

Department of Mathematics, Statistics and Computer Science

COLLOQUIUM ANNOUNCEMENT

Nonparametric Estimation of Multivariate Mixtures

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Abstract

A multivariate mixture model is determined by three elements: the number of components, the mixing proportions and the component distributions. Assuming that we are given the number of components and that each mixture component has independent marginal distributions, we propose a non-parametric method to estimate the component distributions in a multivariate mixture model. The basic idea is that we convert the estimation of density functions as a problem of estimating the coordinates of density functions under a good set of basis functions. Specifically, we construct a set of basis functions by using conditional density functions and try to recover the coordinates of component distributions under this basis. Furthermore, we show that our estimator for the component density functions is consistent. In the simulation study, we compare our algorithm with other existing non-parametric methods of estimating component distributions in mixture models under the assumption of conditionally independent marginals.

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For further information: