XIAOWEI HU

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B1c-411, Guangzhou International Campus, South China University of Technology, Guangzhou, China.

ACADEMIC QUALIFICATIONS

Ph.D. in Computer Science and Engineering 08/2016 - 07/2020
The Chinese University of Hong Kong (CUHK)
Advisors: Prof. Pheng-Ann Heng & Prof. Chi-Wing Fu
⋆ Awardee of the Hong Kong Ph.D. Fellowship Scheme (HKPFS)

B.Eng. in Computer Science and Technology 09/2012 - 07/2016
South China University of Technology (SCUT)
GPA: 3.95/4.0 (rank 1^{st} in All-English-Teaching Union Class)
⋆ Selected by SCUT for a special class for the most promising students

EMPLOYMENT

Professor, School of Future Technology, South China University of Technology, Guangzhou 06/2025 - present

Research Scientist, Shanghai Artificial Intelligence Laboratory, Shanghai 03/2022 - 06/2025

Postdoctoral Fellow, Department of Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong 08/2020 - 02/2022

RESEARCH RECORDS

Dr. Hu's research interests span **computer vision**, **low-level vision**, **vision perception**, **medical AI**, and **deep learning**. Specifically, his research focuses on: (a) Revitalizing visual content under adverse weather and complex illumination conditions. (b) Developing intelligent perception and reasoning systems capable of continuous operation and adaptability to diverse environments. (c) Creating next-generation multimodal models that handle multiple tasks efficiently, advancing understanding and shaping a visual world closely aligned with physical reality. Dr. Hu boasts an extensive publication record, with **more than 50 academic papers** published in prestigious journals and conferences, including IEEE TPAMI, CVPR, and ICCV. His work has garnered significant attention, as evidenced by his **Google Scholar citation over 6000** and an **h-index of 34**. He has been recognized as one of **the World's Top 2% Scientists** by Stanford University for 2022-2024 and was selected for the **Outstanding Young Talents Program of China**.

HONORS & AWARDS

World's Top 2% Scientists by Stanford University 2022-2024

Outstanding Young Talents Program of China [国家高层次人才计划青年项目] 2023

Achieved Excellence in the Hong Kong Young Scientist Award (**two winners** in Engineering Science in **HK**) 2021

CVPR Doctoral Consortium Award (31 awardees **globally**) 2020

Hong Kong Ph.D. Fellowship (the **highest** scholarship for students studying in Hong Kong) 2016

Top 10 Outstanding Students at SCUT (**rank 1^{st}**, the **highest** award for students at SCUT) 2016

Google Excellence Scholarship (one of 58 winners in **China**) 2015

Tencent Outstanding Scholarship (the **only** undergraduate winner at SCUT) 2015

National Scholarship (the **highest** national wide scholarship for undergraduate students in China) 2013

PUBLICATIONS

Summary: CVPR/ICCV/ECCV (16), TPAMI (3), IEEE Transactions (20)

†: joint first authors; *: corresponding author;

2025

[1] **X. Hu**†, M. Shi†, W. Wang†, S. Wu†, L. Xing, W. Wang, X. Zhu, L. Lu, J. Zhou, X. Wang, Y. Qiao, and J. Dai*, "Demystify Transformers & Convolutions in Modern Image Deep Networks," *IEEE Transactions on Pattern Analysis and Machine Intelligence (**IEEE TPAMI**)*, vol. 47, no. 4, pp. 2416–2428, 2025.

[2] Z. Xing†, H. Chen†, B. Xie, J. Xu, Z. Guo, X. Xu, J. Hao, C.-W. Fu, **X. Hu***, and P.-A. Heng, "EchoTraffic: Enhancing Traffic Anomaly Understanding with Audio-Visual Insights," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 19098–19108, 2025.

[3] J. Xu, W. Li, H. Sun, F. Li, Z. Wang, L. Peng, J. Ren, H. Yang, **X. Hu**, R. Pei, and P.-A. Heng, "Fast Image Super-Resolution via Consistency Rectified Flow," *IEEE International Conference on Computer Vision (**ICCV**)*, accepted, 2025.

