian, and Siwei Lyu. Learning Non-Uniform Hypergraph for Multi-Object Tracking. AAAI Conference on Artificial Intelligence (AAAI), Honolulu, Hawaii, January 27 - February 1, 2019. (*Indicates equal contributions)

14. Shifeng Zhang, **Longyin Wen**, Xiao Bian, Zhen Lei, and Stan Z. Li. Occlusion-aware R-CNN: detecting pedestrians in a crowd. In *European Conference on Computer Vision (ECCV), Munich, Germany, September 8-14, 2018, Proceedings, Part III*, pages 657–674, 2018.

15. Shifeng Zhang, **Longyin Wen**, Xiao Bian, Zhen Lei, and Stan Z. Li. Single-Shot Refinement Neural Network for Object Detection. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Salt Lake City, UT, 18-22 June, 2018.

16. Wenbo Li, **Longyin Wen**, Ming-Ching Chang, Ser-Nam Lim, Siwei Lyu. Adaptive RNN Tree for Large-Scale Human Action Recognition. IEEE International Conference on Computer Vision (ICCV), Venice, Italy, 22-29 October, 2017.

17. Yang Yang, **Longyin Wen**, Siwei Lyu, Stan Li. Unsupervised Learning of Multi-Level Descriptors for Person Re-Identification. Association for the Advancement of Artificial Intelligence (AAAI), 2017. (**Oral**)

18. Yiming Ying, **Longyin Wen**, Siwei Lyu. Stochastic online AUC maximization. Advances in Neural Information Processing Systems (NIPS), Barcelona, Spain, 5-10 December, 2016. (**Oral**)

19. Wenbo Li*, **Longyin Wen***, Xiao Bian, and Siwei Lyu. Evolvement constrained adversarial learning for video style transfer. In *Computer Vision - ACCV 2018 - 14th Asian Conference on Computer Vision, Perth, Australia, December 2-6, 2018, Revised Selected Papers, Part I*, pages 232–248, 2018. (*Indicates equal contributions)

20. Yueming Yang, Ming-Ching Chang, **Longyin Wen**, Peter H. Tu, Honggang Qi, and Siwei Lyu. Efficient large-scale photometric reconstruction using divide-recon-fuse 3d structure from motion. In *13th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), Colorado Springs, CO, USA*, pages 180–186, 2016.

21. Wenbo Li*, **Longyin Wen***, Mooi Choo Chuah, and Siwei Lyu. Category-blind human action recognition: A practical recognition system. In *IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, December 11-16*, 2015. (*Indicates equal contributions)

22. **Longyin Wen**, Dawei Du, Zhen Lei, Stan Li, and Ming-Hsuan Yang. JOTS: Joint online tracking and segmentation. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Boston, MA, USA, June 7-12*, 2015.

23. **Longyin Wen**, Wenbo Li, Junjie Yan, Zhen Lei, Dong Yi, and Stan Z. Li. Multiple target tracking based on undirected hierarchical relation hypergraph. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Columbus, OH, USA, June 23-28*, pages 1282–1289, 2014.

24. Junjie Yan, Zhen Lei, **Longyin Wen**, and Stan Z. Li. The fastest deformable part model for object detection. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Columbus, OH, USA, June 23-28*, pages 2497–2504, 2014.

25. Menglong Yang, Yiguang Liu, **Longyin Wen**, Zhisheng You, and Stan Z. Li. A probabilistic framework for multitarget tracking with mutual occlusions. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Columbus, OH, USA, June 23-28*, pages 1298–1305, 2014.

26. **Longyin Wen**, Zhaowei Cai, Zhen Lei, Dong Yi, and Stan Z. Li. Online spatio-temporal structural context learning for visual tracking. In *European Conference on Computer Vision (ECCV), Florence, Italy, 7-13 October*, pages 716–729, 2012.

27. Zhaowei Cai, **Longyin Wen**, Jianwei Yang, Zhen Lei, and Stan Z. Li. Structured visual tracking with dynamic graph. In *Asian Conference on Computer Vision (ACCV), Daejeon, Korea, November 5-9*, pages 86–97, 2012.

