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Academic Qualification

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

M.S. 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, Machine Learning, Deep Learning

Computer Vision, Image Processing, Pattern Recognition

Data Mining (Temporal Data Mining, Graph Data Mining)

Computer Architecture, AI Chips for big data and Machine Learning

Working Experience

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

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

2020-Present, Associate Professor, in Faculty of Information Technology, Macau University of Science and Technology.

Academic Publication

(* **corresponding author** 通訊作者)

1. Zhu, Z., Yang, L., ... & **Liang, Y***. (2023). UMIFormer: Mining the Correlations between Similar Tokens for Multi-View 3D Reconstruction. ICCV 2023. **(CCF-A)**

2. Yang, L., Zhu, Z., ... & **Liang, Y***. (2023). Long-Range Grouping Transformer for Multi-View 3D Reconstruction. ICCV 2023. **(CCF-A)**

3. 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)**

4. 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. **(CCF-B)**

5. 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)**
6. 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.
7. 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)**
8. 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.
9. 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)**
10. 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)**
11. Liu, A., Wan, J., Jiang, N., Wang, H., & **Liang, Y.*** (2022, August). Disentangling Facial Pose and Appearance Information for Face Anti-spoofing. In 2022 26th International Conference on Pattern Recognition (ICPR) (pp. 4537-4543). *IEEE*. **(CCF-C)**
12. 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)**
13. 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)**
14. 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)**
15. 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)**
16. Ajian Liu, **Yanyan Liang***, MA-ViT: Modality-Agnostic Vision Transformers for Face Anti-Spoofing, *IJCAI*, 2022. **(CCF-A)**
17. 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)**
18. 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. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR2022)* (pp. 20154-20163). **(CCF-A)**
19. Luo, T., **Liang, 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.
20. 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..
21. 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)**

22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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)**
28. 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.
29. 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)**
30. Huang, H., & **Liang, Y.*** (2019). Learning Robust Embedding Representation With Hybrid Loss for Classification and Verification. *IEEE Access*, 7, 13643-13652.
31. 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)**
32. Huang, H., **Liang, Y.***, Tsoi, A. C., Lo, S. L., & Leung, A. P. (2016, December). A novel bagged particle filter for object tracking. In *Proceedings of the 15th ACM SIGGRAPH Conference on Virtual-Reality Continuum and Its Applications in Industry-Volume 1* (pp. 331-338).
33. Zhou, S., **Liang, Y.**, Wan, J., & Li, S. Z. (2016, September). Facial expression recognition based on multi-scale cnns. In *Biometric Recognition: 11th Chinese Conference, CCBR 2016, Chengdu, China, October 14-16, 2016, Proceedings* (pp. 503-510). Cham: Springer International Publishing.
34. 黃靜, 梁延研, 蔡占川, 方樺, 唐澤聖. 基于嫦娥一號探月數據虛擬月球立體顯示系統. *計算機工程與設計*. 2015, 36(1): 236-240.
35. Jun Wan, Qiuqi Ruan, Gaoyun An, Wei Li, **Yanyan Liang**, Ruizhen Zhao. The Dynamic Model Embed in Augmented Graph Cuts for Robust Hand Tracking and Segmentation in Videos. *Mathematical Problems in Engineering*, 2014:1-12.
36. **Yanyan Liang**, Zhanchuan Cai, Dongxu Qi, Zesheng Tang. Scale-Invariant V-Transform and Its Application to Signal Denoising. *International Journal of Wavelets, Multiresolution and Information Processing*. 2013, 11(05): 106-118.
37. Un-Hong Wong, Yunzhao Wu, Hon-Cheng Wong, **Yanyan Liang**, Zesheng Tang. Modeling the Reflectance of the Lunar Regolith by a New Method Combining Monte Carlo Ray Tracing and Hapke's Model with Application to Chang'E-1 IIM Data. *The Scientific World Journal*, 2014.
38. 梁延研, 蔡占川, 李堅, 齊東旭, 唐澤聖. 尺度不變V變換及其應用, *計算機學報*. 2013, 22(5):610-618. **(CCF-A)**