[4] D. Zhou†, J. Huang†, J. Bai, J. Wang, H. Chen, G. Chen, **X. Hu***, and P.-A. Heng, "MagicTailor: Component-Controllable Personalization in Text-to-Image Diffusion Models," *International Joint Conference on Artificial Intelligence (**IJCAI**)*, accepted, 2025.

[5] K. Zhao, **X. Hu**, and Q. Li, "Device-Cloud Collaborative Learning Framework for Efficient Unknown Object Detection," *ACM Multimedia (**ACM MM**)*, accepted, 2025.

[6] J. Xu, **X. Hu***, L. Zhu, and P.-A. Heng, "Unifying Physically-Informed Weather Priors in A Single Model for Image Restoration Across Multiple Adverse Weather Conditions," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, accepted, 2025.

[7] H. Lin, J. Zou, S. Deng, K. P. Wong, A. I. Aviles-Rivero, Y. Fan, A. P.-W. Lee, **X. Hu**, and J. Qin, "Volumetric Medical Image Segmentation via Fully 3D Adaptation of Segment Anything Model," *Biocybernetics and Biomedical Engineering*, vol. 45, pp. 1–10, 2025.

[8] R. Cui, L. Liu, Y. Song, G. Ren, **X. Hu***, and J. Qin, "Multi-Scale Contextual Learning for Medical Image Segmentation via Dual Distillation," *Medical Physics*, vol. 52, no. 2, pp. 787–800, 2025.

[9] Y. Wang†, Q. Yan†, Z. Xing†, L. Liu, J. He, C.-W. Fu, **X. Hu***, and P.-A. Heng, "Silence is Not Consensus: Disrupting Agreement Bias in Multi-Agent LLMs via Catfish Agent for Clinical Decision Making," *ArXiv Tech Report*, 2025.

[10] Z. Xing, **X. Hu***, C.-W. Fu, W. Wang, J. Dai, and P.-A. Heng, "EchoInk-R1: Exploring Audio-Visual Reasoning in Multimodal LLMs via Reinforcement Learning," *ArXiv Tech Report*, 2025.

[11] Y. Su†, T. Li†, J. Liu, C. Ma, J. Ning, C. Tang, S. Ju, J. Ye, P. Chen, M. Hu, S. Tang, L. Liu, B. Fu, W. Shao, **X. Hu**, X. Liao, Y. Ji, and J. He, "GMAI-VL-R1: Harnessing Reinforcement Learning for Multimodal Medical Reasoning," *ArXiv Tech Report*, 2025.

[12] Q. Yan, Y. Yuan, **X. Hu**, Y. Wang, J. Xu, J. Li, C.-W. Fu, and P.-A. Heng, "MedHallTune: An Instruction-Tuning Benchmark for Mitigating Medical Hallucination in Vision-Language Models," *ArXiv Tech Report*, 2025.

2024

[13] **X. Hu**†, Z. Xing†, T. Wang, C.-W. Fu, and P.-A. Heng, "Unveiling Deep Shadows: A Survey and Benchmark on Image and Video Shadow Detection, Removal, and Generation in the Deep Learning Era," *ArXiv Tech Report*, 2024.

[14] T. Li†, Y. Su†, W. Li, B. Fu, Z. Chen, Z. Huang, G. Wang, C. Ma, Y. Chen, M. Hu, Y. Li, P. Chen, **X. Hu**, Z. Deng, Y. Ji, J. Ye, Y. Qiao, and J. He, "GMAI-VL & GMAI-VL-5.5M: A Large Vision-Language Model and A Comprehensive Multimodal Dataset Towards General Medical AI," *ArXiv Tech Report*, 2024.

