Jinghua Wang

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Research Interests

Pattern Recognition, Image Processing, Copmuter Vision, Transfer Learning

Experience

Harbin Institute of Technology — Shenzhen, China
Associate Professor, School of Computer Science and Technology — 2022–Now

Shenzhen University — Shenzhen, China
Research Associate Professor, College of Computer and Software Engineering — 2017–2022

Nanyang Technological University — Singapore
Research Fellow, ROSE Lab — 2014–2016

Education

The Hong Kong Polytechnic University — Hong Kong
Ph.D. in Computing — 2009–2013

Harbin Institute of Technology Shenzhen Graduate School — Shenzhen, China
M.S. in Computer Science and Technology — 2007–2009

Shandong University — Jinan, China
B.S. in Computer Science and Technology — 2001–2005

Selected Research Projects

- Domain Adaptation for Data Incomplete Visual Tasks, *National Natural Science Foundation of China (NSFC)* – 2026–2029, Principal Investigator
- Learning across Tasks for Zero-Shot Domain Adaptation, *National Natural Science Foundation of China (NSFC)* – 2022–2025, Principal Investigator
- Unsupervised Clustering Analysis Based on Generative Adversarial Networks, *National Natural Science Foundation of China (NSFC) – Young Scientists Fund*, 2019–2021, Principal Investigator
- GMM-based Unsupervised Clustering Algorithms under DL Frameworks, *Natural Science Foundation of Guangdong Province – General Program*, 2023–2025, Principal Investigator
- Research on Key Theories of Transfer Learning, *Shenzhen Peacock Talent Startup Program*, 2022–2024, Principal Investigator
- Research on Domain Adaptation Algorithms Based on Deep Learning, *Research Startup Fund, Harbin Institute of Technology, Shenzhen*, 2022–2024, Principal Investigator
- IoT-Enabled Surface-Quality Management for Cold-Rolled Steel Sheets, *Industry collaborated Project with Hesteel Group Co., Ltd.*, 2022–2024, Principal Investigator

- Sensing Degradation and Robust Perception–Localization for Robots in Extreme Environments, *Shenzhen Key R&D Project*, 2023–2025, Co-Investigator
- AI-Based Visual Inspection of Injection-Molded Parts *Industry-sponsored Project with Midea Group*, 2022–2023, Co-Investigator
- 3D Multi-View Panoramic Video for Indoor Scene Reconstruction *International Cooperation Key Project*, 2017–2021, Co-Investigator
- Dynamic 3D Scene Construction and Localization in Unknown Environments *National Key R&D Program, Ministry of Science and Technology*, 2019–2023, Co-Investigator

Editor and Reviewer

- **Associate Editor**
  i) Pattern Recognition;
  ii) International Journal of Image and Graphics (IJIG).
- **Reviewer**
  i) Conferences: CVPR, ICCV, ECCV, ICML, NeurIPS, ICME, ACCV, BMVC, AAAI, IJCAI, ACM MM, etc.
  ii) Journal: IEEE T-PAMI, IEEE T-IP, IEEE T-NNLS, IEEE T-CSVT, IEEE T-MM, PR, Neurocomputing, etc.

