



# Jinbao Wang

ASSISTANT PROFESSOR · SCHOOL OF ARTIFICIAL INTELLIGENCE · SHENZHEN UNIVERSITY (SZU)

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## About Me

I was born in Hebei on 12 Nov. 1989 and received a PhD degree from the University of Chinese Academy of Sciences (UCAS) in 2019. I am an **Assistant Professor** at **School of Artificial Intelligence & National Engineering Laboratory for Big Data System Computing Technology**, Shenzhen University, Shenzhen 518060, China. My main fields involve computer vision and machine learning, with a long-term focus on image anomaly detection, graph representation learning, image diversification generation, and fast retrieval. We are committed to applying visual technology to the human-machine interaction environment of real industrial scenes and virtual reality.

Led the National Natural Science Foundation of China (NSFC) Youth Project—"Efficient 3D Anomaly Detection Algorithm for Industrial Vision" (Grant No. 62206122); Participated in the NSFC Major International (Regional) Joint Project—"Research on Key Technologies of High-Fidelity Digital Human Modeling and Driving" (Grant No. 62320106007); The project of "Research on industrial image anomaly detection based on visual language models" is awarded the Award of Tencent "Rhinceros Birds" - Scientific Research Foundation for Young Teachers of Shenzhen University; Published papers **50+** in important international journals and conferences, such as IEEE TIP, IEEE TCSVT, Neurocomputing, ICCV, ACM MM, NeurIPS, and ICLR, with **2000+** citations, **1** ESI highly-cited paper, and **1** Best Student Paper Award; Served as a reviewer for international journals and conferences, such as IEEE TIP, IEEE TCSVT, ACM MM, NeurIPS, AAAI, IJCAI, ICML; Currently, as a member of IEEE, ACM and other top artificial intelligence conference procedures committees.

## Project

- 2024.12-2027.11, National Key Research and Development Program of China: "Research on Key Technologies for Detection and Evaluation of Living Environment and Rehabilitation Aids for Elderly People with Disabilities and Dementia", Project Three—"Intelligent Detection and Integration Technology for Living Environment of Elderly People with Disabilities and Dementia", Project Number 2024YFF0618403, Sub-Project Leader.
- 2024.6-2026.5, Tencent "Rhinceros Birds" - Scientific Research Foundation for Young Teachers of Shenzhen University project—"Research on industrial image anomaly detection based on visual language models". **50K RMB**. Principal Investigator.
- 2024.1-2028.12, National Natural Science Foundation of China (NSFC), Major International (Regional) Joint Project—"Research on Key Technologies of High-Fidelity Digital Human Modeling and Driving", Grant No. 62320106007. **600K/2.16M RMB**. Chinese Side Collaborator, . **(Only 74 items that year)**
- 2023.1-2025.12, National Natural Science Foundation of China (NSFC) Youth Project—"Efficient 3D Anomaly Detection Algorithm for Industrial Vision", Grant No. 62206122. **300K RMB**. Principal Investigator.
- 2024.6-2026.5, Internal Fund of National Engineering Laboratory for Big Data System Computing Technology—"Research on Visual Anomaly Detection Based on Multimodal Alignment", Grant No. SZU-BDSC-IF2024-08. **20K RMB**. Principal Investigator.
- 2024.1-2026.11, Young Teacher Research Initiation Fund Project. Shenzhen University. **200K RMB**. Principal Investigator.
- 2023.1-2025.12, Supported by postdoctoral research in Shenzhen. **300K RMB**. Principal Investigator.

## Experience

### National Engineering Laboratory for Big Data System Computing Technology, Shenzhen University (SZU)

Shenzhen, China

ASSISTANT PROFESSOR

2023.12 - PRESENT

- Research on digital human modelling and driving, image anomaly detection, computer vision, machine learning.

### Department of Computer Science and Engineering, College of Engineering, Southern University of Science and Technology (SUSTech)

Shenzhen, China

RESEARCH ASSISTANT PROFESSOR

2021.11 - 2023.11

- Research on image anomaly detection, computer vision, machine learning.