[15] J. Xu, M. Wu, **X. Hu***, C.-W. Fu, Q. Dou, and P.-A. Heng, "Towards Real-World Adverse Weather Image Restoration: Enhancing Clearness and Semantics with Vision-Language Models," *European Conference on Computer Vision (**ECCV**)*, pp. 147–164, 2024.

[16] Z. Xing†, T. Wang†, **X. Hu***, H. Wu, C.-W. Fu, and P.-A. Heng, "Video Instance Shadow Detection Under the Sun and Sky," *IEEE Transactions on Image Processing (**IEEE TIP**)*, vol. 33, pp. 5715–5726, 2024.

[17] G. Yu, J. Zou, **X. Hu**, A. I. Aviles-Rivero, J. Qin, and S. Wang, "Revitalizing Multivariate Time Series Forecasting: Learnable Decomposition with Inter-Series Dependencies and Intra-Series Variations Modeling," *International Conference on Machine Learning (**ICML**)*, vol. 235, pp. 57818–57841, 2024.

[18] L. Liu, Y. Cheng, Z. Deng, S. Wang, D. Chen, **X. Hu**, P. Liò, C.-B. Schönlieb, and A. I. Aviles-Rivero, "TrafficMOT: A Challenging Dataset for Multi-Object Tracking in Complex Traffic Scenarios," *ACM Multimedia (**ACM MM**)*, pp. 1265–1273, 2024.

[19] S. Deng, Y. Feng, H. Lin, Y. Fan, A. P.-W. Lee, **X. Hu**, and J. Qin, "Semi-Supervised TEE Segmentation via Interacting with SAM Equipped with Noise-Resilient Prompting," *AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 11757–11765, 2024.

[20] B. Chen, Z. Chen, **X. Hu**, J. Xu, H. Xie, J. Qin, and M. Wei, "Dynamic Message Propagation Network for RGB-D and Video Salient Object Detection," *ACM Transactions on Multimedia Computing Communications and Applications (**ACM TOMM**)*, vol. 20, no. 1, pp. 1–21, 2024.

2023

[21] T. Wang, **X. Hu***, P.-A. Heng, and C.-W. Fu, "Instance Shadow Detection with A Single-Stage Detector," *IEEE Transactions on Pattern Analysis and Machine Intelligence (**IEEE TPAMI**)*, vol. 45, no. 3, pp. 3259-3273, 2023.

[22] H. Yang†, T. Wang†, **X. Hu***, and C.-W. Fu, "SILT: Shadow-Aware Iterative Label Tuning for Learning to Detect Shadows from Noisy Labels," *IEEE International Conference on Computer Vision (**ICCV**)*, pp. 12687-12698, 2023.

[23] Y. Zhu†, T. Wang†, X. Fu*, X. Yang, X. Guo, J. Dai, Y. Qiao, and **X. Hu***, "Learning Weather-General and Weather-Specific Features for Image Restoration Under Multiple Adverse Weather Conditions," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 21747-21758, 2023.

[24] J. Xu, **X. Hu***, L. Zhu*, Q. Dou, J. Dai, Y. Qiao, and P.-A. Heng, "Video Dehazing via a Multi-Range Temporal Alignment Network with Physical Prior," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 18053-18062, 2023.

[25] M. Shi, Z. Huang, X. Ma, **X. Hu**, and Z. Cao, "Matching Is Not Enough: A Two-Stage Framework for Category-Agnostic Pose Estimation," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 7308-7317, 2023. (**Highlight**)

[26] W. Wang, J. Dai, Z. Chen, Z. Huang, Z. Li, X. Zhu, **X. Hu**, T. Lu, L. Lu, H. Li, X. Wang, and Y. Qiao, "InternImage: Exploring Large-Scale Vision Foundation Models with Deformable Convolutions," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 14408-14419, 2023. (**Highlight**)

[27] Z. Jin, **X. Hu**, L. Zhu, L. Song, L. Yuan, and L. Yu, "IDRNet: Intervention-Driven Relation Network for Semantic Segmentation," *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2023.

