

## Wenhan LUO, Ph.D., IEEE Senior Member

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WORKING EXPERIENCE	<b>Sun Yat-sen University</b>	<b>Shenzhen, China</b>
	• Associate Professor	Jul, 2022 – Present
	<b>Tencent</b>	<b>Shenzhen, China</b>
	• Senior Researcher	Mar, 2020 – Jul, 2022
	<b>Amazon</b>	<b>Palo Alto, CA, USA</b>
	• Research Scientist	Jul, 2019 – Jan, 2020
	<b>Tencent</b>	<b>Shenzhen, China</b>
	• Senior Researcher	Aug, 2016 – May, 2019

EDUCATION	<b>Imperial College London</b>	<b>London, UK</b>
	• Ph.D. in Computer Science	Oct, 2012 – Jun, 2016
	<b>Institute of Automation, Chinese Academy of Sciences</b>	<b>Beijing, China</b>
	• M.E. in Control Theory and Control Engineering	Sep, 2009 – Jul, 2012
	<b>Huazhong University of Science and Technology</b>	<b>Wuhan, China</b>
	• B.E. in Automation	Sep, 2005 – Jul, 2009

RESEARCH INTERESTS      Computer Vision, Machine Learning

- PUBLICATIONS      († indicates interns/students working with me, \* indicates equal contribution)
1. Z. Song, Z. Zhang, K. Zhang, **W. Luo**, Z. Fan, W. Ren and J. Lu, Robust Single Image Reflection Removal Against Adversarial Attacks, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2023.
  2. Z. Kong, W. Zhang, F. Liu, **W. Luo**, H. Liu, L. Shen and R. Ramachandra, Taming Self-Supervised Learning for Presentation Attack Detection: De-Folding and De-Mixing, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, to appear.
  3. T. Wang, K. Zhang, T. Shen, **W. Luo**, B. Stenger, T. Lu, Ultra-High-Definition Low-Light Image Enhancement: A Benchmark and Transformer-Based Method, *Proc. of the Association for the Advancement of Artificial Intelligence (AAAI)*, 2023.
  4. H. Fang, P. Xiong, L. Xu, **W. Luo**, Transferring Image-CLIP to Video-Text Retrieval via Temporal Relations, *IEEE Transactions on Multimedia (TMM)*, to appear.
  5. L. Zheng†, Y. Li, K. Zhang, **W. Luo**, T-Net: Deep Stacked Scale-Iteration Network for Image Dehazing, *IEEE Transactions on Multimedia (TMM)*, to appear.
  6. Z. You, K. Yang, **W. Luo**, X. Lu, L. Cui, X. Le, Few-shot Object Counting with Similarity-Aware Feature Enhancement, *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2023.
  7. T. Zhou, **W. Luo**, Z. Shi, J. Chen, Q. Ye, APPTracker: Improving Tracking Multiple Objects in Low-Frame-Rate Videos, *The 30th ACM International Conference on Multimedia (ACM MM)*, 2022.
  8. W. Niu, K. Zhang, D. Li, **W. Luo**, Four-player GroupGAN for Weak Expression Recognition via Latent Expression Magnification, *Knowledge-Based Systems*, 2022.
  9. K. Zhang, D. Li, **W. Luo**, J. Liu, J. Deng, W. Liu, S. Zafeiriou, EDFace-Celeb-1M: Benchmarking Face Hallucination with a Million-scale Dataset, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022.

