

BIOENGINEERING SEMINAR

FALL 2021

Data-driven Neuroimaging Biomarkers to Advance Precision Medicine in Brain Disease

Abstract

With the rapid development of computer and imaging technologies, a huge amount of neural information has been continually produced worldwide and providing rich resources for the exploration of various applications. By exploiting these complex data including EEG and fMRI, artificial intelligence techniques have attracted increasing interests of researchers in the fields of healthcare and neural engineering. Exploring new theories and applications from the perspective of machine learning and artificial intelligence may bring unprecedented benefits to promote the development of neural engineering and personalized medicine. In this talk, I will present some of our recent work about neural pattern decoding and biomarker discovery by leveraging cutting-edge machine learning and data-driven techniques. The presentation topic will cover latent-space biomarker quantification, predictive modeling of brain networks, and unsupervised disease subtyping, for intelligent diagnosis and personalized treatment of brain disorders.

Biography

Dr. Yu Zhang is an Assistant Professor of Bioengineering at Lehigh University. He received postdoctoral training at the Wu Tsai Neurosciences Institute, Stanford University, and the Biomedical Research Imaging Center, University of North Carolina at Chapel Hill. In the past decade, he has been mainly working on data-driven neural pattern decoding and biomarker discovery using neuroimaging techniques for personalized medicine. He is the author of over 100 peer-reviewed papers that have been published in prestigious journals and conferences, such as Nature Biomedical Engineering, Nature Human Behaviour, Nature Biotechnology, Proceedings of the IEEE, IEEE Trans. Cybernetics, IEEE Trans. Neural Netw. Learn. Syst., IEEE Trans. Neural Syst. Rehabil. Eng., IEEE Trans. Biomed. Eng., Pattern Recognition, AAAI, MICCAI, and ICASSP. He is an IEEE Senior Member and serving as Associate Editor for Journals including Frontiers in Neuroscience, Network Modeling Analysis in Health Informatics and Bioinformatics, Frontiers in Computational Neuroscience, Brain-Computer Interfaces. He also served as the PC member for international conferences, such as IJCAI and MICCAI. His research interests include computational neuroscience, brain network, machine learning, signal processing, brain-computer interface, medical imaging computing.



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**Thursday, November 4
12:00-1:00 pm**

Join Zoom Meeting

<https://gmu.zoom.us/j/9100178853?pwd=enZXRXFneG1zdk5NN1VM5WtnQlJMUT09>

Meeting ID: 910 0178 8853

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