[28] J. Ren†, **X. Hu**†, L. Zhu, X. Xu, Y. Xu, W. Wang, Z. Deng, and P.-A. Heng, "Deep Texture-Aware Features for Camouflaged Object Detection," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, vol. 33, no. 3, pp. 1157-1167, 2023.

[29] S. Xu, H. Zhang, X. Xu*, **X. Hu***, Y. Xu, L. Dai, K.-S. Choi, and P.-A. Heng, "Representative Feature Alignment for Adaptive Object Detection," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, vol. 33, no. 2, pp. 689-700, 2023.

[30] Z. Wang, S. Gui, X. Ding, **X. Hu***, X. Xu*, and X. Li, "Spectrum and Style Transformation Framework for Omni-Domain COVID-19 Diagnosis," *IEEE Transactions on Emerging Topics in Computational Intelligence (**IEEE TETCI**)*, vol. 7, no. 5, pp. 1527-1538, 2023.

2022

[31] T. Wang, **X. Hu***, Z. Liu, and C.-W. Fu, "Sparse2Dense: Learning to Densify 3D Features for 3D Object Detection," *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022.

[32] X. Ding, J. Yang, **X. Hu**, and X. Li, "Learning Shadow Correspondence for Video Shadow Detection," *European Conference on Computer Vision (**ECCV**)*, pp. 705-722, 2022.

[33] Y. Zhu, X. Wang, X. Fu*, and **X. Hu***, "Enhanced Coarse-to-Fine Network for Image Restoration," *1st Mobile Intelligent Photography & Imaging Workshop @ ECCV 2022*, pp. 130-146, 2022.

[34] H. Yao, **X. Hu**, and X. Li, "Enhancing Pseudo Label Quality for Semi-Supervised Domain-Generalized Medical Image Segmentation," *AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 3099-3107, 2022.

2021

[35] **X. Hu**, T. Wang, C.-W. Fu, Y. Jiang, Q. Wang, and P.-A. Heng, "Revisiting Shadow Detection: A New Benchmark Dataset for Complex World," *IEEE Transactions on Image Processing (**IEEE TIP**)*, vol. 30, pp. 1925-1934, 2021.

[36] **X. Hu**, L. Zhu, T. Wang, C.-W. Fu, and P.-A. Heng, "Single-Image Real-Time Rain Removal Based on Depth-Guided Non-Local Features," *IEEE Transactions on Image Processing (**IEEE TIP**)*, vol. 30, pp. 1759-1770, 2021.

[37] T. Wang†, **X. Hu**†*, C.-W. Fu, and P.-A. Heng, "Single-Stage Instance Shadow Detection with Bidirectional Relation Learning," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 1-11, 2021. (**Oral**)

[38] **X. Hu**, C.-W. Fu, L. Zhu, T. Wang, and P.-A. Heng, "SAC-Net: Spatial Attenuation Context for Salient Object Detection," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, vol. 31, no. 3, pp. 1079-1090, 2021.

[39] X. Li, **X. Hu**, X. Qi, L. Yu, W. Zhao, P.-A. Heng, and L. Xing, "Rotation-oriented Collaborative Self-supervised Learning for Retinal Disease Diagnosis," *IEEE Transactions on Medical Imaging (**IEEE TMI**)*, vol. 40, no. 9, pp. 2284-2294, 2021. (**TMI Popular Paper**)

[40] X. Xu, T. Yu, **X. Hu***, and W. W. Y. Ng*, "SALMNet: A Structure-Aware Lane Marking Detection Network," *IEEE Transactions on Intelligent Transportation Systems (**IEEE TITS**)*, vol. 22, no. 8, pp. 4986-4997, 2021.

[41] L. Zhu, Z. Deng, **X. Hu***, H. Xie, X. Xu*, J. Qin, and P.-A. Heng, "Learning Gated Non-Local Residual for Single-Image Rain Streak Removal," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, vol. 31, no. 6, pp. 2147-2159, 2021.

