

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

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### CONTACT INFORMATION

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### WORKING EXPERIENCE

<b>The Hong Kong University of Science and Technology</b>	<b>Hong Kong</b>
• Associate Professor	Jun, 2024 – present
<b>Sun Yat-sen University</b>	<b>Shenzhen, China</b>
• Associate Professor	Jul, 2022 – Mar, 2024
<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

Creative AI, Generative Model, Computer Vision, Machine Learning

### PUBLICATIONS

- († indicates correspondence, \* indicates equal contribution)
1. M. Li, X. Long, Y. Liang, W. Li, Y. Liu, P. Li, **W. Luo**, W. Wang, Y. Guo, Multi-View Large Reconstruction Model via Geometry-Aware Positional Encoding and Attention, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, to appear.
  2. X. Chen, Y. Li, H. Shi, B. Hu, **W. Luo**, Y. Wang, M. Zhang, VideoVista-CulturalLingo: 360° Horizons-Bridging Cultures, Languages, and Domains in Video Comprehension, *The 63rd Annual Meeting of the Association for Computational Linguistics (ACL)*, 2025.
  3. Z. Kong, L. Li, Y. Zhang†, F. Gao, S. Yang, T. Wang, K. Zhang, Z. Kang, X. Wei, G. Chen, **W. Luo**†, DAM-VSR: Disentanglement of Appearance and Motion for Video Super-Resolution, *ACM SIGGRAPH*, 2025.
  4. P. Li, S. Ma, J. Chen, Y. Liu, C. Zhang, W. Xue, **W. Luo**, A. Sheffer, W. Wang, Y. Guo, *ACM SIGGRAPH*, 2025.
  5. Z. Jin, Y. Qiu, K. Zhang, H. Li, **W. Luo**†, MB-TaylorFormer V2: Improved Multi-branch Linear Transformer Expanded by Taylor Formula for Image Restoration, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, to appear.
  6. T. Wang, K. Zhang, Y. Zhang, **W. Luo**†, B. Stenger, T. Lu, T. Kim, W. Liu, H. Li, LLDiffusion: Learning Degradation Representations in Diffusion Models for Low-Light Image Enhancement, *Pattern Recognition (PR)*, to appear.
  7. Z. Ye, H. Huang†, X. Wang, P. Wan, D. Zhang, **W. Luo**†, StyleMaster: Stylize Your Video with Artistic Generation and Translation, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2025.
  8. P. Li, W. Zheng, Y. Liu, T. Yu, Y. Li, X. Qi, X. Chi, S. Xia, Y. Cao, W. Xue, **W. Luo**, Y. Guo, PSHuman: Photorealistic Single-image 3D Human Reconstruction

