

# Longyin Wen

Computer Vision Scientist  
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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

Dissertation: *Graph based Object Tracking*

Advisor: Prof. Stan Z. Li

2006 – 2010 **University of Electronic Science and Technology of China, Chengdu, China**

B.S. in Automation, June 2010

Thesis: *Real-time Face Detection*

## Professional Experience

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 <sup>1</sup>

### Journal Articles <sup>2</sup>

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: 3.735)
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: 3.735)
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: 6.077)
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: 4.270)

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<sup>1</sup>According to Google Scholar, my articles are totally cited more than 490 times as of Dec. 16, 2016.

<sup>2</sup>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: 3.735)
6. Dawei Du, Honggang Qi, **Longyin Wen**, Qi Tian, Qingming Huang, Siwei Lyu. Geometric Hypergraph Learning for Visual Tracking. *IEEE Transactions on Cybernetics (TCYB)*, 2016. (impact factor: 4.943).

#### Prestigious Conference Papers

7. 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)**
8. Yiming Ying, **Longyin Wen**, Siwei Lyu. Stochastic online AUC maximization. Advances in Neural Information Processing Systems (NIPS), Barcelona, Spain, 5-10 December, 2016. **(Oral)**
9. 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.
10. 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.
11. **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.
12. **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.
13. 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.
14. 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.
15. **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.
16. 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.
17. 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

18. 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.
19. **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)**

20. 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.
21. **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.
22. 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**)
23. The Visual Object Tracking VOT2016 Challenge Results. (as participating term). The European Conference on Computer Vision (ECCV) Workshops, 2016.
24. The Thermal Infrared Visual Object Tracking VOT-TIR2016 Challenge Results. (as participating term). The European Conference on Computer Vision (ECCV) Workshops, 2016.
25. The Visual Object Tracking VOT2015 Challenge Results. (as participating term). The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015.
26. The Thermal Infrared Visual Object Tracking VOT-TIR2015 Challenge Results. (as participating team). The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015.
27. 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

28. **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).

### 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

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| Journal Reviewer    | 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; Pattern Recognition Letters. |
| Conference Reviewer | IEEE Conference on Computer Vision and Pattern Recognition; IEEE International Conference on Computer Vision; European Conference on Computer Vision; Asian Conference on Computer Vision.   |

### Talks

- 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