[42] X. Yan, H. Zhang, X. Xu, **X. Hu**, and P.-A. Heng, "Learning Semantic Context from Normal Samples for Unsupervised Anomaly Detection," *AAAI Conference on Artificial Intelligence (**AAAI**)*, vol. 35, no. 4, pp.

3110-3118, 2021.

[43] C. Xue, L. Zhu, H. Fu, **X. Hu**, X. Li, H. Zhang, and P.-A. Heng, "Global Guidance Network for Breast Lesion Segmentation in Ultrasound Images," *Medical Image Analysis (**MedIA**)*, vol. 70, article no. 101989, 2021.

2020

[44] **X. Hu**, L. Zhu, C.-W. Fu, J. Qin, and P.-A. Heng, "Direction-Aware Spatial Context Features for Shadow Detection and Removal," *IEEE Transactions on Pattern Analysis and Machine Intelligence (**IEEE TPAMI**)*, vol. 42, no. 11, pp. 2795-2808, 2020.

[45] T. Wang†, **X. Hu**†, Q. Wang, P.-A. Heng, and C.-W. Fu, "Instance Shadow Detection," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 1880-1889, 2020.

[46] L. Zhu†, **X. Hu**†, C.-W. Fu, J. Qin, and P.-A. Heng, "Saliency-Aware Texture Smoothing," *IEEE Transactions on Visualization and Computer Graphics (**IEEE TVCG**)*, vol. 26, no. 7, pp. 2471-2484, 2020.

[47] L. Liu†, **X. Hu**†, L. Zhu, C.-W. Fu, J. Qin, and P.-A. Heng, "Ψ-Net: Stacking Densely Convolutional LSTMs for Sub-cortical Brain Structure Segmentation," *IEEE Transactions on Medical Imaging (**IEEE TMI**)*, vol. 39, no. 9, pp. 2806-2817, 2020.

[48] X. Li*, **X. Hu***, L. Yu, L. Zhu, C.-W. Fu, and P.-A. Heng, "CANet: Cross-disease Attention Network for Joint Diabetic Retinopathy and Diabetic Macular Edema Grading," *IEEE Transactions on Medical Imaging (**IEEE TMI**)*, vol. 39, no. 5, pp. 1483-1493, 2020. (**ESI Highly Cited Paper**)

[49] X. Tang, **X. Hu**, C.-W. Fu, and D. Cohen-Or, "GrabAR: Occlusion-aware Grabbing Virtual Objects in AR," *ACM Symposium on User Interface Software and Technology (**UIST**)*, pp. 697-708, 2020.

[50] L. Zhu, J. Chen, **X. Hu**, C.-W. Fu, X. Xu, J. Qin, and P.-A. Heng, "Aggregating Attentional Dilated Features for Salient Object Detection," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, vol. 30, no. 10, pp. 3358-3371, 2020.

2019

[51] **X. Hu**, Y. Jiang, C.-W. Fu, and P.-A. Heng, "Mask-ShadowGAN: Learning to Remove Shadows from Unpaired Data," *IEEE International Conference on Computer Vision (**ICCV**)*, pp. 2472-2481, 2019.

[52] Z. Deng, L. Zhu, **X. Hu**, C.-W. Fu, X. Xu, Q. Zhang, J. Qin, and P.-A. Heng, "Deep Multi-Model Fusion for Single-Image Dehazing," *IEEE International Conference on Computer Vision (**ICCV**)*, pp. 2453-2462, 2019.

[53] **X. Hu**, C.-W. Fu, L. Zhu, and P.-A. Heng, "Depth-Attentional Features for Single-Image Rain Removal," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 8022-8031, 2019.