### Department of Computer Science and Engineering, College of Engineering, Southern University of Science and Technology (SUSTech)

Shenzhen, China

POSTDOCTORAL RESEARCHER

2019.10 - 2021.10

- Research on graph representation learning, fast retrieval, and computer vision.

# Education

## University of Chinese Academy of Sciences (UCAS)

PH.D.IN COMPUTER APPLICATIONS TECHNOLOGY

- Thesis title: *Research on 3D Reconstruction for Objects in Multiview Video Sequences*
- Supervisor: Professor Ke Lu

Beijing, China

2016.9 - 2019.7

## Beijing Union University (BUU)

M.S. IN COMPUTER APPLICATIONS TECHNOLOGY

- Thesis title: *Research on Digital Image Dehazing*
- Supervisor: Professor Ning He

Beijing, China

2013.9 - 2016.7

## Hebei University (HBU)

B.S. IN ELECTRONIC INFORMATION SCIENCE AND TECHNOLOGY

Hebei, China

2009.9 - 2013.7

# Honors & Awards

2024	<b>Award of Tencent “Rhinoceros Birds” - Scientific Research Foundation for Young Teachers of Shenzhen University</b> , Shenzhen University	Shenzhen, China
2019	<b>Outstanding Graduates from Beijing</b> , UCAS	Beijing, China
2019	<b>Chinese Academy of Sciences Dean Scholarship</b> , UCAS	Beijing, China
2016	<b>Outstanding Graduates from Beijing</b> , BUU	Beijing, China
2015	<b>National Scholarship</b> , BUU	Beijing, China

# Program Committees

2025	<b>Reviewer</b> , CVPR, ICLR, NeurIPS, ICASSP, ICME, IJCAI, ICML, ICCV
2024	<b>Reviewer</b> , ACM MM, ICLR, IJCAI, NeurIPS, IEEE TASE
2023	<b>Reviewer</b> , IEEE TIP, IEEE TCSVT, NeurIPS, Patterns, IJCAI, ACM MM, ICLR, PR

# Publications

Note that \* contributed equally, † corresponding authors.

First author: 15; Corresponding author: 9; Total number: 55

CCF-A Paper (First author: 1; Corresponding author: 7; All: 18)

1. Hanzhe Liang, Jie Zhang, Tao Dai, Linlin Shen, **Jinbao Wang**, and Can Gao. “Taming Anomalies with Down-Up Sampling Networks: Group Center Preserving Reconstruction for 3D Anomaly Detection.” The 33th ACM International Conference on Multimedia (ACM MM). 2025.
2. Dezhi Zheng, Kaijun Deng, Xianxu Hou, **Jinbao Wang**, Xiaoqin Wang, and Linlin Shen. “Unknown Pixel Mask based finetuning of 2D Inpainting Models for Unbounded 3D Scene Generation from a Single Image.” The 33th ACM International Conference on Multimedia (ACM MM). 2025.
3. Qingyuan Liu, Ke Lv, Kun Dong, Jian Xue, Zehai Niu, and **Jinbao Wang**. “Text-to-Any-Skeleton Motion Generation Without Retargeting.” The IEEE/CVF International Conference on Computer Vision (ICCV). 2025.
4. Jiayi Cheng, Can Gao, Jie Zhou, Jiajun Wen, Tao Dai, and **Jinbao Wang**. “MC3D-AD: A Unified Geometry-aware Reconstruction Model for Multi-category 3D Anomaly Detection.” The 34th International Joint Conference on Artificial Intelligence (IJCAI). 2025.
5. Hanzhe Liang, Guoyang Xie, Chengbin Hou, Bingshu Wang, Can Gao†, and **Jinbao Wang**†. “Look Inside for More: Internal Spatial Modality Perception for 3D Anomaly Detection.” The 39th AAAI Conference on Artificial Intelligence (AAAI). 2025.
6. Linchao Pan, Can Gao, Jie Zhou, and **Jinbao Wang**. “Learning with Open-world Noisy Data via Class-independent Margin in Dual Representation Space.” The 39th AAAI Conference on Artificial Intelligence (AAAI). 2025.
7. Tao Dai, Yang Lin, Hang Guo, **Jinbao Wang**, and Zexuan Zhu. “DCSF-KD: Dynamic Channel-wise Spatial Feature Knowledge Distillation for Object Detection.” The 39th AAAI Conference on Artificial Intelligence (AAAI). 2025.
8. Yu Zeng, Yang Zhang, Linlin Shen, Jiachen Liu, Kaijun Deng, Weizhao He, and **Jinbao Wang**. “HairDiffusion: Vivid Multi-Colored Hair Editing via Latent Diffusion.” The 38th Conference on Neural Information Processing Systems (NeurIPS). 2024.
9. Hongze Zhu, Guoyang Xie, Chengbin Hou, Tao Dai, Can Gao, **Jinbao Wang**†, and Linlin Shen. “Towards High-resolution 3D Anomaly Detection via Group-Level Feature Contrastive Learning.” The 32th ACM International Conference on Multimedia (ACM MM). 2024.
10. Xinpeng Li, Teng Wang, Shuyi Mao, **Jinbao Wang**, Jian Zhao, Xiaojiang Peng, Feng Zheng, and Xuelong Li. “Two in One Go: Single-stage Emotion Recognition with Decoupled Subject-context Transformer.” The 32th ACM International Conference on Multimedia (ACM MM), 2024.

