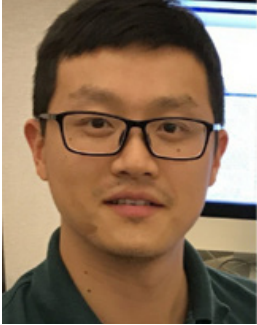


Stephenson School of Biomedical Engineering
Seminar Series Presents

**NEURAL PATTERN DECODING USING MACHINE LEARNING
FOR MEDICAL APPLICATIONS**



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Live
Tulsa Campus
3104

zoom
Gallogly Hall, Room 126

ABSTRACT:

With the rapid development of computer and imaging technologies, a huge number 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 will significantly 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 using newly designed machine learning algorithms, including sparse feature optimization, Bayesian decoding of neural signals, and unsupervised disease subtyping, for brain-machine interaction and treatment personalization of mental disorders.

BIO:

Yu Zhang has been a Postdoctoral Research Fellow in the Department of Psychiatry and Behavior Sciences, Stanford University since 2017. Before joining Stanford, he worked as a Postdoctoral Research Fellow (2016-2017) at Biomedical Research Imaging Center, University of North Carolina at Chapel Hill. Since 2014, he has been also a Visiting Scientist at RIKEN Brain Science Institute, Japan. He was working as an Assistant Professor (2013-2016) and Associate Professor (2016-2017) in the Department of Automation at East China University of Science and Technology, where he got his Ph.D. degree of Control Science and Engineering in 2013. From 2010 to 2012, he was an International Research Associate with the RIKEN BSI, Japan. He is the author of over 90 peer-reviewed papers that have been published in the prestigious journals and conferences, such as 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 IEEE Access, Brain-Computer Interfaces, and Methods and Protocols. His research interests include machine learning, computational neuroscience, artificial intelligence, signal processing, human-computer interface, medical imaging computing.