

Curriculum Vitae

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Academic Qualification

Ph.D., 2009, Macau University of Science and Technology, in Computer technology and Its Application.

M.Sc. 2006, Macau University of Science and Technology, Major Information Technology.

B.Eng., 2004, Chongqing University of Posts and Communications, in Communication Engineering.

Teaching Area

Computer Organization (Undergraduate)

Computer Architecture (MSc in IT)

Data Mining (MSc in IT and Applied Math and Data Science)

Advanced Topic in Data Science (MSc in Applied Math and Data Science)

Advanced Topic in Information Technology (MSc in IT)

Research Area

Artificial Intelligence (Vision, LLM, Multi-modal, Agents)

AI4Science

Computer Architecture, AI Accelerators for Big Data and Machine Learning

Working Experience

2020-Present, Associate Professor, in School of Computer Science and Engineering, Faculty of Innovation Engineering, Macau University of Science and Technology.

2014-2020, Assistant Professor, in Faculty of Information Technology, Macau University of Science and Technology.

2009-2013, Post-Doc Research Fellow, in Space Science Institution, Macau University of Science and Technology.

Academic Publication

(* **corresponding author**)

1. Zhou, M., Lin, Z., & **Liang, Y.***. (2025). GSDA: A machine learning-enhanced meta-heuristic framework for rapid lithium-ion battery parameter identification. *Journal of Energy Storage*, 140, 118900. (JCR Q1)
2. Liang, H., Zheng, H., Huang, J., Ma, H., & **Liang, Y.***. (2025). Online Prototype Angular Balanced Self-Distillation for Non-Ideal Annotation in Remote Sensing Image Segmentation. *Remote Sensing*, 18(1), 22. (JCR Q1)
3. Mao, J., Ma, H., & **Liang, Y.***. (2025). BiMambaHSI: Bidirectional Spectral–Spatial State Space Model for Hyperspectral Image Classification. *Remote Sensing*, 17(22), 3676. (JCR Q1)
4. Han, T., Zhou, B., Liu, A., **Liang, Y.**, Zhang, D., Lei, Z., & Wan, J. (2025, October). PESTalk: Speech-Driven 3D Facial Animation with Personalized Emotional Styles. *ACM MM*. (CCF-A)
5. Nong, J., Qi, Y., Mo, Z., Wang, J., & **Liang, Y.***. (2025). Robust tracking via rethinking prediction head. *Image and Vision Computing*, 105780.
6. Li, N., Liu, A., Jiang, C., Tang, S., Li, Y., & **Liang, Y.***. (2025). Dual-teacher guided denoising distillation for anomaly detection. *IEEE Access*.
7. Jiang, Y., Qiang, S., Li, W., Huijia, Z., & **Liang, Y.***. (2025). OV-KFA: Open-vocabulary object detection via key feature alignment. *Neurocomputing*, 131790. (JCR Q1)
8. Huang, Y., Han, T., Zhao, H., **Liang, Y.**, Wan, J., Escalera, S., & Zheng, H. (2025). Simulating Marine Snow Images: Pipeline, Data Set, and Benchmark. *IEEE Journal of Oceanic Engineering*. (JCR Q1)
9. Qiang, S., Li, X., **Liang, Y.***, et al (2025). Open-vocabulary object detection via Neighboring Region Attention Alignment. *Engineering Applications of Artificial Intelligence*. (CCF-C)
10. Yang, L., Liu, C., Zhu, Z., Liu, A., Ma, H., Nong, J., & **Liang, Y.*** (2025). Not all frame features are equal: Video-to-4d generation via decoupling dynamic-static features. *ICCV*. (CCF-A)
11. Jiang, Y., Qiang, S., Li, W., & **Liang, Y.*** (2025). LLM-DiffAug: Enhancing Few-Shot Object Detection via LLM-Guided Diffusion Augmentation. *Knowledge-Based Systems*. (CCF-C)
12. Zhou, M., Mu, X., & **Liang, Y.*** (2025). SOE: A Multi-Objective Traffic Scheduling Engine for DDoS Mitigation with Isolation-Aware Optimization. *Mathematics*, 13(11), 1853. (JCR Q1)
13. Liang, H., Zheng, H., Wang, H., He, L., Lin, H., & **Liang, Y.*** (2025). Exploring Flatter Loss Landscape Surface via Sharpness-Aware Minimization with Linear Mode Connectivity. *Mathematics*, 13(8), 1259. (JCR Q1)
14. Qiang, S., & **Liang, Y.*** (2025). FeTT: Class-Incremental Learning with Feature Transformation Tuning. *Mathematics*, 13(7), 1095. (JCR Q1)

