

CURRICULUM VITAE

Yali Huang, Ph.D.

Post-doctoral fellow

The USC Mary and Mark Stevens Neuroimaging and Informatics Institute

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Education

09/2010-06/2015 *Ph.D.*, majored in Electronic Engineering,
Beijing Institute of Technology, Beijing, China.

09/2002-06/2005 *M.S.*, majored in Biomedical Engineering,
Hebei University, China.

09/1998-06/2002 *B.S.*, majored in Electronic Engineering,
Hebei University, China.

Research Experience

07/2025 - now Post-doctoral research scientist
University of Southern California, Los angles, CA, USA.
Research areas: Medical image analysis; brain development and brain disease based on fMRI and dMRI techniques.

03/2023-05/2025 Post-doctoral research scientist
University of Arkansas for medical sciences, Little Rock, USA.
Research areas: Medical image analysis; infant and children's brain development based on fMRI and dMRI techniques.

06/2021-02/2023 Senior research scientist
Chinese Institute for Brain Research, Beijing, China.
Research areas: Medial image analysis; youth brain development and disease based on fMRI, dMRI, and SEEG techniques.

12/2016-02/2018 Visiting post-doctoral fellow
Vanderbilt University Institute of Imaging Science, Nashville, TN, USA.
Research areas: fMRI white matter signals and exploring their relevance to human brain function.

09/2010-06/2015 Ph. D. candidate
Beijing Institute of Technology, Beijing, China.
Research areas: Medical image analysis; feature extraction; cell morphology analysis; object tracking; pattern recognition; multi-scale geometric analysis; active contour model (snakes); optical flow; machine learning.
Dissertation: Quantitative Analysis of Lymphocyte Morphological Changes Based on Microscopic images
Advisor: Professor Zhiwen Liu

Lecturer
College of Electronics and information, Hebei University, China.
Teaching courses: Fundamentals of Digital Circuits; Fundamentals of Analog Circuits.
Research areas: Medical image analysis; feature extraction; pattern recognition; Wavelet transformation; machine learning; MRI; neuroimaging

Master's Studies and Research
College of Electronics and information, Hebei University, China.
Teaching courses: Fundamentals of Digital Circuits; Fundamentals of Analog Circuits.
Research areas: Medical image analysis; image enhancement; feature extraction; texture analysis; pattern recognition; Wavelet transformation; time frequency analysis.
Thesis: Liver Ultrasound Image Recognition Based on Texture Analysis and Probabilistic Neural Network
Advisor: Professor Fenhua Li

Publications.

Journal Articles

- [1] **Yali Huang**, T.R. Kosci, A. Andres, J. Bellando, C.M. Glasier, A. Ram, X. Ou. Relationships Between Body Composition and Mental Health During Pregnancy Are Moderated by Physical Activity and Diet. *J. Clin. Psychiatry*, 2025.
- [2] **Yali Huang**, T.R. Kosci, A. Andres, J. Bellando, C.M. Glasier, A. Ram, X. Ou. Brain White Matter Development in 8-year-old Children Is Associated with Maternal Mental Health during Pregnancy. *Front. Hum. Neurosci.*, 19:1603022, 2025.
- [3] **Yali Huang**, Glasier CM, Na X and Ou X. White matter functional networks in the developing brain. *Front. Neurosci.* 18:1467446. 2024
- [4] **Yali Huang**, Penghu Wei, Longzhou Xu, Desheng Chen, Yanfen Yang, Wenkai Song, Yangyang Yi, Xiaoli Jia, Guowei Wu, Qingchen Fan, Zaixu Cui, Guoguang Zhao. Intracranial electrophysiological and structural basis of BOLD functional connectivity in human brain white matter. *Nature Communication*, 2023, **14**, 3414.
- [5] **Yali Huang**, Yang Yang, Lei Hao, Xuefang Hu, Peiguang Wang, Zhaohua Ding, Jiahong Gao, John Gore. Detection of Functional Networks within White Matter Using Independent Component Analysis. *NeuroImage*, 2020, 117278.
- [6] **Yali Huang**, Xuefang Hu, Lei Hao, Yuehua Gao, Zhiwen Liu, Peiguang Wang. Quantitative Analysis of Cell Morphology Based on the Contourlet Transform. *IET Image Processing*, 2020, 14: 2826-2832.
- [7] John C. Gore, Muwei Li, Yurui Gao, Tung-Lin Wu, Kurt G. Schilling, **Yali Huang**, Arabinda Mishra, Allen T. Newton, Baxter P. Rogers, Li Min Chen, Adam W. Anderson, Zhaohua Ding. Functional MRI and resting state connectivity in white matter - a mini-review. *Magnetic Resonance Imaging*, Volume 63, 2019, Pages 1-11.
- [8] **Yali Huang**, S.K. Bailey, P. Wang, L.E. Cutting, J.C. Gore, Zhaohua Ding, Voxel-wise detection of functional networks in white matter, *NeuroImage*, 183 (2018) 544-552.
- [9] Zhaohua Ding, **Yali Huang**, S.K. Bailey, Y. Gao, L.E. Cutting, B.P. Rogers, A.T. Newton, J.C. Gore, Detection of synchronous brain activity in white matter tracts at rest and under functional loading, *Proceedings of the National Academy of Sciences*, 115 (2018) 595-600.
- [10] **Yali Huang**, Lei Hao, H. Li, Z. Liu, P. Wang, Quantitative Analysis of Intracellular Motility Based on Optical Flow Model, *Journal of Healthcare Engineering*, 2017.
- [11] **Yali Huang**, Zhiwen Liu, Yonggang Shi. Quantitative analysis of live lymphocyte morphology and intracellular motion in microscopic images. *Biomedical Signal Processing and Control*, 2015, 18: 195-203.

