Personal Profile

PROF. Lihui Wang

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Introduction

Prof. Lihui Wang, obtained her doctor degree from Institute National des Sciences Appliquées de Lyon (INSA-LYON) in France, in 2013. Since then, she begun to work in Guizhou University as an introduced talent from abroad. At present, she is the executive deputy director of Key Laboratory of Intelligent Medical Image Analysis and Precise Diagnosis of Guizhou Province, as well as a professor at College of Computer Science and Technology of Guizhou University.

Her current research interests include medical imaging, multimodal magnetic resonance imaging simulation, medical image segmentation, registration, super-resolution reconstruction, denoising, fusion, Radiomics and deep learning, etc. She has published more than 60 peer-reviewed journal and conference papers, including the reputational journals, such as Medical image analysis, IEEE Trans on Biomedical Engineering, Frontiers in Neuroscience, Frontiers in Oncology, EBioMedicine and IEEE Sensors Journal, etc.

Prof. Wang has rich experience in the international cooperation and has established close cooperative relations with French INSA Lyon, Institute of automation, Chinese Academy of Sciences, Beijing Jiaotong University, Shanghai Jiaotong University, The People's Hospital of Guizhou Province and other enterprises and research centers.

Area of Expertise

Machine learning, Deep learning, Medical imaging, medical image processing, computer vision, Modeling and simulation.

Publications

1. **Wang, Lihui**, Yao Hong, Yong-Bin Qin, Xin-Yu Cheng, Feng Yang, Jie Yang, and Yue-Min Zhu. "Connecting macroscopic diffusion metrics of cardiac diffusion tensor imaging and microscopic myocardial structures based on simulation." *Medical Image Analysis*, 77 (2022): 102325.

2. He, Junjie, **Lihui Wang***, Ying Cao, Rongpin Wang, and Yuemin Zhu. "Learn Less, Infer More: Learning in the Fourier Domain for Quantitative Susceptibility Mapping." *Frontiers in Neuroscience*, 16 (2022).
3. Guo, Shunchao, **Lihui Wang*,** Qijian Chen, J. Zhang, and Y. Zhu. "Multimodal MRI Image Decision Fusion-Based Network for Glioma Classification." *Frontiers in Oncology* 12 (2022): 819673-819673.
4. Huang, Jiqing, **Lihui Wang***, Jin Qin, Yi Chen, Xinyu Cheng, and Yuemin Zhu. "Super-Resolution of Intravoxel Incoherent Motion Imaging Based on Multisimilarity." *IEEE Sensors Journal* 20, no. 18 (2020): 10963-10973.
5. Sun, C., Tian, X., Liu, Z., Li, W., Li, P., Chen, J., Zhang, W., Fang, Z., Du, P., Duan, H. and Liu, P., **Wang L.H****, Tian, J. 2019. Radiomic analysis for pretreatment prediction of response to neoadjuvant chemotherapy in locally advanced cervical cancer: A multicentre study. *EBioMedicine*, *46*, pp.160-169.
6. Huang, Jiqing, Jin Qin, **Lihui Wang,** Rongpin Wang, Zi-Xiang Kuai, Chen Ye, Tianye Wang, and Yuemin Zhu. "CNN based Super-Resolution of Intravoxel Incoherent Motion Imaging for Liver." In *2019 ISMRM*. 2019.
7. Wang, Sifangyuan, **Lihui Wang*,** Jian Zhang, Rongpin Wang, Xinfeng Liu, and Yuemin Zhu. "Quantitative Comparison of Multiple High Angular Resolution Diffusion Imaging Techniques for Myocardium." In *2018 Joint Annual Meeting ISMRM-ESMRMB*. 2018.
8. **Wang, L.**, F. Yang, G. Michalowicz, Y. Usson, P. Jouk, R. Wang, and Yue-Min Zhu. "Investigation of Myocardial Fiber Crossings in the Human Heart Using Realistic HARDI Simulation Based on PLI." In *2018 Joint Annual Meeting ISMRM-ESMRMB*. 2018.
9. Liu, Bin, **Lihui Wang***, Jian Zhang, Xinyu Cheng, Feng Yang, Jianping Huang, and Yuemin Zhu. "Cardiac diffusion tensor imaging simulation based on deep convolutional generative adversarial network." In *2018 14th IEEE International Conference on Signal Processing (ICSP)*, pp. 1189-1193. IEEE, 2018.
10. Wei, Jiaxu, **Lihui Wang***, Jian Zhang, Hongjiang Wei, Yuyao Zhang, Xinyu Cheng, Zhi Li, Feng Yang, and Yuemin Zhu. "Quantitative Susceptibility Mapping for Drug-Addicted Human Brain." In *2018 14th IEEE International Conference on Signal Processing (ICSP)*, pp. 1184-1188. IEEE, 2018.

Research Projects

[1] National Natural Science Foundation of China, “Investigation on the neural mechanism and image biomarkers of drug addiction based on deep learning”, 2022.01-2025.12.

[2] National Natural Science Foundation of China, “Modeling and simulation algorithm of multimodal myocardial fiber magnetic resonance diffusion imaging based on cloud platform”，2017.01-2021.12.

[3] Key Science and Technology project in Guizhou Province, “Investigation on mechanism of drug addiction based on multimodal deep learning -based radiomics，2021.01-2024.12.

[4] Science and technology project in Guizhou Province, Key Laboratory of Intelligent Medical Image Analysis and Precise Diagnosis of Guizhou Province, 2017.10-2020.10.

[5] Sino-French Cai Yuanpei Programme, “Deep learning for realistic simulation of dynamic in vivo DTI of the human heart”, 2018-2020.

Patent/ IPR

1. An unsupervised multimodal image registration method based on integrated attention enhancement, 202011101564.6.
2. A classification and visualization method for glioma based on invariant features, 202011107532.7.
3. A skull image segmentation method based on depth iterative fusion and depth learning model, 202011125749.0.
4. End to end brain MRI image registration method based on convolutional neural network, 202011207170.9.
5. Diffusion weighted image compressed sensing restoration method and device based on Countermeasure network, 202011451621.3.

EXPERT LINKAGES

2019-2020，Visiting professor of INSA de Lyon

2018-2019，Visiting professor of INSA de Lyon

Social Responsibility Activities

1. 2021.10，Cochair of the 2nd Sino-French Workshop for Medical Image Analysis and Artificial Intelligence
2. 2020.08，Invited speaker for the 1st "Medical imaging AI: basic training course"
3. 2016.10，Hosted the 1st " International Workshop on Medical Imaging Big Data"
4. 2018.10，Hosted the 2nd " International Workshop on Medical Imaging Big Data"
5. 2018.08，Cochair of the 14th IEEE International Conference on Signal Processing.
6. 2020.08，Cochair of the 15th IEEE International Conference on Signal Processing.