[54] **X. Hu**, X. Xu, Y. Xiao, H. Chen, S. He, J. Qin, and P.-A. Heng, "SINet: A Scale-Insensitive Convolutional Neural Network for Fast Vehicle Detection," *IEEE Transactions on Intelligent Transportation Systems (**IEEE TITS**)*, vol. 20, no. 3, pp. 1010-1019, 2019. (**ESI Highly Cited Paper**)

[55] L. Liu, **X. Hu**, L. Zhu, and P.-A. Heng, "Probabilistic Multilayer Regularization Network for Unsupervised 3D Brain Image Registration," *International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**)*, pp. 346-354, 2019.

[56] Y. Wang, H. Dou, **X. Hu**, L. Zhu, X. Yang, M. Xu, J. Qin, P.-A. Heng, T. Wang, and D. Ni, "Deep Attentive Features for Prostate Segmentation in 3D Transrectal Ultrasound," *IEEE Transactions on Medical Imaging (**IEEE TMI**)*, vol. 38, no. 12, pp. 2768-2778, 2019.

[57] Y. Tian, C.-W. Fu, S. Zhao, R. Li, X. Tang, **X. Hu**, and P.-A. Heng, "Enhancing Augmented VR Interaction via Egocentric Scene Analysis," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**Ubicomp**)*, vol. 3, no. 3, article no. 105, 2019.

[58] H. Al Hajj, M. Lamard, P.-H. Conze, S. Roychowdhury, **X. Hu**, et al., "CATARACTS: Challenge on Automatic Tool Annotation for cataRACT Surgery," *Medical Image Analysis (**MedIA**)*, vol. 52, pp. 24-41, 2019.

2018 & before

[59] **X. Hu**, L. Zhu, C.-W. Fu, J. Qin, and P.-A. Heng, "Direction-Aware Spatial Context Features for Shadow Detection," *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, pp. 7454-7462, 2018. (**Oral**)

[60] **X. Hu**, L. Zhu, J. Qin, C.-W. Fu, and P.-A. Heng, "Recurrently Aggregating Deep Features for Salient Object Detection," *AAAI Conference on Artificial Intelligence (**AAAI**)*, pp. 6943-6950, 2018. (**Spotlight**)

[61] Z. Deng†, **X. Hu**†, L. Zhu, X. Xu, J. Qin, G. Han, and P.-A. Heng, "R3Net: Recurrent Residual Refinement Network for Saliency Detection," *International Joint Conference on Artificial Intelligence (**IJCAI**)*, pp. 684-690, 2018. (**Oral**)

[62] L. Zhu, Z. Deng, **X. Hu**, C.-W. Fu, X. Xu, J. Qin, and P.-A. Heng, "Bidirectional Feature Pyramid Network with Recurrent Attention Residual Modules for Shadow Detection," *European Conference on Computer Vision (**ECCV**)*, pp. 122-137, 2018.

[63] Y. Wang, Z. Deng, **X. Hu**, L. Zhu, X. Yang, X. Xu, P.-A. Heng, and D. Ni, "Deep Attentional Features for Prostate Segmentation in Ultrasound," *International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**)*, pp. 523-530, 2018.

[64] **X. Hu**, L. Yu, H. Chen, J. Qin, and P.-A. Heng, "AGNet: Attention-Guided Network for Surgical Tool Presence Detection," *Deep Learning in Medical Image Analysis and Multimodal Learning for Clinical Decision Support*, pp. 186-194, 2017.

TALKS & PRESENTATIONS

The Future of AI in Vision and Healthcare: Multimodal Large Language Models for Image Perception, Restoration, and Medical Applications

- ◇ Talk at Southeast University, December 2024.
- ◇ Talk at The University of Hong Kong, November 2024. [information] [instagram] [facebook]

Revitalizing Visual Content under Adverse Weather and Complex Illumination

- ◇ Talk at The University of Hong Kong, January 2024.

Demystifying the Giants: An Introduction to Large Language and Vision Models with Healthcare Applications

- ◇ Tutorial at The Hong Kong Polytechnic University, November 2023.

Learning for Visions Under the Adverse Weather and Complex Illumination

- ◇ Talk at ShanghaiTech University, November 2023. [information]
- ◇ Talk at Zhejiang Lab, June 2023.
- ◇ Talk at University of Cambridge, May 2023. [information] [twitter]
- ◇ Talk at South China University of Technology, March 2023.

