

Statistics Seminar  
Department of Mathematical Sciences

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| <b>DATE:</b>     | Thursday, February 21, 2019   |
| <b>TIME:</b>     | 1:15pm - 2:15pm   |
| <b>LOCATION:</b> | WH 100E   |
| <b>SPEAKER:</b>  | Fang Yuan, Binghamton University                                      |
| <b>TITLE:</b>    | Variable selection in clustering via Dirichlet process mixture models |

**Abstract**

Variable selection in clustering via Dirichlet process mixture models Abstract: The increased collection of high-dimensional data in various fields has raised a strong interest in clustering algorithms and variable selection procedures. In this paper, we propose a model-based method that addresses the two problems simultaneously. We introduce a latent binary vector to identify discriminating variables and use Dirichlet process mixture models to define the cluster structure. We update the variable selection index using a Metropolis algorithm and obtain inference on the cluster structure via a split-merge Markov chain Monte Carlo technique. We explore the performance of the methodology on simulated data and illustrate an application with a DNA microarray study.

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