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WORKING **The Hong Kong University of Science and Technology** **Hong Kong**
EXPERIENCE • Associate Professor Jun, 2024 – present
 Sun Yat-sen University **Shenzhen, China**
 • Associate Professor Jul, 2022 – Mar, 2024
 Tencent **Shenzhen, China**
 • Senior Researcher Mar, 2020 – Jul, 2022
 Amazon **Palo Alto, CA, USA**
 • Research Scientist Jul, 2019 – Jan, 2020
 Tencent **Shenzhen, China**
 • Senior Researcher Aug, 2016 – May, 2019

EDUCATION **Imperial College London** **London, UK**
 • Ph.D. in Computer Science Oct, 2012 – Jun, 2016

 Institute of Automation, Chinese Academy of Sciences **Beijing, China**
 • M.E. in Control Theory and Control Engineering Sep, 2009 – Jul, 2012

 Huazhong University of Science and Technology **Wuhan, China**
 • B.E. in Automation Sep, 2005 – Jul, 2009

RESEARCH Creative AI, Generative Model, Computer Vision, Machine Learning
INTERESTS

- PUBLICATIONS († indicates correspondence, * indicates equal contribution)
1. X. Liu, Y. He, L. Guo, X. Li, B. Jin, Y. Li, C. Chan, W. Xue, **W. Luo**, Q. Liu, Y. Guo, HiPrompt: Tuning-free Higher-Resolution Generation with Hierarchical MLLM Prompts, *International Journal of Computer Vision (IJCV)*, to appear.
 2. Z. Kong, F. Gao, Y. Zhang†, Z. Kang, X. Wei, X. Cai, G. Chen, **W. Luo**†, Let Them Talk: Audio-Driven Multi-Person Conversational Video Generation, *Neural Information Processing Systems (NeurIPS)*, 2025.
 3. Y. Cai, Z. Jiang, Y. Liu, C. Jiang, W. Xue, Y. Guo, **W. Luo**, Foundation Cures Personalization: Improving Personalized Models' Prompt Consistency via Hidden Foundation Knowledge, *Neural Information Processing Systems (NeurIPS)*, 2025.
 4. Z. He, M. Yang, S. Yang, Y. Tang, T. Wang, K. Zhang, G. Chen, Y. Liu, J. Jiang, C. Guo, **W. Luo**†, MaterialMVP: Illumination-Invariant Material Generation via Multi-view PBR Diffusion, *Proc. of International Conference on Computer Vision (ICCV)*, 2025. (**Highlight**)
 5. T. Wang, P. Xia, B. Li, P. Jiang, Z. Kong, K. Zhang, T. Lu, **W. Luo**†, MOERL: When Mixture-of-Experts Meet Reinforcement Learning for Adverse Weather Image Restoration, *Proc. of International Conference on Computer Vision (ICCV)*, 2025.
 6. R. Guan, T. Liu, W. Tu, C. Tang, **W. Luo**, X. Liu, Sampling Enhanced Contrastive Multi-View Remote Sensing Data Clustering with Long-Short Range Information Mining, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 37, pp. 5598-5612, 2025.
 7. 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)*, vol. 31, pp. 8564-8577, 2025.