Publications

1. Y. Liu, C. Huang, Y. Xu, X. Cao, **Jinghua Wang**, "Towards Efficient Test-Time Adaptation with Hierarchical Distribution Alignment," *IEEE Transactions on Image Processing*, 2025.
2. X. Zhang, G. Qiu, Y. Xu, **Jinghua Wang**, "Universal Scene Graph Generation via Semantic Feature Alignment," *IEEE International Conference on Multimedia and Expo (ICME)*, 2025.
3. G. Qiu, X. Zhang, Y. Xu, **Jinghua Wang**, "Attribute-Guided Zero-Shot CLIP in Image Classification," *IEEE International Conference on Multimedia and Expo (ICME)*, 2025.
4. Y. Hu, Z. Zhang, J. Zhang, **Jinghua Wang**, Q. Wang, L. Qu, Z. Xu, "Simple Yet Effective: Extracting Private Data Across Clients in Federated Fine-Tuning of Large Language Models," *Findings of IJCNLP-AACL*, 2025.
5. X. Li, Z. Xu, L. Wen, X. Zhou, **Jinghua Wang**, "Adaptive Downscaling on Inputs Improves Time Series Classification," *Proc. PRCV*, 2025.
6. T. Wang, Y. Zhao, **Jinghua Wang**, Z. Huang, J. Liu, Q. Wei, "See-Through Soil: Underground Root Tuber Sensing With RF Sensor Networks," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 63, 2025.
7. J. Li, **Jinghua Wang**, X. Wang, L. Yan, Y. Xu, "Component-wise Self-Correction Network for Human Motion Prediction," *Proc. ICASSP*, 2025.
8. C. Liu, Y. Que, Q. Xu, Y. Liu, J. Wen, **Jinghua Wang**, X. Luo, "Hierarchical Information Aggregation for Incomplete Multimodal Alzheimer's Disease Diagnosis," *Proc. NeurIPS*, 2025.
9. W. Ouyang, **Jinghua Wang**, Z. Xu, J. Chen, Q. Ye, "RFMPose: Generative Category-level Object Pose Estimation via Riemannian Flow Matching," *Proc. NeurIPS*, 2025.
10. T. Shao, Z. Tian, **Jinghua Wang**, J. Su, "BFRA: A Bi-level Feature Relation Alignment Method for Cross-Domain Few-Shot Learning," *IEEE Transactions on Circuits and Systems for Video Technology*, 2025.
11. J. Li, **Jinghua Wang**, X. Wang, L. Yan, X. Luo, Y. Xu, "Adaptive Self-Correction Network for Human Motion Prediction," *Applied Soft Computing*, vol. 159, 2025.
12. J. Cui, Q. Zhang, Z. Wang, **Jinghua Wang**, Q. Zhu, "An Enhanced Palmprint Adversarial Attack Against Visible and Invisible Features," *IEEE International Conference on Multimedia and Expo (ICME)*, 2025.

13. X. Li, Y. Jin, X. Jin, Z. Wu, B. Li, Y. Wang, W. Yang, Y. Li, Z. Chen, B. Wen, R. Tan, **Jinghua Wang**, et al., "NTIRE 2025 Challenge on Day and Night Raindrop Removal for Dual-Focused Images: Methods and Results," *Proc. CVPR Workshops*, pp. 1172–1183, 2025.

14. M. Cond, R. Timofte, Z. Lu, X. Kong, X. Xing, F. Wang, S. Han, M. K. Park, **Jinghua Wang**, et al., "NTIRE 2025 Challenge on Raw Image Restoration and Super-Resolution," *Proc. CVPR Workshops*, pp. 1148–1171, 2025.

15. Y. Liu, **Jinghua Wang**, W. Wang, Y. Hu, Y. Wang, Y. Xu, "CRADA: Cross Domain Object Detection with Cyclic Reconstruction and Decoupling Adaptation," *IEEE Transactions on Multimedia*, 2024.

16. J. Li, **Jinghua Wang**, L. Wu, X. Wang, X. Luo, Y. Xu, "A Human-like Action Learning Process: Progressive Pose Generation for Motion Prediction," *Knowledge-Based Systems*, vol. 227, 2024.

17. W. Wang, L. Hao, **Jinghua Wang**, Y. Hu, Y. Xu, "Surface Tiny Defect Detection Based on Gaussian Distribution Modeling and Adaptive Feature Fusion," *International Conference on Electronic Engineering and Information Technology (ICEEIE)*, 2024.

18. R. Zhao, **Jinghua Wang**, Y. Chen, Z. Zheng, K. Cui, J. Su, "Class-Agnostic Detection of Unknown Objects from Foreground Improves Robust Open World Object Detection," *Chinese Conference on Pattern Recognition and Computer Vision (PRCV)*, pp. 78–92, 2024.

19. **Jinghua Wang**, L. Xu, C. Kuang, Y. Xu, W. Wang, "A New Method for Network Coverage Optimization and its Application on Fire Monitoring," *Multimedia Tools and Applications*, 2024.

20. Y. Hu, **Jinghua Wang**, W. Wang, Y. Xu, "Weakly Supervised Steel Surface Defect Detection via Vision Transformer with Background Suppression," *International Conference on Computer Graphics, Artificial Intelligence and Data Processing (ICCGAI)*, 2024.

21. Y. Liu, **Jinghua Wang**, C. Huang, Y. Wang, Y. Xu, "CIGAR: Cross-Modality Graph Reasoning for Domain Adaptive Object Detection," *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 23776–23785, 2023.

22. Y. Liu, **Jinghua Wang**, L. Xiao, C. Liu, Z. Wu, Y. Xu, "Foregroundness-Aware Task Disentanglement and Self-Paced Curriculum Learning for Domain Adaptive Object Detection," *IEEE Transactions on Neural Networks and Learning Systems*, 2023.