11. Tao Dai, Jianping Wang, Hang Guo, Jinmin Li, **Jinbao Wang**<sup>†</sup>, and Zexuan Zhu<sup>†</sup>. “FreqFormer: Frequency-aware Transformer for Lightweight Image Super-resolution.” The 33rd International Joint Conference on Artificial Intelligence (IJCAI). 2024.
12. Jiaqi Liu, Kai Wu, Qiang Nie, Ying Chen, Bin-Bin Gao, Yong Liu, **Jinbao Wang**, Chengjie Wang, and Feng Zheng. “Unsupervised Continual Anomaly Detection with Contrastively-learned Prompt.” The 38th AAAI Conference on Artificial Intelligence (AAAI). 2024.
13. Jiaqi Liu, Guoyang Xie, Ruitao Chen, Xinpeng Li, **Jinbao Wang**<sup>†</sup>, Yong Liu, Chengjie Wang, and Feng Zheng<sup>†</sup>. “Real3D-AD: A Dataset of Point Cloud Anomaly Detection.” The 37th Conference on Neural Information Processing Systems (NeurIPS) Track on Datasets and Benchmarks. 2023.
14. Ruitao Chen, Guoyang Xie, Jiaqi Liu, **Jinbao Wang**<sup>†</sup>, Ziqi Luo, Jinfan Wang, and Feng Zheng<sup>†</sup>. “EasyNet: An Easy Network for 3D Industrial Anomaly Detection.” The 31st ACM International Conference on Multimedia (ACM MM). 2023.
15. Wujin Li, Jiawei Zhan, **Jinbao Wang**<sup>†</sup>, Bizhong Xia, Bin-Bin Gao, Jun Liu, Chengjie Wang, and Feng Zheng<sup>†</sup>. “Towards Continual Adaptation in Industrial Anomaly Detection.” The 30th ACM International Conference on Multimedia (ACM MM). 2022.
16. Xi Jiang, Jianlin Liu, **Jinbao Wang**<sup>†</sup>, Qiang Nie, Kai Wu, Yong Liu, Chengjie Wang, and Feng Zheng<sup>†</sup>. “SoftPatch: Unsupervised Anomaly Detection with Noisy Data.” The 36th Conference on Neural Information Processing Systems (NeurIPS). 2022.
17. **Jinbao Wang**<sup>\*</sup>, Guoyang Xie<sup>\*</sup>, Yawen Huang<sup>\*</sup>, Yefeng Zheng, Yaochu Jin, and Feng Zheng. “FedMed-ATL: Misaligned Unpaired Cross-Modality Neuroimage Synthesis via Affine Transform Loss.” The 30th ACM International Conference on Multimedia (ACM MM). 2022.
18. Hongjun Chen, **Jinbao Wang**, Hong Cai Chen, Xiantong Zhen, Feng Zheng, Rongrong Ji, and Ling Shao. “Seminar learning for click-level weakly supervised semantic segmentation.” The IEEE/CVF International Conference on Computer Vision (ICCV). 2021.

