



# Jinbao Wang

RESEARCH ASSISTANT PROFESSOR · SUSTech

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https://scholar.google.com/citations?hl=en&user=qI80ipUAAAAJ

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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 a Research Assistant Professor at the Southern University of Science and Technology (SUSTech), 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 **20+** papers in important international journals and conferences, such as IEEE TIP, IEEE TCSVT, Neurocomputing, ICCV, ACM MM, NeurIPS, and ICLR, with **700+** 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. **2.16 million 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.
- 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.
- 2023.1-2025.12, Supported by postdoctoral research in Shenzhen. **300K RMB**. Principal Investigator.

## Experience

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

Shenzhen, China

RESEARCH ASSISTANT PROFESSOR

2021.11 - PRESENT

- 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)

Beijing, China

M.S. IN COMPUTER APPLICATIONS TECHNOLOGY

2013.9 - 2016.7

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

### Hebei University (HBU)

Hebei, China

B.S. IN ELECTRONIC INFORMATION SCIENCE AND TECHNOLOGY

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

## Publications

Note that \* contributed equally, † corresponding authors.

**First author: 12; Corresponding author: 7; Paper total number: 26**

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

- Jiaqi Liu, Guoyang Xie, Ruitao Chen, Xinpeng Li, **Jinbao Wang**<sup>†</sup>, Yong Liu, Chengjie Wang, Feng Zheng<sup>†</sup>. “Real3D-AD: A Dataset of Point Cloud Anomaly Detection.” NeurIPS Datasets & Benchmarks Track. 2023.
- 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.” In Proceedings of the 31st ACM International Conference on Multimedia (ACM MM). 2023.
- 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.” In Proceedings of the 30th ACM International Conference on Multimedia (ACM MM), pp. 2871-2880. 2022.
- 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.” In Advances in Neural Information Processing Systems (NeurIPS). 2022.
- 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.” In Proceedings of the 30th ACM International Conference on Multimedia (ACM MM), pp. 1522-1531. 2022.
- 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.
- 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)**

- 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: 9; Corresponding author: 3)**

- 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.
- 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.
- Guoyang Xie<sup>\*</sup>, **Jinbao Wang**<sup>\*†</sup>, Jiaqi Liu<sup>\*</sup>, 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.
- Jiaqi Liu<sup>\*</sup>, Guoyang Xie<sup>\*</sup>, **Jinbao Wang**<sup>\*</sup>, Shangnian Li, Chengjie Wang, Feng Zheng, and Yaochu Jin. “Deep Industrial Image Anomaly Detection: A Survey.” Machine Intelligence Research (MIR). 2023.
- Guoyang Xie<sup>\*</sup>, **Jinbao Wang**<sup>\*</sup>, Guo Yu, Feng Zheng, and Yaochu Jin. “Tiny adversarial multi-objective oneshot neural architecture search.” Complex & Intelligent Systems (CIS) 6 (2023): 107-109.
- Jinbao Wang**<sup>\*</sup>, Guoyang Xie<sup>\*</sup>, Yawen Huang<sup>\*</sup>, 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.
- 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.
- Jinbao Wang**<sup>\*</sup>, Shujie Tan<sup>\*</sup>, 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.

9. 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.
10. **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.
11. **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.
12. **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.
13. 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.
14. 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.
15. **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.
16. 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.
17. 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.
18. 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.

#### In Progress Paper

1. **Jinbao Wang\***, Guoyang Xie\*, Yawen Huang\*, Jiayi Lyu, Feng Zheng, Yefeng Zheng, and Yaochu Jin. "K-CROSS: K-Space-Aware Cross-Modality Score for Synthesized Neuroimage Quality Assessment." IEEE Journal of Biomedical and Health Informatics (**IEEE JBHI**) (Under Review). 2023.
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**) (Major Revision). 2023.