23. R. Zhuge, **Jinghua Wang**, Z. Xu, Y. Xu, "Single Image Denoising with a Feature-Enhanced Network," *Neural Networks*, vol. 161, 2023.

24. Y. Fu, H. Zhong, J. Cui, H. Liu, C. Huang, **Jinghua Wang**, "User-Guided Anime Line Art Colorization with Spatially-Adaptive Normalization," *IEEE Smart World Congress (SWC)*, pp. 1–8, 2023.

25. L. Xu, **Jinghua Wang**, C. Kuang, Y. Xu, "A Novel Three-Value Grid Scheme and Rescue Path Planning Algorithm for Building Fire," *Journal of Intelligent & Fuzzy Systems*, vol. 44, no. 6, pp. 1–16, 2023.

26. Y. Zhang, **Jinghua Wang**, L. Hu, "Multiple Adverse Weather Removal Using Adversarial and Contrastive Learning," *IEEE Smart World Congress (SWC)*, pp. 1–8, 2023.

27. Z. Yang, **Jinghua Wang**, Y. Zhu, "Few-Shot Classification with Contrastive Learning," *European Conference on Computer Vision (ECCV)*, pp. 293–309, 2022.

28. T. Li, L. G. Foo, Q. Ke, H. Rahmani, A. Wang, **Jinghua Wang**, J. Liu, "Dynamic Spatio-Temporal Specialization Learning for Fine-Grained Action Recognition," *European Conference on Computer Vision (ECCV)*, pp. 386–403, 2022.

29. **Jinghua Wang**, L. Wang, J. Jiang, "Preserving Similarity Order for Unsupervised Clustering," *Pattern Recognition*, vol. 108, 2022.

30. **Jinghua Wang**, Jianmin Jiang, "Domain Shift Preservation for Zero-Shot Domain Adaptation," *IEEE Transactions on Image Processing*, vol. 30, pp. 5505–5517, 2021.

31. **Jinghua Wang**, Jianmin Jiang, "Learning across Tasks for Zero-Shot Domain Adaptation from a Single Source Domain," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021.

32. **Jinghua Wang**, Jianmin Jiang, "Unsupervised Deep Clustering via Adaptive GMM Modeling and Optimization," *Neurocomputing*, vol. 433, pp. 199–211, 2021.

33. **Jinghua Wang**, Jianmin Jiang, "Adversarial Learning for Zero-shot Domain Adaptation," *European Conference on Computer Vision (ECCV)*, pp. 329–344, 2020.

34. **Jinghua Wang**, Jianmin Jiang, "SA-Net: A Deep Spectral Analysis Network for Image Clustering," *Neurocomputing*, vol. 383, pp. 10–23, 2020.

35. L. Mao, **Jinghua Wang**, Jianmin Jiang, "Computerized Logo Synthesis with Wavelets-Enhanced Adversarial Learning," *IEEE International Symposium on Circuits and Systems (ISCAS)*, pp. 1–5, 2020.

36. **Jinghua Wang**, Jianmin Jiang, "Conditional Coupled Generative Adversarial Networks for Zero-shot Domain Adaptation," *IEEE International Conference on Computer Vision (ICCV)*, pp. 3375–3384, 2019.

37. **Jinghua Wang**, Adrian Hilton, Jianmin Jiang, "Spectral Analysis Network for Deep Representation Learning and Image Clustering," *IEEE International Conference on Multimedia and Expo (ICME)*, pp. 1540–1545, 2019.

38. **Jinghua Wang**, Jianmin Jiang, "An Unsupervised Deep Learning Framework via Integrated Optimization of Representation Learning and GMM-Based Modeling," *Asian Conference on Computer Vision (ACCV)*, pp. 249–265, 2018.

39. **Jinghua Wang**, Zhenhua Wang, Dacheng Tao, Simon See, Gang Wang, "Learning Common and Specific Features for RGB-D Semantic Segmentation with Deconvolutional Networks," *European Conference on Computer Vision (ECCV)*, pp. 664–679, 2016.

40. **Jinghua Wang**, Gang Wang, "Hierarchical Spatial Sum–Product Networks for Action Recognition in Still Images," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 28, no. 1, pp. 90–100, 2016.

41. Q. Deng, Y. Xu, **Jinghua Wang**, K. Sun, "Deep Learning for Gender Recognition," *International Conference on Computers, Communications and Systems (ICCCS)*, pp. 1–6, 2015.

