CUR Decompositions and Subspace Clustering

Abstract: In this talk, firstly, I will review some basic concepts such as ordinary coherence (OC), direct coherence (DC), and Granger causality based on information theoretic approaches. Secondly, by using the extended methods such as direct transfer function (DTF) and partial directional coherence (PDC) to calculate the information flows’ connectivity and directionality, a dynamical network of drug-refractory epilepsy is constructed by analyzing 19 channels’ EEG data located in the cerebral cortex. Thirdly, I will compare the performance of two methods in confirming active nodes in the abnormal firing neuron clusters and exploring their diffusion paths. These results may be useful to find the possible epileptogenic zone, and further provide some help for diagnoses and treatment of drug-refractory epilepsy patient.

Short Bio: Dr. Keaton Hamm is a native Texan and 3 times an Aggie with a B.S. in Chemical Engineering and B.S. and Ph.D. in Mathematics from Texas A&M. He was a Postdoc at Vanderbilt University from 2015-2018, and is currently a Postdoctoral Research Associate at the University of Arizona in the NSF supported TRIPDS program (Transdisciplinary Research In Principles Of Data Science). His research interests broadly speaking are in applying Analysis tools to problems in dimensionality reduction and structured approximation of large-scale data which may take the form of graphs, matrices, or spaces of smooth signals.

Refreshments before the talk and socializing following the talk
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