10. K. Zhang, W. Ren, **W. Luo**, W. Lai, B. Stenger, M. Yang, H. Li, Deep Image Deblurring: A Survey, *International Journal of Computer Vision (IJCV)*, 2022.
11. K. Zhang†, **W. Luo**, Y. Yu, W. Ren, F. Zhao, C. Li, L. Ma, W. Liu, H. Li, Beyond Monocular Deraining: Parallel Stereo Deraining Network Via Semantic Prior, *International Journal of Computer Vision (IJCV)*, 2022.
12. Y. Wang†, Guo Pu, **W. Luo**, Y. Wang, P. Xiong, H. Kang, Z. Lian, Aesthetic Text Logo Synthesis via Content-aware Layout Inferring, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2022.
13. K. Zhang†, D. Li, **W. Luo**, W. Ren, W. Liu, Enhanced Spatio-Temporal Interaction Learning for Video Deraining: A Faster and Better Framework, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022.
14. K. Zhang, D. Li, **W. Luo**, W. Ren, B. Stenger, W. Liu, H. Li, M. Yang, Benchmarking Ultra-High-Definition Image Super-resolution, *Proc. of International Conference on Computer Vision (ICCV)*, 2021.
15. W. Niu, K. Zhang, **W. Luo**, Y. Zhong, H. Li, Deep Robust Image Deblurring via Blur Distilling and Information Comparison in Latent Space, *Neurocomputing*, vol. 466, pp. 69-79, 2021.
16. W. Niu, K. Zhang, **W. Luo**, Y. Zhong, Blind Motion Deblurring Super-Resolution: When Dynamic Spatio-Temporal Learning Meets Static Image. *IEEE Trans. on Image Processing (TIP)*, 2021.
17. K. Zhang, D. Li, **W. Luo**, W. Ren, Dual Attention-in-Attention Model for Joint Rain Streak and Raindrop Removal. *IEEE Trans. on Image Processing (TIP)*, 2021.
18. K. Zhang, R. Li, Y. Yu, **W. Luo**, C. Li, Deep Dense Multi-scale Network for Snow Removal Using Semantic and Geometric Priors. *IEEE Trans. on Image Processing (TIP)*, 2021.
19. R. Xia, Y. Li, **W. Luo**, LAGA-Net: Local-And-Global Attention Network for Skeleton Based Action Recognition, *IEEE Transactions on Multimedia (TMM)*, 2021.
20. F. Zhong†, P. Sun, **W. Luo**, T. Yan, Y. Wang, Towards Distraction-Robust Active Visual Tracking, *International Conference on Machine Learning (ICML)*, 2021.
21. X. Zhang, R. Jiang, T. Wang and **W. Luo**, Single Image Dehazing via Dual-Path Recurrent Network, *IEEE Trans. on Image Processing (TIP)*, 2021.
22. W. Liu†, Z. Piao, Z. Tu, **W. Luo**, L. Ma, and S. Gao, Liquid Warping GAN with Attention: A Unified Framework for Human Image Synthesis, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2021.
23. Y. Li, H. Tang, W. Xie, and W. Luo, Multidimensional Local Binary Pattern for Hyperspectral Image Classification, *IEEE Trans. on Geoscience and Remote Sensing (TGRS)*, 2021.
24. K. Zhang†, **W. Luo**, L. Ma, W. Ren, and H. Li, Disentangled Feature Networks for Facial Portraits Generation, *IEEE Transactions on Multimedia (TMM)*, 2021.
25. **W. Luo**, J. Xing, A. Milan, X. Zhang, W. Liu, and T-K. Kim, Multiple Object Tracking: A Literature Review, *Artificial Intelligence*, 2021. (**ESI Highly Cited Paper**)
26. X. Zhang, T. Wang, **W. Luo**, P. Huang, Multi-level Fusion and Attention-guided CNN for Image Dehazing, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, 2021. (**ESI Highly Cited Paper**)
27. T. Wang, X. Zhang, R. Jiang, L. Zhao, H. Chen, **W. Luo**, Video Deblurring via Spatiotemporal Pyramid Network and Adversarial Gradient Prior, *Computer Vision and Image Understanding (CVIU)*, 2020.
28. Z. Ren†, **W. Luo**, J. Yan, X. Yang, A. Yuille, H. Zha, STFlow: Self-Taught Optical Flow Estimation Using Pseudo Labels, *IEEE Trans. on Image Processing (TIP)*, 2020.
29. T. Liu†, **W. Luo**, L. Ma, J. Huang, T. Stathaki, T. Dai, Coupled Network for Robust Pedestrian Detection with Gated Multi-Layer Feature Extraction and Deformable Occlusion Handling, *IEEE Trans. on Image Processing (TIP)*, 2020.

