Indiana University-Purdue University Indianapolis
Department of Mathematical Sciences

STATISTICS SEMINAR

12:15pm—1:15pm, Tuesday, October 20, 2020
Zoom Meeting: Meeting ID: 751 025 519

Speaker: **Tianyang Hu**
Department of Statistics, Purdue University

Title: **Nonparametric Perspective of Deep Neural Networks**

Abstract:

Models built with deep neural network (DNN) can handle complicated real-world data extremely well, seemingly without suffering from the curse of dimensionality or the non-convex optimization. To contribute to the theoretical understanding of deep learning, statistics has a lot to offer. This talk approaches the nonparametric perspective of DNNs by considering the following questions for estimation problems: (1) What are the most appropriate data assumptions and what is the corresponding optimal convergence rate? (2) Is the optimal rate achievable for DNN estimators? These questions are investigated on two of the most fundamental problems regression and classification. Specifically, statistical optimality of DNN estimators is established under various settings with special focuses on the curse of dimensionality and optimization guarantee.

Bio:
Tianyang Hu is a fifth year Ph.D. student in the Department of Statistics at Purdue. He received a B.Sc. degree in Mathematics from Tsinghua University and a M.Sc. degree in Statistics from the University of Chicago. His research interests is statistical theory of deep learning.