- [12] **Yali Huang**, Zhiwen Liu. Segmentation and Tracking of Lymphocytes Based on Modified Active Contour Models in Phase Contrast Microscopy Images. *Computational and Mathematical Methods in Medicine*, 2015, Article ID 693484.
- [13] Heng Li, Zhiwen Liu, **Yali Huang**, et al. Quaternion generic Fourier descriptor for color object recognition. *Pattern Recognition*, 2015, 48(12): 3895-3903.
- [14] **Yali Huang**, Zhiwen Liu, Zhen Zhao. Enhancement of Ultrasonic Liver Images Based on Multi-Scale Retinex Model. *Journal of Data Acquisition and Processing*, 2013, 28(05): 597-601. (in Chinese)
- [15] **Yali Huang**, Yuehua Gao, Hong Wang, Dongmei Hao, Jinhui Zhao, Zhen Zhao. Enhancement of Ultrasonic Image Based on the Multi-Scale Retinex Theory. *Recent Advances in Computer Science and Information Engineering*, 2012, 128: 115-120.
- [16] **Yali Huang**, Fenhua Li, RuiBo Zhang. Fatty liver ultrasonic image recognition based on wavelet transformation. *China Journal Medical Imaging Technology*, 2005, 21(11), 1761-1763. (in Chinese)
- [17] **Yali Huang**, Fenhua Li, Zhen Zhao. Experimental study of texture feature extraction methods of ultrasonic liver imaging. *China Journal Medical Imaging Technology*, 2004, 20(12), 1937-1939. (in Chinese)

Conference Papers

- [1] **Yali Huang** et al. Functional connectivity changes across the whole brain in newborns and children. OHBM, June, 2024.
- [2] **Yali Huang** et al. Association between fALFF of white matter and postmenstrual age in newborns. OHBM, June, 2024.
- [3] **Yali Huang** et al. Detection of Functional Activation in White Matter Based on Voxel-wise Frequency Analysis. The Sixth Biennial Conference on Resting State and Brain Connectivity, Quebec, Canada, 2018.
- [4] **Yali Huang** et al. Quantitative Analysis of Lymphocytes Morphology and Motion in Intravital Microscopic Images. *Proceedings of the 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2013, IEEE: 3686-3689.
- [5] **Yali Huang** et al. Texture analysis of ultrasonic liver images based on spatial domain methods. In *Proceedings of the 3rd International Congress on Image and Signal Processing*, 2010, pp. 562-565.
- [6] **Yali Huang** et al. Texture analysis of ultrasonic liver image based on wavelet transform and Probabilistic Neural Network. In *Proceedings of the International Conference on Biomedical Engineering and Informatics*, 2008, pp. 248-252.

Services

Reviewer for the journals: *NeuroImage*; *NeuroImage Clinical*; *Human Brain Mapping*; *Biomedical Signal Processing and Control*; *Brain Connectivity*; *Scientific Reports*; *Frontiers in Aging Neuroscience*; *Brain imaging and Behavior*; *Magnetic Resonance Imaging*.

Skills

- **Strong theoretical background in digital signal processing**, with expertise in time-, frequency-, and spatial-domain analysis of 2D, 3D, and 4D signals, including time-frequency techniques.
- **Comprehensive knowledge of classical machine learning algorithms**, including regression, classification, clustering, dimensionality reduction, support vector machines (SVM), and artificial neural networks.
- **Extensive experience in medical image analysis**, including image enhancement, segmentation, and tracking.
- **Extensive experience in MRI data analysis**, covering structural, functional, and diffusion MRI using high-performance computing (HPC) environments.
- **Proficient in deep learning concepts**, with practical experience implementing models using TensorFlow on HPC platforms.
- **Strong programming proficiency in MATLAB, Python, and R**, with a focus on medical image analysis.