30. K. Zhang†, **W. Luo**, B. Stenger, W. Ren, L. Ma, H. Li, Every Moment Matters: Detail-Aware Networks to Bring a Blurry Image Alive, *The 28th ACM International Conference on Multimedia (ACM MM)*, 2020.
31. K. Zhang†, **W. Luo**, W. Ren, J. Wang, F. Zhao, L. Ma, H. Li, Beyond Monocular Deraining: Stereo Image Deraining via Semantic Understanding, *European Conference on Computer Vision (ECCV)*, UK, 2020.
32. Z. Zhou†, **W. Luo**, Q. Wang, J. Xing, W. Hu, Distractor-Aware Discrimination Learning for Online Multiple Object Tracking, *Pattern Recognition*, 2020.
33. Y. Li, H. Tang, L. Fan, **W. Luo**, TSSLBP: Tensor-based Spatial-Spectral Local Binary Pattern, *Journal of Applied Remote Sensing*, 2020.
34. K. Zhang†, **W. Luo**, Y. Zhong, L. Ma, B. Stenger, W. Liu, H. Li, Deblurring by Realistic Blurring, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2020. (**Oral Presentation**)
35. W. Xiong, Y. He, Y. Zhang, **W. Luo**, L. Ma, J. Luo, Fine-grained Image-to-Image Transformation towards Visual Recognition, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2020.
36. F. Zhong†, P. Sun, **W. Luo**, T. Yan, Y. Wang, AD-VAT+: An Asymmetric Dueling mechanism for learning and understanding Visual Active Tracking, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2019.
37. Z. Liu†, **W. Luo**, B. Wu, X. Yang, W. Liu, K-T. Cheng, Bi-Real Net: Binarizing Deep Network Towards Real-Network Performance, *International Journal of Computer Vision (IJCV)*, 2019.
38. W. Liu†, Z. Piao, J. Min, **W. Luo**, L. Ma, S. Gao, Liquid Warping GAN: A Unified Framework for Human Motion Imitation, Appearance Transfer and Novel View Synthesis, *Proc. of International Conference on Computer Vision (ICCV)*, Korea, 2019.
39. Z. Chen†, L. Ma, **W. Luo**, K.-Y. K. Wong, Weakly-Supervised Spatio-Temporally Grounding Natural Sentence in Video, *The 57th Annual Meeting of the Association for Computational Linguistics (ACL)*, Italy, 2019. (**Oral Presentation**)
40. X. Yang\*, **W. Luo\***, L. Bao, Y. Gao, D. Gong, S. Zheng, Z. Li, W. Liu, Face Anti-Spoofing: Model Matters, So Does Data, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2019.
41. K. Zhang†, **W. Luo**, L. Ma, W. Liu, H. Li, Learning Joint Gait Representation via Quintuplet Loss Minimization, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2019. (**Oral Presentation**)
42. J. Wan†, **W. Luo**, B. Wu, A. Chan, W. Liu, Residual Regression with Semantic Prior for Crowd Counting, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2019.
43. K. Tang†, H. Zhang, B. Wu, **W. Luo**, W. Liu, Learning to Compose Dynamic Tree Structures for Visual Contexts, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, USA, 2019. (**Oral Presentation, Best Paper Nominee**)
44. N. Li, Y. Zhang, L. Zhu, **W. Luo**, S. Kwong, Reinforcement Learning Based Coding Unit Early Termination Algorithm for High Efficiency Video Coding, *Journal of Visual Communication and Image Representation*, 2019.
45. **W. Luo\***, P. Sun\*, F. Zhong\*, W. Liu, T. Zhang and Y. Wang, End-to-end Active Object Tracking and Its Real-world Deployment via Reinforcement Learning, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2019.
46. F. Zhong†, P. Sun, **W. Luo**, T. Yan, Y. Wang, AD-VAT: An Asymmetric Dueling mechanism for learning Visual Active Tracking, *International Conference on Learning Representations (ICLR)*, 2019.
47. K. Zhang†, **W. Luo**, L. Ma, H. Li, Cousin Network Guided Sketch Recognition via Latent Attribute Warehouse, *Proc. of the Association for the Advancement of Artificial Intelligence (AAAI)*, 2019. (**Spotlight Presentation**)