15. Li, N., Liu, A., Zhu, Z., Lin, X., Ma, H., Dai, H. N., & **Liang, Y.*** (2025). Knowledge Distillation-based Anomaly Detection via Adaptive Discrepancy Optimization. *IEEE Transactions on Industrial Informatics*. (CCF-C)
16. Qiang, S., Yu, X., **Liang, Y.***, Wan, J., & Zhang, D. (2025). Collaborative Adapter Experts for Class-Incremental Learning. *IEEE Signal Processing Letters*. (CCF-C)
17. Chen, Z., Zhou, B., Huang, Y., Wan, J., Hu, Y., Shi, H., **Liang, Y.**, Zhang, D. (2025). C 2 RL: Content and Context Representation Learning for Gloss-free Sign Language Translation and Retrieval. *IEEE Transactions on Circuits and Systems for Video Technology*. (CCF-B)
18. Yu, X., Li, J., Wong, C., Vong, C., **Liang Y.***. (2025). FACNet: Feature Alignment Fast Point Cloud Completion Network. *Computational Visual Media*. (JCR Q1)
19. Zheng, H., Lin, X., Liang, H., Zhou, B., **Liang Y.***. (2024). Region-aware mutual relational knowledge distillation for semantic segmentation. *Pattern Recognition*. (CAA-A, CCF-B)
20. Han, T., ..., **Liang, Y.**, Zhang, D., & Wan, J. (2024). PMMTalk \$: \$ Speech-Driven 3D Facial Animation from Complementary Pseudo Multi-modal Features. *IEEE Transactions on Multimedia*. (CCF-B)
21. Qiang, S., Xiong, Z, **Liang, Y.***, Wan, J., & Zhang, D. (2024, October). Adapt and Refine: A Few-Shot Class-Incremental Learner via Pre-Trained Models. In Chinese Conference on Pattern Recognition and Computer Vision (*PRCV*) (CCF-C).
22. Zheng, H., Lin, X., Liang, H., Zhou, B., & **Liang, Y.*** (2025). Region-aware Mutual Relational Knowledge Distillation for Semantic Segmentation. *Pattern Recognition*. (CAA-A, CCF-B).
23. Ma, H., Hu, T., Pu, Z., Liu, B., Ai, X., **Liang, Y.**, & Chen, M. (2024). Coevolving with the Other You: Fine-Tuning LLM with Sequential Cooperative Multi-Agent Reinforcement Learning. *NeurIPS 2024*. (CCF-A)
24. Wang, X., Wang, S., **Liang, Y.***, Lei Z., (2024). Decisive Vector Guided Column Annotation, *Pattern Recognition*. (CAA-A, CCF-B)
25. Liu, A., Ma, H., ... & **Liang, Y.*** et al, (2024). FM-CLIP: Flexible Modal CLIP for Face Anti-Spoofing, *ACM MM*. (CCF-A)
26. Liao, W., Qiang, S., Li, X., Chen, X., Wang, H., **Liang, Y.**, ... & Peng, P. CalibrBEV: Multi-Camera Calibration via Reversed Bird's-eye-view Representations for Autonomous Driving. *ACM MM*. (CCF-A).
27. Qiang, S., Xiong, Z., **Liang, Y.***, Wan, J., & Zhang, D. (2024). Adapt and Refine: A Few-Shot Class-Incremental Learner via Pre-Trained Models. In Chinese Conference on Pattern Recognition and Computer Vision (*PRCV*) (CCF-C)