39. Mengjie Ye, Jian Li, **Yanyan Liang**, Zhanchuan Cai, Zesheng Tang. Automatic seamless stitching method for CCD images of Chang'E-1 lunar mission. *Journal of Earth Science*, 2011, 22: 610-618.
40. 蔡占川, 鄭才目, 黃靜, **梁延研**. 基于混合型多結點樣條插值曲面的圖像放大方法. *中山大學學報 (自然科學版)*, 2011, 50(2):16-19,24.
41. Zhanchuan Cai, Caimu Zheng, **Yanyan Liang**, Zesheng Tang. Spatial Autocorrelation Analysis for some Lunar Craters Based on Chang'E-1 LAM Data, *Proceedings of International Symposium on Lunar Science (ISLS2010)*, 25-26 March, Macao.
42. 蔡占川, **梁延研**, 李堅, 唐澤聖, 齊東旭. 基于嫦娥一號衛星激光測高數據的月球數字高程模型, *地球物理學進展*, 2010, 25(4): 1153-1160.
43. 鐘健瑜, **梁延研**, 劉曄. 一種新的基于Slantlet變換的心電信號消噪算法. *系統仿真學報*, 2009, 21(20): 6573-6576. **(CCF-B)**
44. 李堅, 宋瑞霞, 葉夢杰, **梁延研**, 齊東旭. 基于三角域上V-系統的三維幾何模型的正交重構, *計算機學報*, 2009, 32(2): 193-202. **(CCF-A)**
45. 李堅, 宋瑞霞, 葉夢杰, **梁延研**, 齊東旭. V-系統與幾何群組信息的頻域表達, *軟件學報*, 2008, 19, 增刊: 41-51. **(CCF-A)**
46. 葉夢杰, 李堅, **梁延研**, 唐澤聖. 基于描述子的細分曲面方法的分析研究, *澳門科技大學學報*, 2008, 2(2): 15-22.
47. **梁延研**, 李堅, 葉夢杰, 蔡占川. 參數曲面群組模型的正交表達及多分辨率編輯, *澳門科技大學學報* · 2008, 2(1): 1-7.
48. 葉夢杰, 李堅, **梁延研**, 唐澤聖. 澳門文物三維模型的正交V-系統表示, *澳門科技大學學報*, 2008, 2(1): 1-10.
49. Xiaochun Wang, **Yanyan Liang**, Hui Ma, Ruixia Song. Applications of Complete Orthogonal V-system with Multiresolution Property, *Proceedings of IEEE 10th International Conference on Computer-Aided Design and Computer Graphics (CAD/Graphics 2007)*, October 14-17, Beijing, China. IEEE Computer Society, 2007: 25-35.
50. Ruixia Song, **Yanyan Liang**, Xiaochun Wang, Dongxu Qi. Elimination of Gibbs phenomenon in Computational Information based on the V-system, *Proceedings of 2nd International Conference on Pervasive Computing and its Application (ICPCA07)*, 26-27, July 2007, Birmingham, England. UK. IEEE Computer Society, 2007: 611-615.
51. Xiaochun Wang, **Yanyan Liang**, Meifang Ou, Ruixia Song. Application of Complete Orthogonal V-system, *Proceedings of the 2008 International Congress on Image and Signal Processing (CISP 2008)*, May 27-30, Sanya, Hainan, China. IEEE Computer Society, 2007: 694-698.
52. **梁延研**, 宋瑞霞, 王小春, 齊東旭, 完備正交V-系統及其在幾何信息重構中的應用, *計算機輔助設計與圖形學學報*, 2007, 19(7): 871-875. **(CCF-A)**
53. **梁延研**, 宋瑞霞, 齊東旭, 完備正交V-系統與點雲數據擬合. *系統仿真學報*, 2006, 18(8): 2109-2113. **(CCF-B)**
54. **Yanyan Liang**, Ruixia Song, Dongxu Qi. Surface Smoothing from Noisy Point Data Based on V-system, *Proceedings of 2nd China-Korea Joint Conference on Geometric and Visual Computing*, Hangzhou, China, 2006: 82-86.

Awards

The team formed by Dongxu Qi, Zhanchuan Cai, Yanyan Liang, Jian Li and KinTak U obtained the 3rd prize of 2012 "Natural Science Award" from Science and Technology Development Fund, MSAR (FDCT) with the topic of "Theory on Non-continuous Orthogonal Function and its application on the massive data processing".
BOC Research Excellence Award (2023)

Professional Society Membership

IEEE Member (2019 - Present)