

# 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)'s "Efficient 3D Anomaly Detection Algorithm for Industrial Vision" (Grant No. 62206122); Participated in general projects such as the theory and methods of multimodal object 3D detection and recognition based on deep learning technology; Published papers **30+** in important international journals and conferences, such as IEEE TIP, IEEE TCSVT, Neurocomputing, ICCV, ACM MM, NeurIPS, and ICLR, with **800+** citations and **1** 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

- 2024.1-2028.12, 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. **600 RMB**. Chinese Side Collaborator.
- 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.
- 2024.1-2026.11, 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)

Beijing, China

PH.D. IN COMPUTER APPLICATIONS TECHNOLOGY

2016.9 - 2019.7

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

## 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

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

2024	<b>Reviewer</b> , AAAI, ICLR, IJCAI
2023	<b>Reviewer</b> , IEEE TIP, IEEE TCSVT, NeurIPS, Patterns, IJCAI, ACM MM, ICLR, PR

## Publications

Note that \* contributed equally, † corresponding authors.

**First author: 13; Corresponding author: 7; Paper total number: 29**

**CCF-A Paper (First author: 2; Corresponding author: 4)**

1. 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). 2023.
2. Jiaqi Liu, Guoyang Xie, Ruitao Chen, Xinpeng Li, **Jinbao Wang**†, Yong Liu, Chengjie Wang, Feng Zheng†. "Real3D-AD: A Dataset of Point Cloud Anomaly Detection." NeurIPS Datasets & Benchmarks Track. 2023.
3. 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.
4. 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.
5. 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.
6. **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.
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.
8. 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.

**Highly Cited Paper (First author: 1)**

1. **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.

**Other Published Paper (First author: 10; Corresponding author: 3)**

1. 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.
2. 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.
3. 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.
4. 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.

5. Lingrui Zhang, Shuheng Zhang, Guoyang Xie, Jiaqi Liu, Hua Yan, **Jinbao Wang**<sup>†</sup>, Feng Zheng<sup>†</sup>, 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.
6. Guoyang Xie\*, **Jinbao Wang**\*<sup>†</sup>, Jiaqi Liu\*, Feng Zheng<sup>†</sup>, and Yaochu Jin. “Pushing the limits of fewshot anomaly detection in industry vision: Graphcore.” The Eleventh International Conference on Learning Representations (ICLR). 2023.
7. 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.
8. 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.
9. **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.
10. 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.
11. **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.
12. 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.
13. **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.
14. **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.
15. **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.
16. 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.
17. 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.
18. **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.
19. 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.
20. 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.
21. 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.