#### CAS Zone-1 Paper (First author: 4; Corresponding author: 1; All: 8)

1. Jiayi Lyu, Xing Lan, Guohong Hu, Hanyu Jiang, Wei Gan, **Jinbao Wang**, and Jian Xue. “Multimodal Emotional Talking Face Generation Based on Action Units.” IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**). 2024.
2. Zehai Niu, Ke Lu, Jian Xue, Xiaoyu Qin, **Jinbao Wang**, and Ling Shao. “From Methods to Applications: A Review of Deep 3D Human Motion Capture.” IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**) 34(11) 2024: 11340-11359.
3. Guoyang Xie<sup>\*</sup>, **Jinbao Wang**<sup>\*</sup>, Jiaqi Liu<sup>\*</sup>, Jiayi Lyu, Yong Liu, Chengjie Wang, Feng Zheng, and Yaochu Jin. “IM-IAD: Industrial Image Anomaly Detection Benchmark in Manufacturing.” IEEE Transactions on Cybernetics (**IEEE TCYB**) 54(5) 2024: 2720-2733.
4. Wujin Li, Bin-Bin Gao, Bizhong Xia, **Jinbao Wang**, Jun Liu, Yong Liu, Chengjie Wang, and Feng Zheng. “Cross-Modal Alternating Learning with Task-Aware Representations for Continual Learning.” IEEE Transactions on Multimedia (**IEEE TMM**) 26 (2023): 5911-5924.
5. Guoyang Xie<sup>\*</sup>, Yawen Huang<sup>\*</sup>, **Jinbao Wang**<sup>†</sup>, Jiayi Lyu, Feng Zheng<sup>†</sup>, Yefeng Zheng, and Yaochu Jin. “Cross-Modality Neuroimage Synthesis: A Survey.” ACM Computing Surveys 56 (2023): 1-28.
6. Hao Zheng<sup>\*</sup>, **Jinbao Wang**<sup>\*</sup>, Xiantong Zhen, Jingkuan Song, Feng Zheng, Ke Lu, and Guo-Jun Qi. “Continuous Cross-modal Hashing.” Pattern Recognition (PR) 142 (2023): 109662.
7. **Jinbao Wang**, Shuo Xu, Feng Zheng, Ke Lu, Jingkuan Song, and Ling Shao. “Learning Efficient Hash Codes for Fast Graph-based Data Similarity Retrieval.” IEEE Transactions on Image Processing (**IEEE TIP**) 30 (2021): 6321-6334. (**CCF-A**)
8. **Jinbao Wang**, Ke Lu, Jian Xue, Ning He, and Ling Shao. “Single Image Dehazing Based on the Physical Model and MSRCR Algorithm.” IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**) 28(9) 2017: 2190-2199.

