

**Statistics Seminar**  
Department of Mathematical Sciences

<b>DATE:</b>	Thursday, Month 31, 2017
<b>TIME:</b>	1:15pm – 2:15pm
<b>LOCATION:</b>	WH 100E
<b>SPEAKER:</b>	Yuan Fang, Binghamton University
<b>TITLE:</b>	Bayesian Approach to Parameter Estimation

**Abstract**

Bayesian Approach to Parameter Estimation and Clustering for the Mixtures of Multivariate Normal Inverse Gaussian Distributions Abstract: Increasingly, non-Gaussian mixture models are gaining attention for mixture model-based clustering particularly when dealing with data that exhibit features such as skewness and heavy tails. One such mixture distribution is the mixtures of multivariate normal inverse Gaussian (MNIG) distribution. MNIG arises from a mean-variance mixture of a multivariate Gaussian distribution with the inverse Gaussian distribution. A mixture of MNIG distributions has the flexibility to represent both skewed and symmetric clusters as well as their mixture, which makes them suitable for a wide range of datasets. In this talk, I will focus on an approach for parameter estimation of mixtures of MNIG distributions in a Bayesian framework via a Gibbs scheme. Novel approaches to simulate univariate generalized inverse Gaussian (GIG) random variables and matrix generalized inverse Gaussian (MGIG) random matrices will be provided. The proposed algorithm will be applied to both simulated and real data. Some future work on extending finite mixture of MNIG distributions to an infinite mixture model framework will also be discussed.

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