University of California, Irvine
Statistics Seminar

Some Semiparametric Mixture Models and Their Applications

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(Bldg. #314 on campus map)

In this talk, several semiparametric extension of the traditional parametric finite mixture models are introduced. Mixture models are widely used when the population consists of several homogeneous subgroups. Currently most of mixture models considered are fully parametric. This talk will introduce three possible semiparametric extensions of traditional parametric mixture models and discuss their applications and estimation methods. The first extension considers the two component mixture model when one component is known and the other component is unknown. We illustrate its application to multiple hypothesis testing using a genetic data. The second extension considers mixture of linear regression models when the mixture proportions depend on predictors nonparametrically. The third extension considers a new class of mixture of single-index models, where the mixing proportions, mean functions, and variances are unknown but smooth functions of an index.

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