

## THE UNIVERSITY OF GEORGIA DEPARTMENT OF STATISTICS

## Colloquium Series

## **Helen Zhang**

Department of Mathematics & GIDP University of Arizona

3:50 PM, Thursday, April 1st, 2021 Zoom link: <a href="https://zoom.us/j/7389376577">https://zoom.us/j/7389376577</a>

## Scalable and Model-free Methods for Multiclass Probability Estimation

Classical approaches for multiclass probability estimation are mostly model based, such as logistic regression or LDA, by making certain assumptions on the underlying data distribution. We propose a new class of model-free methods to estimate class probabilities based on large-margin classifiers. The method is scalable for high-dimensional data by employing the divide-and-conquer technique, which solves multiple weighted large-margin classifiers and then constructs probability estimates by aggregating multiple classification rules. Without relying on any parametric assumption, the estimates are shown to be consistent asymptotically. Both simulated and real data examples are presented to illustrate performance of the new procedure.