#### Other Paper (First author: 10; Corresponding author: 1; All: 31)

1. Yu Huang, Xiaowen Fu, Ling Ma, Zhengqi He, **Jinbao Wang**, and Xueliang Li. “HilComp: Hilbert Curve-Based Balanced Clustering for 3D Gaussian Splatting Compression.” IEEE International Conference on Intelligent Computing (ICIC). 2025. (**Oral Paper**)
2. **Jinbao Wang**, Jiayi Cheng, Can Gao, Jie Zhou, and Linlin Shen. “Enhanced Fabric Defect Detection with Feature Contrast Interference Suppression.” IEEE Transactions on Instrumentation and Measurement (**IEEE TIM**) 74 (2025):1-12.
3. Can Gao, Xiujian Chen, Jie Zhou, **Jinbao Wang**, and Linlin Shen. “Open-Set Fabric Defect Detection with Defect Generation and Transfer.” IEEE Transactions on Instrumentation and Measurement (**IEEE TIM**) 74 (2025):1-13.
4. Kaijun Deng, Dezhi Zheng, Jindong Xie, **Jinbao Wang**, Weicheng Xie, Linlin Shen, and Siyang Song. “DEGSTalk: Decomposed Per-Embedding Gaussian Fields for Hair-Preserving Talking Face Synthesis.” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2025.
5. Jindong Xie, Jiachen Liu, Yupei Lin, **Jinbao Wang**, Xianxu Hou, and Linlin Shen. “High-Fidelity Editable Portrait Synthesis with 3D GAN Inversion.” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2025.
6. Dezhi Zheng, Kaijun Deng, **Jinbao Wang**, and Linlin Shen. “Dual Encoders for Diffusion-based Image Inpainting.” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2025.
7. Biqiao Xin, Qiang Li, Qianchen Mao, **Jinbao Wang**, and Bingshu Wang. “FBI-Net: Frequency Band Integration Network for Infrared Small Target Segmentation.” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2025.
8. Bingshu Wang, Haosu Zhang, Qiang Li, Qianchen Mao, **Jinbao Wang**, C.L. Philip Chen, Aihong Shangguan, and Haosu Zhang. “A Survey on Vision-Based Anti Unmanned Aerial Vehicles Methods.” Drones 8(9) 2024: 518.
9. Teng Yang, Pengcheng Gao, Chengbin Hou, **Jinbao Wang**, and Yongliang Tang. “Self-supervised Models are Strong Industrial Few-shot Defect Classification Learners.” The 2nd workshop on Vision-based Industrial InspectiON (ECCVW). 2024.