48. **W. Luo**, B. Stenger, X. Zhao, T-K. Kim, Trajectories as Topics: Multi-Object Tracking by Topic Discovery, *IEEE Trans. on Image Processing (TIP)*, 2019.
49. K. Zhang†, **W. Luo**, Y. Zhong, L. Ma, W. Liu, H. Li, Adversarial Spatio-Temporal Learning for Video Deblurring, *IEEE Trans. on Image Processing (TIP)*, 2019.
50. Z. Liu†, B. Wu, **W. Luo**, X. Yang, W. Liu, K-T. Cheng, Bi-Real Net: Enhancing the Performance of 1-bit CNNs with Improved Representational Capability and Advanced Training Algorithm, *European Conference on Computer Vision (ECCV)*, Germany, 2018.
51. **W. Luo\***, P. Sun\*, F. Zhong, W. Liu, T. Zhang and Y. Wang, End-to-end Active Object Tracking via Reinforcement Learning, *International Conference on Machine Learning (ICML)*, Sweden, 2018.
52. W. Xiong†, **W. Luo**, L. Ma, W. Liu and J. Luo, Learning to Generate Time-Lapse Videos Using Multi-Stage Dynamic Generative Adversarial Networks. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
53. H. Huang†, H. Wang, **W. Luo**, L. Ma, W. Jiang, X. Zhu, Z. Li, W. Liu, Real-Time Neural Style Transfer for Videos. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017.
54. N. Li, Y. Zhang, **W. Luo**, N. Guo, Instant Coherent Group Motion Filtering by Group Motion Representations, *Neurocomputing*, 2017
55. **W. Luo**, B. Stenger, X. Zhao, T-K. Kim. Automatic Topic Discovery for Multi-object Tracking. *Proc. of the Association for the Advancement of Artificial Intelligence (AAAI)*, 2015. (**Oral Presentation**)
56. **W. Luo**, T-K. Kim, B. Stenger, X. Zhao, R. Cipolla. Bi-label Propagation for Generic Multiple Object Tracking. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2014.
57. X. Zhao, T-K. Kim, **W. Luo**. Unified Face Analysis by Iterative Multi-Output Random Forests. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2014.
58. **W. Luo**, T-K. Kim. Generic Object Crowd Tracking by Multi-Task Learning. *British Machine Vision Conference (BMVC)*, 2013.
59. W. Hu, X. Zhou, W. Li, **W. Luo**, X. Zhang, S. Maybank. Active Contour-Based Visual Tracking by Integrating Colors, Shapes and Motions. *IEEE Trans. on Image Processing (TIP)*, 2013.
60. W. Hu, X. Li, **W. Luo**, X. Zhang, S. Maybank, Z. Zhang. Single and Multiple Object Tracking Using Log-Euclidean Riemannian Subspace and Block-Division Appearance Model. *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2012.
61. **W. Luo**, X. Li, W. Li, W. Hu. Robust Visual Tracking via Transfer Learning. *IEEE International Conference on Image Processing (ICIP)*, 2011.
62. **W. Luo**, X. Zhang, Y. Liu, X. Li, W. Hu, W. Li. Efficient Block-division Model for Robust Multiple Object Tracking. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2011.
63. X. Zhang, **W. Luo**, L. Zhao, W. Li, W. Hu. Semantic Shape Similarity Based Contour Tracking Evaluation. *Optical Engineering*, vol. 50, no. 10, pp. 107003-107003, 2011.
64. W. Li, X. Zhang, **W. Luo**, W. Hu, H. Ling, O. Wu. Robust Object Tracking with Boosted Discriminative Model via Graph Embedding. *International Workshop on Visual Surveillance (VS)*, pp. 1666-1672, 2011.
65. W. Li, X. Zhang, N. Xie, W. Hu, **W. Luo**, H. Ling. Probabilistic Index Histogram for Robust Object Tracking. *International Workshop on Visual Surveillance (VS)*, pp. 184-194, 2011.