28. Zhou, M., Lin, X., & **Liang, Y.*** (2024). Agile Optimization Framework: A framework for tensor operator optimization in neural network. *Future Generation Computer Systems*. (JCR Q1)
29. Liu, A., Xue, S., Gan, J., **Wan, J.***, **Liang, Y.***, Deng, J., ... & Lei, Z. (2024). CFPL-FAS: Class Free Prompt Learning for Generalizable Face Anti-spoofing. *CVPR 2024*. (CCF-A)
30. Wang, K., Zhang, G., Yue, H., **Liang, Y.**, Huang, M., Zhang, G., ... & Wang, J. (2024). CSDG-FAS: Closed-Space Domain Generalization for Face Anti-spoofing. *International Journal of Computer Vision*, 1-14. (CCF-A)
31. Nong, J., He, X., Chen, J., & **Liang, Y.***. (2024). Efficient Parallel Processing of R-Tree on GPUs. *Mathematics*, 12(13), 2115. (JCR Q1)
32. Feng, Q., Nong, J., & **Liang, Y.***. (2024). EdgePose: An Edge Attention Network for 6D Pose Estimation. *Mathematics*, 12(17), 2607. (JCR Q1)
33. Ji, X., Sun, Z., Lv, H., Yu, X., Tang, S., Zhang, D., & **Liang, Y.*** (2024). Spatio-temporal multivariable time vario-zoom network for water level forecasting based on high-resolution hydrological dataset. *Journal of Hydrology*, 634, 131060. (JCR Q1)
34. Liu, A., Tan, Z., **Liang, Y.**, & Wan, J. (2023). Attack-agnostic deep face anti-spoofing. *CVPR workshop 2023*.
35. Zhu, Z., Yang, L., Li, N., Jiang, C., & **Liang, Y.***. (2023). UMIFormer: Mining the Correlations between Similar Tokens for Multi-View 3D Reconstruction. *ICCV 2023*. (CCF-A)
36. Yang, L., Zhu, Z., Lin, X., Nong, J., & **Liang, Y.***. (2023). Long-Range Grouping Transformer for Multi-View 3D Reconstruction. *ICCV 2023*. (CCF-A)
37. Zhou, B., Chen, Z, Albert, C., Wan, J., **Liang, Y.**, Sergio, E., Lei, Z., Zhang, D., Gloss-free Sign Language Translation: Improving from Visual-Language Pretraining, *ICCV 2023*. (CCF-A)
38. Zhu, Z., Yang, L., Lin, X., Yang, L., & **Liang, Y.***. (2023). GARNet: Global-aware multi-view 3D reconstruction network and the cost-performance tradeoff. *Pattern Recognition*, 142, 109674. (CAA-A, CCF-B)
39. Tang, S., Cheang, C. F., Yu, X., **Liang, Y.**, Feng, Q., & Chen, Z. (2023). TransCS-Net: A hybrid transformer-based privacy-protecting network using compressed sensing for medical image segmentation. *Biomedical Signal Processing and Control*, 86, 105131. (JCR Q1)
40. Ji, X., Hu, W., & **Liang, Y.***. (2023). Hierarchical and Bidirectional Joint Multi-Task Classifiers for Natural Language Understanding. *Mathematics*, 11(24), 4895. (JCR Q1)
41. Lin, X., & **Liang, Y.***. (2023). Region-Aware Deep Feature-Fused Network for Robust Facial Landmark Localization. *Mathematics*, 11(19), 4026. (JCR Q1)