10. Zehai Niu, Ke Lv, Kun Dong, Jian Xue, Xiaoyu Qin, and **Jinbao Wang**. "Motion Reconstruction via Human Anatomy Diffusion from Sparse Tracking." Computer Vision (ECCVW). 2024.
11. Qingyuan Liu, Ke Lv, Zehai Niu, Kun Dong, **Jinbao Wang**, Jian Xue, and Xiaoyu Qin. "FlexControl: Flexible and Efficient Full-Body Controllable Text-to-Motion Generation." Towards a Complete Analysis of People: Fine-grained Understanding for Real-World Applications (ECCVW). 2024.
12. Qingyuan Liu, Zehai Niu, Ke Lu, Kun Dong, Jian Xue, Xiaoyu Qin, and **Jinbao Wang**. "AdaptControl: Adaptive Human Motion Control and Generation via User Prompt and Spatial Trajectory Guidance." The 5th International Workshop on Human-centric Multimedia Analysis (ACM MMW). 2024. **(Best Student Paper Reward)**
13. Zehai Niu, Ke Lu, Jian Xue, and **Jinbao Wang**. "Skeleton Cluster Tracking for Robust Multi-view Multi-person 3D Human Pose Estimation." Computer Vision and Image Understanding (CVIU) 246 (2024): 104059.
14. Lian Chen, Zehai Niu, Qingyuan Liu,, **Jinbao Wang**, Jian Xue, and Ke Lu. "Anatomically-informed Vector Quantization Variational Auto-encoder for Text to Motion Generation." IEEE International Conference on Multimedia and Expo, Workshop (ICMEW). 2024.
15. Qiang Li, Qianchen Mao, Wenjie Liu, **Jinbao Wang**, Wenming Wang, and Binshu Wang. "Local Information Guided Global Integration For Infrared Small Target Detection." IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2024.
16. Jiaqi Liu\*, Guoyang Xie\*, **Jinbao Wang\***, Shangnian Li, Chengjie Wang, Feng Zheng, and Yaochu Jin. "Deep Industrial Image Anomaly Detection: A Survey." Machine Intelligence Research (MIR) 21(1) 2024: 104-135.
17. Lingrui Zhang, Shuheng Zhang, Guoyang Xie, Jiaqi Liu, Hua Yan, **Jinbao Wang†**, Feng Zheng†, and Yaochu Jin. "What Makes a Good Data Augmentation for Few-shot Unsupervised Image Anomaly Detection?" The IEEE/CVF Conference on Computer Vision and Pattern Recognition Vision Workshop (CVPRW). 2023.
18. Guoyang Xie\*, **Jinbao Wang\*†**, Jiaqi Liu\*, Feng Zheng†, and Yaochu Jin. "Pushing the Limits of Fewshot Anomaly Detection in Industry Vision: Graphcore." The 11th International Conference on Learning Representations (ICLR). 2023.
19. Guoyang Xie\*, **Jinbao Wang\***, Guo Yu, Feng Zheng, and Yaochu Jin. "Tiny Adversarial Multit-objective Oneshot Neural Architecture Search." Complex & Intelligent Systems (CIS) 6 (2023): 107-109.
20. **Jinbao Wang\***, Guoyang Xie\*, Yawen Huang\*, Jiayi Lyu, Feng Zheng, Yefeng Zheng, and Yaochu Jin. "FedMed-GAN: Federated Domain Translation on Unsupervised Cross-modality Brain Image Synthesis." Neurocomputing 546 (2023): 126282.
21. **Jinbao Wang\***, Shujie Tan\*, Xiantong Zhen, Shuo Xu, Feng Zheng, Zhenyu He, and Ling Shao. "Deep 3D Human Pose Estimation: A Review." Computer Vision and Image Understanding (CVIU) 210 (2021): 103225.
22. Lian Chen, Ke Lu, Pengcheng Gao, Jian Xue, and **Jinbao Wang**. "A Novel Multi-feature Skeleton Representation for 3D Action Recognition." International Conference on Pattern Recognition (ICPR). 2021.
23. **Jinbao Wang**, Ke Lu, Jian Xue, and Yutong Kou. "Relative Depth Estimation Prior for Single Image Dehazing." IEEE International Conference on Multimedia & Expo Workshops (ICMEW). 2019.
24. **Jinbao Wang**, Ke Lu, Jian Xue, Pengcheng Gao, and Yanfu Yan. "A Markerless Body Motion Capture System for Character Animation Based on Multi-view Cameras." IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 2019.
25. Ning He, **Jinbao Wang**, Lu-Lu Zhang, Guang-Mei Xu, and Ke Lu. "Non-local Sparse Regularization Model with Application to Image Denoising." Multimedia Tools and Applications 75(5) 2016: 2579-2594.
26. Ning He, **Jinbao Wang**, Lu-Lu Zhang, and Ke Lu. "Convex Optimization Based Low-rank Matrix Decomposition for Image Restoration." Neurocomputing 172 (2016): 253-261.
27. **Jinbao Wang**, Ning He, Lu-Lu Zhang, and Ke Lu. "Single Image Dehazing with a Physical Model and Dark Channel Prior." Neurocomputing 149 (2015): 718-728. **(ESI Highly-Cited Paper)**
28. **Jinbao Wang**, Ning He, and Ke Lu. "A New Single Image Dehazing Method with MSRCR Algorithm." The 7th International Conference on Internet Multimedia Computing and Service (ICIMCS). 2015.
29. Ning He, **Jinbao Wang**, Lu-Lu Zhang, and Ke Lu. "An Improved Fractional-order Differentiation Model for Image Denoising." Signal Processing 112 (2015): 180-188.
30. Ning He, Ke Lu, and **Jinbao Wang**. "Image Denoising Using Fractional-order Non-local TV Model." International Conference on Internet Multimedia Computing and Service (ICIMCS). 2014.
31. Ning He, Ke Lu, Bing-Kun Bao, Lu-Lu Zhang, and **Jinbao Wang**. "Single-image Motion Deblurring Using an Adaptive Image Prior." Information Sciences 281 (2014): 736-749.