8. 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.
9. 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.
10. P. Li, S. Ma, J. Chen, Y. Liu, C. Zhang, W. Xue, **W. Luo**, A. Sheffer, W. Wang, Y. Guo, CMD: Controllable Multiview Diffusion for 3D Editing and Progressive Generation, *ACM SIGGRAPH*, 2025.
11. 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)*, vol. 47, pp. 5990–6005, 2025.
12. 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)*, vol. 166, pp. 111628, 2025.
13. 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.
14. 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.
15. 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.
16. 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**†, Towards Multiple Character Image Animation Through Enhancing Implicit Decoupling, *International Conference on Learning Representations (ICLR)*, 2025.
17. X. Qi, Y. Wang, H. Zhang, J. Pan, W. Xue, S. Zhang, **W. Luo**, Q. Liu, Y. Guo, Co³Gesture: Towards Coherent Concurrent Co-speech 3D Gesture Generation with *Interactive Diffusion*, *International Conference on Learning Representations (ICLR)*, 2025.
18. 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)*, vol. 47, pp. 3424–3439, 2025.
19. 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.
20. 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.
21. 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.
22. 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.
23. Z. Kong, W. Zhang, T. Wang, K. Zhang, Y. Li, X. Tang, **W. Luo**†, 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.
24. J. Tan, H. Park, Y. Zhang, T. Wang, K. Zhang, X. Kong, P. Dai, Z. Liu, **W. Luo**[†], Blind Face Video Restoration with Temporal Consistent Generative Prior and Degradation-Aware Prompt, *The 32nd ACM International Conference on Multimedia (ACM MM)*, 2024.
 25. Z. Kong, Y. Zhang, T. Yang, T. Wang, K. Zhang, B. Wu, G. Chen, W. Liu, **W. Luo**[†], OMG: Occlusion-friendly Personalized Multi-concept Generation In Diffusion Models, *European Conference on Computer Vision (ECCV)*, 2024.
 26. B. Tang, K. Zhang[†], **W. Luo**[†], W. Liu, H. Li, Prompting Future Driven Diffusion Model for Hand Motion Prediction, *European Conference on Computer Vision (ECCV)*, 2024.
 27. 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.
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 31. X. Chen, J. Tan, T. Wang, K. Zhang, **W. Luo**[†], 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.
 32. T. Wang, K. Zhang, Z. Shao, **W. Luo**[†], 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.
 33. 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.
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 35. 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.
 36. 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.
 37. W. Wang, C. Du, T. Wang, K. Zhang, **W. Luo**[†], L. Ma, W. Liu, X. Cao, Punctuation-level Attack: Single-shot and Single Punctuation Can Fool Text Models, *Neural Information Processing Systems (NeurIPS)*, 2023.
 38. 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.
 39. J. Tan, X. Chen, T. Wang, K. Zhang, **W. Luo**[†], 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.
 40. K. Zhang, T. Wang, **W. Luo**[†], 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.
41. 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.
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 43. T. Zhou, Q. Ye†, **W. Luo**†, 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.
 44. 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.
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 46. 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.
 47. 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.
 48. 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.
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 50. 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. (**Oral Presentation**)
 51. H. Fang, P. Xiong, L. Xu, **W. Luo**†, Transferring Image-CLIP to Video-Text Retrieval via Temporal Relations, *IEEE Transactions on Multimedia (TMM)*, vol. 25, pp. 7772-7785, 2023.
 52. 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.
 53. 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.
 54. 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.
 55. 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.
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 57. 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)*, vol. 130, pp. 1754-1769, 2022.
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PROFESSIONAL
SERVICE

Senior Area Editor: IEEE Signal Processing Letters (2025 - current)
Associate Editor: IEEE Transactions on Image Processing (2025 - current), Neuro-computing (2024 - current), IET Computer Vision (2024 - current)
Area Chair: ICLR 2026, NeurIPS 2025, ACM MM 2025, ICML (2026, 2025), IJCAI 2025, IJCNN 2025, BMVC (2025, 2024)
Conference Organization/Service: SIGGRAPH Asia 2025 (Conflict-of-Interest Coordinator), CVM 2025 (Workshop Chair), AsiaGraphics (Vice Secretary, 2025 -)
Senior Program Committee: IJCAI (2024, 2023, 2021), AAAI (2026, 2025, 2024, 2022)
Workshop Organizer: Consistency in Video Generative Models: from Clip to Wild, in conjunction with AAAI 2026
Journal Reviewer: TPAMI, TIP, CSUR, TNNLS, TMM, TCSVT, PR
Conference Reviewer: ICML, NeurIPS, CVPR, ACL, ECCV, ICCV, BMVC, AAAI, IJCAI, ACM MM, WACV

TALKS

- Invited talk in The Asiagraphics Workshop on Intelligent Graphics in SIGGRAPH Asia 2025.
- Invited talk in the Institute of Automation, Chinese Academy of Science, hosted by Prof. Jin Gao, Aug, 2025.
- Invited talk in China Spatial Intelligence Conference 2025.
- 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

- **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

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

	<ul style="list-style-type: none"> • 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 & 2025. • ACM China Rising Star (Guangzhou Chapter), 2022. • CVPR Best Paper Finalist, 2019.
DEPARTMENTAL SERVICES	<ul style="list-style-type: none"> • PG Programs Coordinator, Div. of Arts and Machine Creativity, 2025 - present • Chair of PG Committee, Div. of Arts and Machine Creativity, 2025 - present • Search and Appointment Committee (SAC), Div. of Arts and Machine Creativity, 2024 - present • 3-in-1 Planning Committee (Research Matters), Div. of Arts and Machine Creativity, 2025 - present • Deputy Critical Incident Coordinator, Div. of Arts and Machine Creativity, 2025 - present • Search and Appointment Committee (SAC), Div. of Emerging Interdisciplinary Areas, 2024 - present
UNIVERSITY AND SCHOOL SERVICES	<ul style="list-style-type: none"> • Search Committee, for the Head of the Div. Arts and Machine Creativity, 2024 • Interdisciplinary PG Studies Committee, Academy of Interdisciplinary Studies, 2025 - present
THESIS	W. Luo, Generic Multiple Object Tracking, Dept. of Electrical and Electronic Engineering, Imperial College London, 2016.
LANGUAGE	<p>Mandarin (mother tongue)</p> <p>English (strong at reading and writing, good at listening, fluent in speaking)</p> <p>German (elementary knowledge)</p>