PREPRINT

(† indicates intern working with me, \* indicates equal contribution)

1. T. Wang, K. Zhang, X. Chen, **W. Luo**, J. Deng, T. Lu, X. Cao, W. Liu, H. Li, S.

- Zafeiriou, A Survey of Deep Face Restoration: Denoise, Super-Resolution, Deblur, Artifact Removal, arXiv:2211.02831, 2022.
2. T. Wang, G. Tao, T. Shen, W. Lu, K. Zhang, **W. Luo**, T. Lu, Hierarchical Contrastive Learning for Single Image Dehazing, 2022.
  3. Y. Yu, P. Zhang, K. Zhang, **W. Luo**, C. Li, Y. Yuan, G. Wang, Multi-Prior Learning via Neural Architecture Search for Blind Face Restoration, arXiv:2206.13962, 2022.
  4. P. Zhang, K. Zhang, **W. Luo**, C. Li, G. Wang, Blind Face Restoration: Benchmark Datasets and a Baseline Model, arXiv:2206.03697, 2022.
  5. K. Zhang, **W. Luo**, W. Ren, B. Stenger, W. Liu, H. Li, M. Yang, Benchmarking Deep Deblurring Algorithms: A Large-Scale Multi-Cause Dataset and A New Baseline Model, arXiv:2112.00234, 2021.
  6. Z. Chen†, L. Ma, **W. Luo**, P. Tang, K.-Y. K. Wong, Look Closer to Ground Better: Weakly-Supervised Temporal Grounding of Sentence in Video, arXiv: 2001.09308, 2020.

PROFESSIONAL  
SERVICE

#### **Journal Guest Editor**

- Computer Vision and Image Understanding (CVIU)

#### **Senior Program Committee**

- International Joint Conference on Artificial Intelligence (IJCAI) 2021
- Proceeding of the Association for the Advancement of Artificial Intelligence (AAAI) 2022
- International Joint Conference on Artificial Intelligence (IJCAI) 2023

#### **Program Committee**

- The workshop of Vision Meets Drones 2019: A Challenge in conjunction with ICCV2019.
- The 2nd Workshop and Challenge on Target Re-identification and Multi-Target Multi-Camera Tracking in conjunction with CVPR2019.
- The 4th BMTT MOT Challenge Workshop in conjunction with CVPR2019
- The 33rd AAAI Conference on Artificial Intelligence (AAAI 2019)
- International Conference on Internet Multimedia Computing and Service (ICIMCS) 2018
- The workshop of Correspondence Problem in Computer Vision and Pattern Recognition in conjunction with ICPR2018
- The workshop of Vision Meets Drone: A Challenge in conjunction with ECCV2018
- The First Joint BMPP-PETS Workshop on Tracking and Surveillance in conjunction with CVPR2017
- The workshop Benchmarking Multi-Target Tracking: MOTChallenge in conjunction with ECCV2016

#### **Journal Reviewer**

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- International Journal of Computer Vision
- IEEE Transactions on Image Processing
- IEEE Transactions on Neural Networks and Learning System
- IEEE Transactions on Multimedia
- IEEE Transactions on Circuits and Systems for Video Technology
- Neurocomputing
- Pattern Recognition
- Pattern Recognition Letters

#### **Conference Reviewer**

- International Conference on Machine Learning (ICML)
- Annual Conference on Neural Information Processing Systems (NIPS)
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- Annual Conference of the Association for Computational Linguistics (ACL)
- European Conference on Computer Vision (ECCV)

- International Conference on Computer Vision (ICCV)
- AAAI Conference on Artificial Intelligence (AAAI)
- International Joint Conference on Artificial Intelligence (IJCAI)
- Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)
- British Machine Vision Conference (BMVC)
- ACM International Conference on Multimedia (ACM MM)
- Winter Conference on Applications of Computer Vision (WACV)
- Asian Conference on Computer Vision (ACCV)

#### TALKS

- Zhejiang University, hosted by Dr. Qi Ye, Jun, 2022.
- Shenzhen University, hosted by Prof. Yanshan Li, Feb, 2022.
- Beijing Institute of Technology, hosted by Prof. Changsheng Li, Jan, 2022.
- Southern University of Science and Technology, hosted by Prof. Xiaoying Tang, Sep, 2020.
- The Shenzhen Institutes of Advanced Technology, Chinese Academy of Science (CAS), hosted by Prof. Yun Zhang, Sep, 2018.
- The Institute of Automation, Chinese Academy of Science, hosted by Prof. Weiming Hu, Aug, 2018.
- Graduate School of Shenzhen, Tsinghua University, hosted by Prof. Yujiu Yang, June, 2018.