42. Liu, A., Tan, Z., Yu, Z., Zhao, C., Wan, J., **Liang, Y.**, Lei, Z., Zhang, D., Li, S.Z. and Guo, G., (2023). FM-ViT: Flexible Modal Vision Transformers for Face Anti-Spoofing. *IEEE Transactions on Information Forensics and Security*. (CCF-A)
43. Liu, B., Pu, Z., Pan, Y., Yi, J., **Liang, Y.**, & Zhang, D. (2023). Lazy Agents: A New Perspective on Solving Sparse Reward Problem in Multi-agent Reinforcement Learning, *ICML 2023*. (CCF-A)
44. Zhou, B., Wang, P., Wan, J., **Liang, Y.**, & Wang, F. (2023). A Unified Multimodal De-and Re-Coupling Framework for RGB-D Motion Recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence*. (CAA-A, CCF-A)
45. Lin, X., Gan, J., Jiang, C., Xue, S., & **Liang, Y.*** (2023). Wi-Fi-Based Indoor Localization and Navigation: A Robot-Aided Hybrid Deep Learning Approach. *Sensors*, 23(14), 6320.
46. Zhang, T., Liu, Z., Pu, Z., Yi, J., **Liang, Y.**, & Zhang, D. (2023). Robot Subgoal-guided Navigation in Dynamic Crowded Environments with Hierarchical Deep Reinforcement Learning. *International Journal of Control, Automation and Systems*, 1-13.
47. Tang, S., Yu, X., Cheang, C. F., **Liang, Y.**, Zhao, P., Yu, H. H., & Choi, I. C. (2023). Transformer-based multi-task learning for classification and segmentation of gastrointestinal tract endoscopic images. *Computers in Biology and Medicine*, 157, 106723. (JCR Q1)
48. Lin, X., Zheng, H., Zhao, P., & **Liang, Y.***. (2023). SD-HRNet: Slimming and Distilling High-Resolution Network for Efficient Face Alignment. *Sensors*, 23(3), 1532.
49. Qiang, S., Hou, J., **Wan, J.***, **Liang, Y.***, Lei, Z., & Zhang, D. (2023). Mixture Uniform Distribution Modeling and Asymmetric Mix Distillation for Class Incremental Learning. *AAAI23*. (CCF-A)
50. Zhao, P., Zheng, H., Tang, S., Chen, Z., & **Liang, Y.*** (2022). DAMNet: A Dual Adjacent Indexing and Multi-Deraining Network for Real-Time Image Deraining. *Fractal and Fractional*, 7(1), 24. (JCR Q1)
51. Liu, A., Wan, J., Jiang, N., Wang, H., & **Liang, Y.*** (2022, August). Disentangling Facial Pose and Appearance Information for Face Anti-spoofing. *ICPR 2022*. (CCF-C)
52. Zhao, P., Yu, X., Chen, Z., & **Liang, Y.*** (2022). A Real-Time Ship Detector via a Common Camera. *Journal of Marine Science and Engineering*, 10(8), 1043. (JCR Q1)
53. Ajian Liu, Chenxu Zhao, Zitong Yu, Jun Wan, Anyang Su, Xing Liu, Zichang Tan, Sergio Escalera, Junliang Xing, **Yanyan Liang**, Guodong Guo, Zhen Lei, Stan Z. Li, Du Zhang (2022). Contrastive context-aware learning for 3d high-fidelity mask face presentation attack detection. *IEEE Transactions on Information Forensics and Security*, 17, 2497-2507. (CCF-A)
54. Yu, X., **Liang, Y.***, Lin, X., Wan, J., Wang, T., & Dai, H. N. (2022). Frequency Feature Pyramid Network With Global-Local Consistency Loss for Crowd-and-Vehicle Counting in Congested Scenes. *IEEE Transactions on Intelligent Transportation Systems*, 23(7), 9654-9664. (CAA-A, CCF-B)
55. Wang, X., Wang, S., **Liang, Y.***, Gu, L., & Lei, Z. (2022). Rvface: Reliable vector guided softmax loss for face recognition. *IEEE Transactions on Image Processing*, 31, 2337-2351. (CCF-A)
56. Liu A., **Liang Y.***, (2022) MA-ViT: Modality-Agnostic Vision Transformers for Face Anti-Spoofing, *IJCAI*. (CCF-A)
57. Lin, X., Zhu, Z., Yu, X., Ji, X., Luo, T., Xi, X., ... & **Liang, Y.***. (2022). Lunar Crater Detection on Digital Elevation Model: A Complete Workflow Using Deep Learning and Its Application. *Remote Sensing*, 14(3), 621. (JCR Q1)
58. Zhou, B., Wang, P., Wan, J., **Liang, Y.**, Wang, F., Zhang, D., ... & Jin, R. (2022). Decoupling and recoupling spatiotemporal representation for RGB-D-based motion recognition. *CVPR 2022*. (CCF-A)
59. Luo, T., **Liang, Y. Y***, Ip, W. H., Huang, H. Z., & Lin, X. X. (2021). A study of the global magnetic activity of the star Kepler-17 using light curve inversion with bipartite regularization. *Research in Astronomy and Astrophysics*, 21(4), 089.
60. Zhou, B., Wan, J., **Liang, Y.**, & Guo, G. (2021). Adaptive cross-fusion learning for multi-modal gesture recognition. *Virtual Reality & Intelligent Hardware*, 3(3), 235-247..
61. Liu, A., Tan, Z., **Wan, J.***, **Liang, Y.***, Lei, Z., Guo, G., & Li, S. Z. (2021). Face anti-spoofing via adversarial cross-modality translation. *IEEE Transactions on Information Forensics and Security*, 16, 2759-2772. (CCF-A)
62. Liu, A., Li, X., Wan, J., **Liang, Y.**, Escalera, S., Escalante, H. J., ... & Li, S. Z. (2021). Cross-ethnicity face anti-spoofing recognition challenge: A review. *IET Biometrics*, 10(1), 24-43.
63. Zhang, S., Liu, A., Wan, J., **Liang, Y.**, Guo, G., Escalera, S., ... & Li, S. Z. (2020). Casia-surf: A large-scale multi-modal benchmark for face anti-spoofing. *IEEE Transactions on Biometrics, Behavior, and Identity Science*, 2(2), 182-193.
64. Huang, H., & **Liang, Y.*** (2020). Constrained Loss Function for Classification Problems. In *Advances in Computer Vision: Proceedings of the 2019 Computer Vision Conference (CVC)*, Volume 2 1 (pp. 526-535). Springer International Publishing.
65. Zhao, R., Liu, A., **Liang, Y.***, & Huang, H. (2019, July). Person Re-Identification via Feature Representation Learning Based on Verification Sample Constrain. In *2019 International Conference on Machine Learning and*

