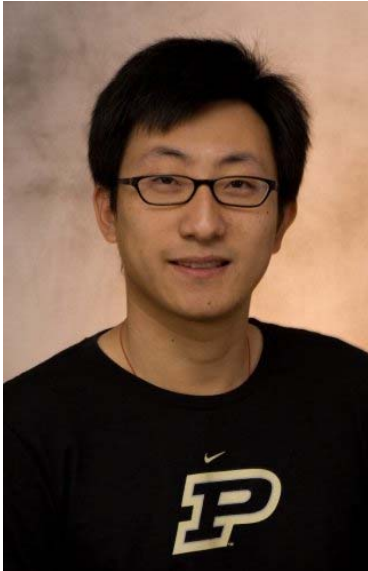


DEPARTMENT OF STATISTICS

**Guang Cheng**

Department of Statistics
Purdue University

Some Statistical Optimality Results in Deep Learning

October 30, 2019

11:45am – 12:45pm

Light refreshments will be served

**110 Frelinghuysen Road
Hill Center, Room 552**

Abstract: This talk discusses three statistical deep learning results with a unifying theme on statistical optimality. The first one attempts to interpret the double descent phenomenon recently observed in deep learning by precisely characterizing a U-shaped curve within the “over-fitting regime.” Our second part proposes optimal deep neural network classification in a student-teacher framework. This talk is concluded by the optimal variational inference in sparse deep neural networks. The talk is based on our recent manuscripts: <https://arxiv.org/pdf/1909.11720.pdf>, <https://arxiv.org/pdf/1910.04355.pdf>, <https://arxiv.org/pdf/1909.10072.pdf>.

Bio: Guang Cheng is a Professor of Statistics at Purdue University. He received his PhD in Statistics from University of Wisconsin-Madison in 2006. His research interests include Big Data and Deep Learning. Cheng is the recipient of the NSF CAREER award, Noether Young Scholar Award and Simons Fellowship in Mathematics. He is currently a member of Institute for Advanced Study, Princeton in the Fall of 2019. Please visit his big data theory research group at <http://www.stat.purdue.edu/~chengg/>