#### PATENTS

- **W. Luo**, L. BAO, Y. Gao, W. Liu, Method and apparatus for generating negative sample of face recognition, and computer device, US 11302118 B2
- **W. Luo**, Y. Wang, W. Liu, Living body detection method and apparatus, electronic device, storage medium, and related system to which living body detection method is applied, US 2021/0073516 A1
- **W. Luo**, L. Ma, W. Liu, Neural network model training method and device, and time-lapse photography video generating method and device, US 2020/0293833 A1
- **W. Luo**, Target Tracking Method And Apparatus, Electronic Device, And Storage Medium, US 11145069 B2
- K. Zhang, **W. Luo**, L. Ma, W. Liu, Video Deblurring Method And Apparatus, Storage Medium, And Electronic Apparatus, US 2020/0372618 A1
- K. Zhang, **W. Luo**, L. Ma, W. Liu, Media processing method, related apparatus, and storage medium, US 11335127 B2
- K. Zhang, **W. Luo**, L. Ma, W. Liu, Image recognition method and apparatus, terminal, and storage medium, US2020/0302180 A1
- K. Zhang, **W. Luo**, H. Li, Image processing method and apparatus, computer device, and storage medium, US 2021/0256663 A1
- K. Zhang, **W. Luo**, L. Ma and W. Liu, Microexpression-based image recognition method and apparatus, and related device. US20210174072A1
- Z. Chen, L. Ma, **W. Luo**, W. Liu, Video sequence selection method, computer device, and storage medium, US 2021/0224601 A1
- Z. Chen, L. Ma, **W. Luo**, W. Liu, Video clip positioning method and apparatus, computer device, and storage medium, US 2021/0349940 A1
- H. Huang, H. Wang, **W. Luo**, L. Ma, W. Jiang, X. Zhu, Z. Li, W. Liu, Method And Apparatus For Training Neural Network Model Used For Image Processing, And Storage Medium, US 2021/0182616 A1
- **W. Luo**, Target Tracking Method, Apparatus and Electron Equipment. CN107392937A
- **W. Luo**, Y. Gao, Z. Yang, Y. Hua, Y. Zeng, F. Wu, X. Huang. Image Processing Method and Device. X. Zhu, Y. Zheng, H. Wang, K. Huang. CN107025457A
- K. Zhang, **W. Luo** and W. Liu. Image denoise method and device and storage medium. CN202010857685.7

- K. Zhang, **W. Luo** and H. Li. Image processing method and device, computer equipment and storage medium. CN201910171831.8
- K. Zhang, **W. Luo**, L. Ma and W. Liu. Image recognition method and device based on micro expressions and related equipment. CN201811392529.7
- K. Zhang, **W. Luo**, L. Ma and W. Liu. Image recognition method, model training method and server. CN20181169065.3
- K. Zhang, **W. Luo**, L. Ma and W. Liu. Video deblurring method and device. CN201810438831.5
- K. Zhang, **W. Luo**, L. Ma and W. Liu. Video processing method and related device, and image processing method and related device. CN201910848859.0
- K. Zhang, **W. Luo**, L. Ma and W. Liu. Image recognition method and device and related equipment. CN201910847971.2
- X. Zhang, **W. Luo**, W. Hu, Image Tracking Method Based on Sequential Particle Swarm Optimization. CN102194234A

#### AWARDS AND HONORS

- ACM China Rising Star (Guangzhou Chapter), 2022.
- CVPR Best Paper Nominee, 2019.

#### COMPUTER SKILLS

Familiar with Matlab, experiences with C/C++, knowledge of data structure and algorithm, technical skills in Python, HTML and some software engineering

#### THESIS

W. Luo, Generic Multiple Object Tracking, Dept. of Electrical and Electronic Engineering, Imperial College London, 2016.

#### LANGUAGE

Mandarin (mother tongue)  
English (strong at reading and writing, good at listening, fluent in speaking)  
German (elementary knowledge)