- Cybernetics (*ICMLC*) (pp. 1-7). IEEE.
66. Lin, C., Lin, X., Xie, Y., & **Liang, Y.*** (2019). Abnormal gesture recognition based on multi-model fusion strategy. *Machine Vision and Applications*, 30(5), 889-900. (CCF-C)
 67. Lin, X., Wan, J., Xie, Y., Zhang, S., Lin, C., **Liang, Y.***, ... & Li, S. Z. (2019). Task-oriented feature-fused network with multivariate dataset for joint face analysis. *IEEE Transactions on Cybernetics*, 50(3), 1292-1305. (CAA-A, CCF-B)
 68. Luo, T., **Liang, Y.***, & Wing-Huen, I. P. (2019). Efficient Starspot Reconstruction via Light-curve Inversion with Bipartite Regularization. *The Astronomical Journal*, 157(6), 238. (JCR Q1)
 69. Lin, X., **Liang, Y.***, Wan, J., Lin, C., & Li, S. Z. (2019). Region-based context enhanced network for robust multiple face alignment. *IEEE Transactions on Multimedia*, 21(12), 3053-3067. (CCF-A)
 70. Huang, H., & **Liang, Y.*** (2019). Learning Robust Embedding Representation With Hybrid Loss for Classification and Verification. *IEEE Access*, 7, 13643-13652.
 71. Lin, C., Wan, J., **Liang, Y.**, & Li, S. Z. (2018, May). Large-scale isolated gesture recognition using a refined fused model based on masked res-c3d network and skeleton lstm. In 2018 13th IEEE international conference on automatic face & gesture recognition (*FG 2018*) (pp. 52-58). IEEE. (CCF-C)
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