

Jinbao Wang

ASSISTANT PROFESSOR · NATIONAL ENGINEERING LABORATORY FOR BIG DATA SYSTEM COMPUTING TECHNOLOGY · 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 **National Engineering Laboratory for Big Data System Computing Technology**, Shenzhen University, Shenzhen, 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 "Rhinoceros Birds" - Scientific Research Foundation for Young Teachers of Shenzhen University; Published papers **30+** in important international journals and conferences, such as IEEE TIP, IEEE TCSVT, Neurocomputing, ICCV, ACM MM, NeurIPS, and ICLR, with **1000+** citations and **1** ESI highly-cited paper; 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

- 2024.6-2026.5, Tencent "Rhinoceros 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.
- 2023.4-2023.8. Development of a flexible electrostatic adsorption-assisted unmanned aerial vehicle visual positioning and object grasping platform. Harbin Institute of Technology (Shenzhen). **35K 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	Award of Tencent “Rhinoceros Birds” - Scientific Research Foundation for Young Teachers of Shenzhen University , Shenzhen University	Shenzhen, China
2019	Outstanding Graduates from Beijing , UCAS	Beijing, China
2019	Chinese Academy of Sciences Dean Scholarship , UCAS	Beijing, China
2016	Outstanding Graduates from Beijing , BUU	Beijing, China
2015	National Scholarship , BUU	Beijing, China

Program Committees

2024	Reviewer , ACM MM, ICLR, IJCAI, NeurIPS, IEEE TASE
2023	Reviewer , IEEE TIP, IEEE TCSVT, NeurIPS, Patterns, IJCAI, ACM MM, ICLR, PR

Publications

Note that * contributed equally, † corresponding authors.

First author: 13; Corresponding author: 8; Paper total number: 39

CCF-A Paper (First author: 2; Corresponding author: 6)

1. 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.” In Proceedings of the 32th ACM International Conference on Multimedia (ACM MM), 2024.
2. 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.” In Proceedings of the 32th ACM International Conference on Multimedia (ACM MM), 2024.
3. Tao Dai, Jianping Wang, Hang Guo, Jinmin Li, **Jinbao Wang**[†], and Zexuan Zhu[†]. “FreqFormer: Frequency-aware Transformer for Lightweight Image Super-resolution.” International Joint Conference on Artificial Intelligence (IJCAI). 2024.
4. Jiaqi Liu, Kai Wu, Qiang Nie, Ying Chen, Bin-Bin Gao, Yong Liu, **Jinbao Wang**, Chengjie Wang, and Feng Zheng. “Cross-Modal Alternating Learning with Task-Aware Representations for Continual Learning.” Association for the Advancement of Artificial Intelligence (AAAI). 2024.
5. Jiaqi Liu, Guoyang Xie, Ruitao Chen, Xinpeng Li, **Jinbao Wang**[†], Yong Liu, Chengjie Wang, and Feng Zheng[†]. “Real3D-AD: A Dataset of Point Cloud Anomaly Detection.” NeurIPS Datasets & Benchmarks Track. 2023.
6. Ruitao Chen, Guoyang Xie, Jiaqi Liu, **Jinbao Wang**[†], Ziqi Luo, Jinfan Wang, and Feng Zheng[†]. “EasyNet: An Easy Network for 3D Industrial Anomaly Detection.” In Proceedings of the 31st ACM International Conference on Multimedia (ACM MM). 2023.
7. Wujin Li, Jiawei Zhan, **Jinbao Wang**[†], Bizhong Xia, Bin-Bin Gao, Jun Liu, Chengjie Wang, and Feng Zheng[†]. “Towards Continual Adaptation in Industrial Anomaly Detection.” In Proceedings of the 30th ACM International Conference on Multimedia (ACM MM), pp. 2871-2880. 2022.
8. Xi Jiang, Jianlin Liu, **Jinbao Wang**[†], Qiang Nie, Kai Wu, Yong Liu, Chengjie Wang, and Feng Zheng[†]. “SoftPatch: Unsupervised Anomaly Detection with Noisy Data.” In Advances in Neural Information Processing Systems (NeurIPS). 2022.
9. **Jinbao Wang**^{*}, Guoyang Xie^{*}, Yawen Huang^{*}, Yefeng Zheng, Yaochu Jin, and Feng Zheng. “FedMed-ATL: Misaligned Unpaired Cross-Modality Neuroimage Synthesis via Affine Transform Loss.” In Proceedings of the 30th ACM International Conference on Multimedia (ACM MM), pp. 1522-1531. 2022.
10. **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.