- using Cross-Scale Multiview Diffusion and Explicit Remeshing, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2025.
9. X. Mao, Z. Jiang, F. Wang, J. Zhang, H. Chen, M. Chi, Y. Wang, **W. Luo**, OSV: One Step is Enough for High-Quality Image to Video Generation, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2025.
  10. J. Xue, H. Wang, Q. Tian, Y. Ma, A. Wang, Z. Zhao, S. Min, W. Zhao, K. Zhang, H. Shum, W. Liu, M. Liu, **W. Luo**<sup>†</sup>, Towards Multiple Character Image Animation Through Enhancing Implicit Decoupling, *International Conference on Learning Representations (ICLR)*, 2025.
  11. X. Qi, Y. Wang, H. Zhang, J. Pan, W. Xue, S. Zhang, **W. Luo**, Q. Liu, Y. Guo, Co<sup>3</sup>Gesture: Towards Coherent Concurrent Co-speech 3D Gesture Generation with *Interactive Diffusion*, *International Conference on Learning Representations (ICLR)*, 2025.
  12. Y. Li, S. Jiang, B. Hu, L. Wang, W. Zhong, **W. Luo**, L. Ma, M. Zhang, Uni-MoE: Scaling Unified Multimodal LLMs with Mixture of Experts, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, to appear.
  13. P. Li, Y. Liu, X. Long, F. Zhang, C. Lin, M. Li, X. Qi, S. Zhang, **W. Luo**, P. Tan, W. Wang, Q. Liu, Y. Guo, Era3D: High-Resolution Multiview Diffusion using Efficient Row-wise Attention, *Neural Information Processing Systems (NeurIPS)*, 2024.
  14. L. Li, P. Dong, Z. Tang, X. Liu, Q. Wang, **W. Luo**, W. Xue, Q. Liu, X. Chu, Y. Guo, Discovering Sparsity Allocation for Layer-wise Pruning of Large Language Models, *Neural Information Processing Systems (NeurIPS)*, 2024.
  15. R. Li, J. Yu, C. Li, **W. Luo**, Y. Yuan, G. Wang, DREAM: Domain-agnostic Reverse Engineering Attributes of Black-box Model, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 36, pp. 8009-8022, 2024.
  16. T. Zhou, Q. Ye, **W. Luo**, H. Ran, Z. Shi, J. Chen, APPTracker+: Displacement Uncertainty for Occlusion Handling in Low-Frame-Rate Multiple Object Tracking, *International Journal of Computer Vision (IJCV)*, vol. 133, pp. 2044-2069, 2025.
  17. Z. Kong, W. Zhang, T. Wang, K. Zhang, Y. Li, X. Tang, **W. Luo**<sup>†</sup>, Dual Teacher Knowledge Distillation with Domain Alignment for Face Anti-spoofing, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, pp. 13177-13189, 2024.
  18. J. Tan, H. Park, Y. Zhang, T. Wang, K. Zhang, X. Kong, P. Dai, Z. Liu, **W. Luo**<sup>†</sup>, Blind Face Video Restoration with Temporal Consistent Generative Prior and Degradation-Aware Prompt, *The 32nd ACM International Conference on Multimedia (ACM MM)*, 2024.
  19. Z. Kong, Y. Zhang, T. Yang, T. Wang, K. Zhang, B. Wu, G. Chen, W. Liu, **W. Luo**<sup>†</sup>, OMG: Occlusion-friendly Personalized Multi-concept Generation In Diffusion Models, *European Conference on Computer Vision (ECCV)*, 2024.
  20. B. Tang, K. Zhang<sup>†</sup>, **W. Luo**<sup>†</sup>, W. Liu, H. Li, Prompting Future Driven Diffusion Model for Hand Motion Prediction, *European Conference on Computer Vision (ECCV)*, 2024.
  21. L. Li, H. Sun, S. Li, P. Dong, **W. Luo**, W. Xue, Q. Liu, Y. Guo, Auto-GAS: Automated Proxy Discovery for Training-free Generative Architecture Search, *European Conference on Computer Vision (ECCV)*, 2024.
  22. L. Li, Z. Wei, P. Dong, **W. Luo**, W. Xue, Q. Liu, Y. Guo, AttnZero: Efficient Attention Discovery for Vision Transformers, *European Conference on Computer Vision (ECCV)*, 2024.
  23. L. Li, Y. Bao, P. Dong, C. Yang, A. Li, **W. Luo**, Q. Liu, W. Xue, Y. Guo, DetKDS: Knowledge Distillation Search for Object Detectors, *International Conference on Machine Learning (ICML)*, 2024.
  24. J. Huang, Z. Wang, T. Liu, **W. Luo**, Z. Chen, W. Zhao, M. Wang, DeMPAA: Deployable Multi-Mini-Patch Adversarial Attack for Remote Sensing Image Classi-