42. **Jinghua Wang**, A. A. Nabi, G. Wang, C. Wan, T. T. Ng, "Towards Predicting the Likeability of Fashion Images," *arXiv preprint arXiv:1511.05296*, 2015.

43. Q. Zhu, H. Sun, Q. Feng, **Jinghua Wang**, "CCEDA: Building Bridge Between Subspace Projection Learning and Sparse Representation-Based Classification," *Electronics Letters*, vol. 50, no. 25, pp. 1919–1921, 2014.

44. Z. Fan, **Jinghua Wang**, B. Xu, P. Tang, "An Efficient KPCA Algorithm Based on Feature Correlation Evaluation," *Neural Computing and Applications*, vol. 24, no. 7-8, pp. 1795–1806, 2014.

45. **Jinghua Wang**, Peng Wang, Qin Li, Jane You, "Improvement of the Kernel Minimum Squared Error Model for Fast Feature Extraction," *Neural Computing and Applications*, vol. 23, no. 1, pp. 53–59, 2013.

46. Z. Fan, J. Cui, C. Li, **Jinghua Wang**, "Local Minimum Squared Error for Face and Handwritten Character Recognition," *Journal of Electronic Imaging*, vol. 22, no. 3, 033027, 2013.

47. Q. Li, H. J. Wang, J. You, Z. M. Li, J. X. Li, "Enlarge the Training Set Based on Inter-class Relationship for Face Recognition from One Image per Person," *PloS ONE*, vol. 8, no. 7, e68539, 2013.

48. **Jinghua Wang**, Jane You, Yong Xu, "Sparse Residue for Occluded Face Image Reconstruction and Classification," *International Conference on Pattern Recognition (ICPR)*, pp. 1–4, 2012.

49. **Jinghua Wang**, Jane You, Qin Li, Yong Xu, "Orthogonal Discriminant Vector for Face Recognition across Pose," *Pattern Recognition*, vol. 45, no. 12, pp. 4069–4079, 2012.

50. **Jinghua Wang**, Jane You, Qin Li, Yong Xu, "Extract Minimum Positive and Maximum Negative Features for Imbalanced Binary Classification," *Pattern Recognition*, vol. 45, no. 3, pp. 1136–1145, 2012.

51. Yong Xu, Qi Zhu, **Jinghua Wang**, "Breast Cancer Diagnosis Based on a Kernel Orthogonal Transform," *Neural Computing and Applications*, vol. 21, no. 8, pp. 1865–1870, 2012.

52. Qi Zhu, Yong Xu, **Jinghua Wang**, "Kernel Based Sparse Representation for Face Recognition," *International Conference on Pattern Recognition (ICPR)*, pp. 1–4, 2012.

53. **Jinghua Wang**, Qin Li, Jane You, Qijun Zhao, "Fast Kernel Fisher Discriminant Analysis via Approximating the Kernel Principal Component Analysis," *Neurocomputing*, vol. 74, no. 17, pp. 3313–3322, 2011.

54. **Jinghua Wang**, Yong Xu, David Zhang, Jane You, "An Efficient Method for Computing Orthogonal Discriminant Vectors," *Neurocomputing*, vol. 73, no. 10-12, pp. 2168–2176, 2010.

55. Q. Li, J. You, **Jinghua Wang**, A. Wong, "A Fully Automated System for Retinal Vessel Tortuosity Diagnosis Using Scale Dependent Vessel Tracing and Grading," *IEEE International Symposium on Computer-Based Medical Systems*, pp. 1–6, 2010.

56. **Jinghua Wang**, Q. Li, J. You, B. Zhang, F. Karray, "Refractive Error Detection via Group Sparse Representation," *International Conference on Autonomous and Intelligent Systems*, pp. 1–6, 2010.

57. **Jinghua Wang**, "A Novel Solution Scheme for the Kernel MSE Model," *International Conference on Artificial Intelligence and Computational Intelligence*, pp. 1–5, 2009.

58. **Jinghua Wang**, B. Xie, J. Xu, H. Chen, "A Fast KPCA-Based Nonlinear Feature Extraction Method," *Asia-Pacific Conference on Computational Intelligence and Industrial Applications*, pp. 1–5, 2009.

59. Z. Guo, Q. Li, L. Zhang, J. You, W. Liu, **Jinghua Wang**, "Texture Image Classification Using Complex Texton," *International Conference on Intelligent Computing*, pp. 98–104, 2009.