Statistics Seminar

Department of Mathematical Sciences

DATE:	Thursday, Oct. 15, 2020
TIME:	1:15pm – 2:15pm
LOCATION:	Zoom meeting
SPEAKER:	Wenshu Dai, Binghamton University
TITLE:	Concomitant variables in finite mixture models

Abstract

The standard mixture model, the concomitant variable mixture model, the mixture regression model and the concomitant variable mixture regression model all enable simultaneous identification and description of groups of observations. This study reviews the different ways in which dependencies among the variables involved in these models are accommodated. It is demonstrated that the standard and the concomitant variable mixture models identify groups of observations and at the same time discriminate them analogous, respectively, to discriminant analysis and logistic regression. While the mixture regression model is shown to have limited use for classifying new observations. An extension of it, called the saturated mixture regression model, is shown to be useful in that respect. Advantages of that model in model estimation when missing data are present and as a framework for model selection are also discussed.