- fication, *IEEE Trans. on Geoscience and Remote Sensing*, vol. 62, pp. 1-13, 2024.
25. X. Chen, J. Tan, T. Wang, K. Zhang, **W. Luo**<sup>†</sup>, X. Cao, Towards Real-World Blind Face Restoration with Generative Diffusion Prior, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, pp. 8494-8508, 2024.
  26. T. Wang, K. Zhang, Z. Shao, **W. Luo**<sup>†</sup>, B. Stenger, T. Lu, T. Kim, W. Liu, H. Li, GridFormer: Residual Dense Transformer with Grid Structure for Image Restoration in Adverse Weather Conditions, *International Journal of Computer Vision (IJCV)*, vol. 132, pp. 4541-4563, 2024.
  27. X. Qi, J. Pan, P. Li, R. Yuan, X. Chi, M. Li, **W. Luo**, W. Xue, S. Zhang, Q. Liu, Y. Guo, Weakly-Supervised Emotion Transition Learning for Diverse 3D Co-speech Gesture Generation, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2024.
  28. Y. Shao, S. He, Q. Ye, Y. Feng, **W. Luo**, J. Chen, Context-Aware Integration of Language and Visual References for Natural Language Tracking, *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2024.
  29. Y. Li, B. Hu, **W. Luo**, L. Ma, Y. Ding, M. Zhang, A Multimodal In-Context Tuning Approach for E-Commerce Product Description Generation, *International Conference on Computational Linguistics (COLING)*, 2024.
  30. Y. Gao, W. Zhang, **W. Luo**, L. Ma, J. Yu, G. Xia, J. Ma, Aux-NAS: Exploiting Auxiliary Labels with Negligibly Extra Inference Cost, *International Conference on Learning Representations (ICLR)*, 2024.
  31. W. Wang, C. Du, T. Wang, K. Zhang, **W. Luo**<sup>†</sup>, L. Ma, W. Liu, X. Cao, Punctuation-level Attack: Single-shot and Single Punctuation Can Fool Text Models, *Neural Information Processing Systems (NeurIPS)*, 2023.
  32. 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, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, to appear.
  33. J. Tan, X. Chen, T. Wang, K. Zhang, **W. Luo**<sup>†</sup>, X. Cao, Blind Face Restoration for Under-Display Camera via Dictionary Guided Transformer, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, pp. 4914-4927, 2024.
  34. K. Zhang, T. Wang, **W. Luo**<sup>†</sup>, W. Ren, B. Stenger, W. Liu, H. Li, M. Yang, MC-Blur: A Comprehensive Benchmark for Image Deblurring, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, pp. 3755-3767, 2024.
  35. T. Wang, G. Tao, W. Lu, K. Zhang, **W. Luo**, X. Zhang, T. Lu, Restoring Vision in Hazy Weather with Hierarchical Contrastive Learning, *Pattern Recognition*, vol. 145, pp. 109956, 2024.
  36. T. Gao, Y. Wen, K. Zhang, J. Zhang, T. Chen, L. Liu, **W. Luo**, Frequency-oriented Efficient Transformer for All-in-one Weather-degraded Image Restoration, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, pp. 1886-1899, 2024.
  37. T. Zhou, Q. Ye<sup>†</sup>, **W. Luo**<sup>†</sup>, K. Zhang, Z. Shi, J. Chen, FnF Attack Adversarial Attack against Multiple Object Trackers by Inducing False Negatives and False Positives, *Proc. of International Conference on Computer Vision (ICCV)*, 2023.
  38. P. Cheng, L. Lin, J. Lyu, Y. Huang, **W. Luo**, X. Tang, PRIOR: Prototype Representation Joint Learning from Medical Images and Reports, *Proc. of International Conference on Computer Vision (ICCV)*, 2023.
  39. Y. Qiu, K. Zhang, C. Wang, **W. Luo**, H. Li, Z. Jin, MB-TaylorFormer: Mutil-branch Efficient Transformer Expanded by Taylor Formula for Image Dehazing, *Proc. of International Conference on Computer Vision (ICCV)*, 2023.
  40. S. Wang, C. Nguyen, J. Liu, K. Zhang, **W. Luo**, Y. Zhang, S. Muthu, F. Maken, H. Li, Homography Guided Temporal Fusion for Road Line and Marking Segmentation, *Proc. of International Conference on Computer Vision (ICCV)*, 2023.
  41. Y. Shao, Q. Ye, **W. Luo**, K. Zhang, J. Chen, InterTracker: Discovering and Tracking General Objects Interacting with Hands in the Wild, *IEEE/RSJ International*

- Conference on Intelligent Robots and Systems (IROS)*, 2023.
42. Z. Song, Z. Zhang, K. Zhang, **W. Luo**<sup>†</sup>, 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.
  43. 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)*, vol. 35, pp. 10639-10650, 2024.
  44. T. Wang, K. Zhang, T. Shen, **W. Luo**<sup>†</sup>, B. Stenger, T. Lu<sup>†</sup>, 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. (**Oral Presentation**)
  45. H. Fang, P. Xiong, L. Xu, **W. Luo**<sup>†</sup>, Transferring Image-CLIP to Video-Text Retrieval via Temporal Relations, *IEEE Transactions on Multimedia (TMM)*, vol. 25, pp. 7772-7785, 2023.
  46. L. Zheng, Y. Li, K. Zhang, **W. Luo**, T-Net: Deep Stacked Scale-Iteration Network for Image Dehazing, *IEEE Transactions on Multimedia (TMM)*, vol. 25, pp. 6794-6807, 2023.
  47. 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.
  48. 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.
  49. 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)*, vol. 45, pp. 3968-3978, 2023.
  50. 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)*, vol. 130, pp. 2103-2130, 2022.
  51. K. Zhang, **W. Luo**<sup>†</sup>, 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)*, vol. 130, pp. 1754-1769, 2022.
  52. 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.
  53. 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)*, vol. 45, pp. 1287-1293, 2023.
  54. 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.
  55. W. Niu, K. Zhang, **W. Luo**<sup>†</sup>, Y. Zhong, Blind Motion Deblurring Super-Resolution: When Dynamic Spatio-Temporal Learning Meets Static Image. *IEEE Trans. on Image Processing (TIP)*, vol. 30, pp. 7101-7111, 2021.
  56. 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)*, vol. 30, pp. 7608-7619, 2021.
  57. 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)*, vol. 30, pp. 7419-7431, 2021.
  58. R. Xia, Y. Li, **W. Luo**, LAGA-Net: Local-And-Global Attention Network for Skeleton Based Action Recognition, *IEEE Transactions on Multimedia (TMM)*, vol. 24, pp. 2648-2661, 2022.