11. 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." In Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), pp. 6920-6929. 2021.

Other Published Paper (First author: 11; Corresponding author: 3)

1. Teng Yang, Pengcheng Gao, Chengbin Hou, **Jinbao Wang**, and Yongliang Tang. "Self-supervised Models are Strong Industrial Few-shot Defect Classification Learners." 2nd workshop on Vision-based Industrial Inspection. ECCVW-VISION. 2024.
2. 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-TCAP. 2024.
3. 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-HCMA. 2024. (**Best Student Paper**)
4. Zehai Niu, Ke Lu, Jian Xue, Xiaoyu Qin, **Jinbao Wang**, and Ling Shao. "From Method to Application: A Review of Deep 3D Human Motion Capture." IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**). 2024.
5. 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). 2024.
6. 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.
7. 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.
8. Guoyang Xie*, **Jinbao Wang***, Jiaqi Liu*, 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**). 2024.
9. Wujin Li, Bin-Bin Gao, Bizhong Xia, **Jinbao Wang**, Jun Liu, Yong Liu, Chengjie Wang, and Feng Zheng. "Unsupervised Continual Anomaly Detection with Contrastively-learned Prompt." IEEE Transactions on Multimedia (**IEEE TMM**). 2023.
10. Guoyang Xie*, Yawen Huang*, **Jinbao Wang†**, Jiayi Lyu, Feng Zheng†, Yefeng Zheng, and Yaochu Jin. "Cross-Modality Neuroimage Synthesis: A Survey." ACM Computing Surveys 56 (2023): 1-28.
11. 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?" In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR Vision Workshop), pp. 4344-4353. 2023.
12. Guoyang Xie*, **Jinbao Wang*†**, Jiaqi Liu*, Feng Zheng†, and Yaochu Jin. "Pushing the limits of fewshot anomaly detection in industry vision: Graphcore." The Eleventh International Conference on Learning Representations (ICLR). 2023.
13. 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). 2023.
14. Guoyang Xie*, **Jinbao Wang***, Guo Yu, Feng Zheng, and Yaochu Jin. "Tiny adversarial multi-objective oneshot neural architecture search." Complex & Intelligent Systems (CIS) 6 (2023): 107-109.
15. **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.
16. Hao Zheng*, **Jinbao Wang***, Xiantong Zhen, Jingkuan Song, Feng Zheng, Ke Lu, and Guo-Jun Qi. "Continuous cross-modal hashing." Pattern Recognition (PR) 142 (2023): 109662.
17. **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.
18. Lian Chen, Ke Lu, Pengcheng Gao, Jian Xue, and **Jinbao Wang**. "A Novel Multi-feature Skeleton Representation for 3D Action Recognition." In International Conference on Pattern Recognition (ICPR), pp. 365-379. Springer, Cham, 2021.
19. **Jinbao Wang**, Ke Lu, Jian Xue, and Yutong Kou. "Relative Depth Estimation Prior for Single Image Dehazing." In 2019 IEEE International Conference on Multimedia & Expo Workshops (ICMEW), pp. 270-275. IEEE, 2019.
20. **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." In ICASSP 2019-2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 8558-8562. IEEE, 2019.
21. **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, no. 9 (2017): 2190-2199.
22. 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, no. 5 (2016): 2579-2594.
23. 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.

24. **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)**
25. **Jinbao Wang**, Ning He, and Ke Lu. "A new single image dehazing method with MSRCR algorithm." In *Proceedings of the 7th International Conference on Internet Multimedia Computing and Service*, pp. 1-4. 2015.
26. 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.
27. Ning He, Ke Lu, and **Jinbao Wang**. "Image denoising using fractional-order non-local TV model." In *Proceedings of International Conference on Internet Multimedia Computing and Service*, pp. 279-282. 2014.
28. 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.