Mathematics, Statistics, and Computer Science   **@ UIC**

Statistics and Data Science Seminar

Estimation and Inference for Differential Networks

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Abstract: We present a recent line of work on estimating differential networks and conducting statistical inference about parameters in a high-dimensional setting. First, we consider a Gaussian setting and show how to directly learn the difference between the graph structures. A debiasing procedure will be presented for construction of an asymptotically normal estimator of the difference. Next, building on the first part, we show how to learn the difference between two graphical models with latent variables. Linear convergence rate is established for an alternating gradient descent procedure with correct initialization. Simulation studies illustrate performance of the procedure. We also illustrate the procedure on an application in neuroscience. Finally, we will discuss how to do statistical inference on the differential networks when data are not Gaussian.

Wednesday, October 24 at 4:00 PM in 636 SEO