59. F. Zhong, P. Sun, **W. Luo**, T. Yan, Y. Wang, Towards Distraction-Robust Active Visual Tracking, *International Conference on Machine Learning (ICML)*, 2021.
60. X. Zhang, R. Jiang, T. Wang and **W. Luo**, Single Image Dehazing via Dual-Path Recurrent Network, *IEEE Trans. on Image Processing (TIP)*, vol. 30, pp. 5211-5222, 2021.
61. 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)*, vol. 44, pp. 5114-5132, 2022.
62. 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)*, vol. 60, pp. 1-13, 2022.
63. K. Zhang, **W. Luo**<sup>†</sup>, L. Ma, W. Ren, and H. Li, Disentangled Feature Networks for Facial Portraits Generation, *IEEE Transactions on Multimedia (TMM)*, vol. 24, pp. 1378-1388, 2022.
64. **W. Luo**, J. Xing, A. Milan, X. Zhang, W. Liu, and T-K. Kim, Multiple Object Tracking: A Literature Review, *Artificial Intelligence*, vol. 293, pp. 103448, 2021.
65. 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)*, vol. 31, pp. 4162-4173, 2021.
66. 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)*, vol. 203, pp. 103135, 2021.
67. 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)*, vol. 29, pp. 9113-9124, 2020.
68. 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)*, vol. 30, pp. 754-766, 2021.
69. 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.
70. 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.
71. Z. Zhou, **W. Luo**, Q. Wang, J. Xing, W. Hu, Distractor-Aware Discrimination Learning for Online Multiple Object Tracking, *Pattern Recognition*, vol. 107, pp. 107512, 2020.
72. 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**)
73. 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.
74. 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)*, vol. 43, pp. 1467-1482, 2021.
75. 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)*, vol. 128, pp. 202-219, 2020.
76. 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.

77. 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**)
78. 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.
79. 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**)
80. 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.
81. 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 Finalist**)
82. **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)*, vol. 42, pp. 1317-1332, 2020.
83. 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.
84. 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**)
85. **W. Luo**, B. Stenger, X. Zhao, T-K. Kim, Trajectories as Topics: Multi-Object Tracking by Topic Discovery, *IEEE Trans. on Image Processing (TIP)*, vol. 28, no. 1, pp. 240-252, 2019.
86. 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)*, vol. 28, no. 1, pp. 291-301, 2019.
87. 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.
88. **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.
89. 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.
90. 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.
91. **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**)
92. **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.
93. 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.

94. **W. Luo**, T-K. Kim. Generic Object Crowd Tracking by Multi-Task Learning. *British Machine Vision Conference (BMVC)*, 2013.
95. 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)*, vol. 22, no. 5, pp. 1778-1792, 2013.
96. 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)*, vol. 34, no. 12, pp. 2420-2440, 2012.
97. **W. Luo**, X. Li, W. Li, W. Hu. Robust Visual Tracking via Transfer Learning. *IEEE International Conference on Image Processing (ICIP)*, 2011.
98. **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.

#### PROFESSIONAL SERVICE

**Associate Editor:** IEEE TIP (2025 - current), Neurocomputing (2024 - current), IET Computer Vision (2024 - current)  
**Guest Editor:** CVIU (Sep 2020 - Sep 2021)  
**Area Chair:** NeurIPS 2025, ACM MM 2025, ICML 2025, IJCAI 2025, IJCNN 2025, BMVC 2024  
**Conference Organization/Service:** SIGGRAPH Asia 2025 (Conflict-of-Interest Coordinator), CVM 2025 (Workshop Chair)  
**Senior Program Committee:** IJCAI (2024, 2023, 2021), AAAI (2025, 2024, 2022)  
**Journal Reviewer:** TPAMI, TIP, CSUR, TNNLS, TMM, TCSVT, PR  
**Conference Reviewer:** ICML, NeurIPS, CVPR, ACL, ECCV, ICCV, BMVC, AAAI, IJCAI, ACM MM, WACV

#### TALKS

- Shenzhen University, hosted by Prof. Yanshan Li, Mar, 2025.
- Shenzhen University, hosted by Prof. Xu Wang, Dec, 2024.
- Zhejiang University, hosted by Prof. Qi Ye, Oct, 2024.
- Southern University of Science and Technology, hosted by Prof. Feng Zheng, Jul, 2024.
- Wuhan University, hosted by Prof. Guisong Xia, Apr, 2024
- 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

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#### AWARDS AND HONORS

- CCF-Tencent Rhino-Bird Faculty Fund Excellence Award, 2024
- Champion award in the Bracketing Image Restoration and Enhancement Challenge - Track 1 & 2, NTIRE 2024, in conjunction of CVPR 2024
- The second place in the Few-shot RAW Image Denoising competition of MIPI 2024, in conjunction of CVPR 2024
- Top 2% Scientists Worldwide, 2023 & 2024.
- ACM China Rising Star (Guangzhou Chapter), 2022.
- CVPR Best Paper Finalist, 2019.

#### 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)