A Learning-Based EM Mixture Regression Algorithm

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Abstract : The mixture likelihood approach to clustering is a popular clustering method where the expectation and maximization (EM) algorithm is the most used mixture likelihood method. In the literature, the EM algorithm had been used for mixture regression models. However, these EM mixture regression algorithms are sensitive to initial values with a priori number of clusters. In this paper, to resolve these drawbacks, we construct a learning-based schema for the EM mixture regression algorithm such that it is free of initializations and can automatically obtain an approximately optimal number of clusters. Some numerical examples and comparisons demonstrate the superiority and usefulness of the proposed learning-based EM mixture regression algorithm.