28. Jianwei Yang, Zhaowei Cai, **Longyin Wen**, Zhen Lei, Guodong Guo, and Stan Z. Li. A new projection space for separation of specular-diffuse reflection components in color images. In *Asian Conference on Computer Vision (ACCV), Daejeon, Korea, 5-9 November*, pages 418–429, 2012.

Other Peer-Reviewed Conference/Workshop Papers

29. **Longyin Wen**, Pengfei Zhu, Dawei Du, Xiao Bian, Haibin Ling, etc. VisDrone-SOT2018: The Vision Meets Drone Single-Object Tracking Challenge Results. Vision Meets Drones: A Challenge Workshop in Conjunction with European Conference on Computer Vision (ECCV Workshop), 2018.

30. Pengfei Zhu, **Longyin Wen**, Dawei Du, Xiao Bian, Haibin Ling, etc. VisDrone-DET2018: The Vision Meets Drone Object Detection in Image Challenge Results. Vision Meets Drones: A Challenge Workshop in Conjunction with European Conference on Computer Vision (ECCV Workshop), 2018.

31. Pengfei Zhu, **Longyin Wen**, Dawei Du, Xiao Bian, Haibin Ling, etc. VisDrone-VDT2018: The Vision Meets Drone Video Detection and Tracking Challenge Results. Vision Meets Drones: A Challenge Workshop in Conjunction with European Conference on Computer Vision (ECCV Workshop), 2018.

32. Shengkun Li, Dawei Du, **Longyin Wen**, Ming-Ching Chang, Siwei Lyu. Hybrid Structure Hypergraph for Online Deformable Object Tracking. IEEE International Conference on Image Processing (ICIP), Beijing, China, 17-20 September, 2017. (**Oral**)

33. Wenbo Li, **Longyin Wen**, Mooi Choo Chuah, Yi Zhang, Zhen Lei, and Stan Z. Li. Online visual tracking using temporally coherent part cluster. In *IEEE Winter Conference on Applications of Computer Vision (WACV), Waikoloa, HI, USA, January 5-9*, pages 9–16, 2015.

34. **Longyin Wen**, Zhaowei Cai, Dawei Du, Zhen Lei, and Stan Z. Li. Learning discriminative hidden structural parts for visual tracking. In *International Workshop on Feature and Similarity Learning for Computer Vision in Conjunction with Asian Conference on Computer Vision (ACCV Workshop), Singapore, 1-5 November*, 2014. (**Oral**)

35. Zhaowei Cai, **Longyin Wen**, Dong Cao, Zhen Lei, Dong Yi, and Stan Z. Li. Person-specific face tracking with online recognition. In *IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG), Shanghai, China, 22-26 April*, pages 1–6, 2013.

36. **Longyin Wen**, Zhaowei Cai, Menglong Yang, Zhen Lei, Dong Yi, and Stan Z. Li. Online multiple instance joint model for visual tracking. In *IEEE International Conference on Advanced Video and Signal-Based Surveillance (AVSS), Beijing, China, 18-21 September*, pages 319–324, 2012.

37. Zhaowei Cai, Qi Zhang, and **Longyin Wen**. No-reference image quality metric based on visual quality saliency. In *Chinese Conference on Pattern Recognition (CCPR), Beijing, China, 24-26 September*, pages 455–462, 2012. (**Oral**)

38. Siwei Lyu. Ming-Ching Chang, Dawei Du, **Longyin Wen**, *etc*. UA-DETRAC 2017: Report of AVSS2017 & IWT4S Challenge on Advanced Traffic Monitoring. (as technical program committee). The Advanced Video and Signal Based Surveillance (AVSS) Workshops, 2017.

39. The Visual Object Tracking VOT2016 Challenge Results. (as participating term). The European Conference on Computer Vision (ECCV) Workshops, 2016.

40. The Thermal Infrared Visual Object Tracking VOT-TIR2016 Challenge Results. (as participating term). The European Conference on Computer Vision (ECCV) Workshops, 2016.

41. The Visual Object Tracking VOT2015 Challenge Results. (as participating term). The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015.

42. The Thermal Infrared Visual Object Tracking VOT-TIR2015 Challenge Results. (as participating team). The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015.

43. The Visual Object Tracking VOT2014 Challenge Results. (as participating term). International Workshop on Visual Object Tracking Challenge in Conjunction with European Conference on Computer Vision (ECCV Workshop), 2014.

Preprint

44. **Longyin Wen**, Dawei Du, Zhaowei Cai, Zhen Lei, Ming-Ching Chang, Honggang Qi, Jongwoo Lim, Ming-Hsuan Yang, and Siwei Lyu. UA-DETRAC: A New Benchmark and Protocol for Multi-Object Detection and Tracking. arXiv preprint arXiv:1511.04136 (2015).

45. Pengfei Zhu, **Longyin Wen**, Xiao Bian, Haibin Ling, Qinghua Hu. Vision Meets Drones: A Challenge. arXiv preprint arXiv:1804.07437 (2018).

Patents

1. Multi-Part Learning based Video Segmentation Algorithm. Zhen Lei, **Longyin Wen**, Stan Z. Li. Chinese Patent. No.2014108185345, 2015.

2. Person-Specific Face Tracking with Online Recognition. Stan Z. Li, Zhen Lei, **Longyin Wen**, Zhaowei Cai. Chinese Patent. CN103093199A, 2013.

3. Object Tracking based on the Online Spatio-Temporal Structural Context Learning. Stan Z. Li, **Longyin Wen**, Zhen Lei, Dong Yi. Chinese Patent. CN102999766A, 2013.

4. Object Tracking based on the Dynamic Graph Matching. Stan Z. Li, Zhen Lei, **Longyin Wen**, Zhaowei Cai. Chinese Patent. CN102930539A, 2013.

Professional Service

Organizer	The Vision Meets Drones: A Challenge Workshop in Conjunction with European Conference on Computer Vision, Munich, Germany, 8-14 September, 2018.
Organizing Committee	IEEE Smart World NVIDIA AI City Challenge, San Francisco, USA, 5 August, 2017.

Program Committee	IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016, 2017, 2018; European Conference on Computer Vision (ECCV), 2018; Asian Conference on Computer Vision (ACCV), 2016.
Technical Committee	The International Conference on Pattern Recognition (ICPR), 2018.
Journal Reviewer	IEEE Transactions on Pattern Analysis and Machine Intelligence; International Journal of Computer Vision; IEEE Transactions on Image Processing; IEEE Transactions on Cybernetics; IEEE Transactions on Circuits and Systems for Video Technology; ACM Transactions on Applied Perception; Image and Vision Computing; Computer Vision and Image Understanding; EURASIP Journal on Image and Video Processing; IET Computer Vision; Neurocomputing; Patter Recognition Letters.
Conference Reviewer	Neural Information Processing Systems; IEEE Conference on Computer Vision and Pattern Recognition; IEEE International Conference on Computer Vision; European Conference on Computer Vision; British Machine Vision Conference; Asian Conference on Computer Vision; International Conference on Pattern Recognition.

Talks

2017   Department of Computer & Information Sciences, Temple University, PA, USA

2015   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Poster, Boston, MA, USA.

2014   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Poster, Columbus, OH, USA.

2012   European Conference on Computer Vision (ECCV), Poster, Florence, Italy.

2012   IEEE International Conference on Advanced Video and Signal based Surveillance (AVSS), Poster, Beijing, China.

Theses

1. **Longyin Wen**, Graph based Object Tracking, Ph.D. Thesis (in Chinese), Institute of Automation, Chinese Academic of Sciences, 2015

2. **Longyin Wen**. Real-time Face Detection System. B.S. Thesis (in Chinese), School of Automation Engineering, University of Electronic Science and Technology of China, 2010