Basic Vision Models (Object Detection)

- ◇ Tutorial at The Hong Kong University of Science and Technology, February & September 2022.

Shadow Detection and Removal with Deep Learning

- ◇ Talk at Shanghai AI Laboratory, October 2021.
- ◇ Talk at TechBeat, August 2021.

- ◇ Talk at Nanjing University, May 2021.
- ◇ Talk at Nanjing University of Science and Technology, May 2021.
- ◇ Talk at Nanjing University of Aeronautics and Astronautics, April 2021.
- ◇ Talk at Peng Cheng Laboratory Overseas Young Scientist Forum, July 2020.
- ◇ Talk at Shantou University, December 2019.

Instance Segmentation and Instance Shadow Detection

- ◇ Tutorial at Nanjing University of Aeronautics and Astronautics, October 2021.

Mask-ShadowGAN: Learning to Remove Shadows from Unpaired Data

- ◇ Talk at Hong Kong Computer Vision Workshop, October 2019. (**Best Oral Presentation Award**)

Direction-Aware Spatial Context Features for Shadow Detection

- ◇ Talk at AI Research Club, July 2018.

PROFESSIONAL SERVICES

Area Chair

- ◇ MICCAI 2025

Conference Reviews / PC Members

- ◇ IEEE CVPR (2019-2025), IEEE ICCV (2019 [**Outstanding Reviewer**], 2021, 2023, 2025), ECCV (2020, 2022, 2024), NeurIPS (2023), ICLR (2023-2025), SIGGRAPH Asia (2022), AAAI (2020-2025), ACM MM (2021, 2022, 2024), PG (2020, 2021), MICCAI (2019-2021)

Journal Reviews

- ◇ IEEE TPAMI, IJCV, IEEE TIP, IEEE TMM, IEEE TITS, IEEE TMI, IEEE TNNLS, IEEE TCSVT, IEEE TVT, Neurocomputing, JBHI, Computer Vision and Image Understanding, Artificial Intelligence Review, The Visual Computer, Computers & Graphics, IEEE CG&A

STUDENTS

Previous Mentorship

- ◇ Jiaqi Xu (Jan. 2022 – Mar. 2023, Research Intern at Shanghai AI Lab, PhD Student at CUHK)
- ◇ Tianyu Wang (Jan. 2022 – Mar. 2023, Research Intern at Shanghai AI Lab, PhD Student at CUHK) (now Research Scientist at Adobe Research, USA)
- ◇ Chuanjun Zheng (Jul. 2022 – Jun. 2023, Research Intern at Shanghai AI Lab) (now PhD student at Northeastern University, USA)
- ◇ Yurui Zhu (Jul. 2022 – Apr. 2023, Research Intern at Shanghai AI Lab, PhD Student at USTC)
- ◇ Min Shi (Jul. 2022 – Apr. 2023, Research Intern at Shanghai AI Lab, MPhil Student at HUST)
- ◇ Sitong Wu (Apr. 2022 – Mar. 2023, Research Intern at Shanghai AI Lab, PhD Student at CUHK)
- ◇ Weiyun Wang (Jul. 2022 – Feb. 2023, Research Intern at Shanghai AI Lab, PhD Student at Fudan)
- ◇ Zhenchao Jin (May 2022 – Dec. 2022, Research Intern at Shanghai AI Lab, PhD Student at HKU)
- ◇ Xuanyu Yang (Jul. 2022 – Dec. 2022, Research Intern at Shanghai AI Lab, Undergraduate Student at SJTU)
- ◇ Yitong Jiang (Dec. 2018 – Mar. 2019, Undergraduate at CUHK) (now PhD student at CUHK)
- ◇ Lihao Liu (Aug. 2017 – Feb. 2020, MPhil at CUHK) (now Applied Scientist at Amazon, USA)