When: **Friday 11:30 – 12:30**

Where: **WERC 236C**

[Note] This is joint with the Department seminar with different time and room.

Speaker: **Prof. Mingyuan Zhou**

IROM Department, McCombs School of Business
University of Texas, Austin

Title: **Bayesian deep learning that goes beyond reparameterizable latent variables with explicit density functions**

Date: **3-1-2019**

Abstract: Bayesian deep learning provides an expressive framework to exploit the synergy between probabilistic models, deep neural networks, and optimization to analyze big and complex data. It often results in an objective function that is written as an expectation with respect to latent variables, whose distribution parameters need to be optimized. For tractable optimization via gradient backpropagation, these latent variables are often constrained to be both reparameterizable and have analytic probability density functions. In this talk, I will show how to utilize commonly used tools in Bayesian statistics to relax these two constraints, enhancing the expressiveness of existing Bayesian deep learning models and creating new opportunities to combine the power of Bayesian hierarchical modeling and deep learning.

Bio: Mingyuan Zhou is an assistant professor of statistics in the McCombs School of Business at the University of Texas at Austin. He received his Ph.D. in Electrical and Computer Engineering from Duke University in 2013. His research lies at the intersection of Bayesian statistics and machine learning, covering a diverse set of research topics in statistical theory and methods, hierarchical models, Bayesian nonparametrics, statistical inference for big data, and deep learning. He is currently focused on advancing both statistical inference with deep learning and deep learning with probabilistic methods. Representative examples of his recent and ongoing research include semi-implicit variational inference, gradient backpropagation through binary/categorical stochastic layers, discrete-action policy optimization, survival analysis with competing risks, Bayesian deep topic modeling/graph mining/collaborative filtering, and joint text-image modeling for photo-realistic image generation.