Fuzzy Weighted Gaussian Mixture Model for Feature Reduction

Abstract:

Feature reduction is one kind of pattern recognition and decision making technique, which can be achieved by using Fuzzy Weighted Gaussian Mixture Model (FWGMM) based on the Gaussian Mixture Model. This model helps to find relevant features by using Fuzzy ordered weighted average, which leads to determine the similarity of the density mixture. The salient feature of this approach is to find the relevant features simultaneously by employing fuzzy weighted approach. By applying Ordered Weighted Average (OWA), the feature weights are calculated and they are ordered using the membership values (oring criterion). Hence the feature weights are used as a regulator to determine the relevant features in feature reduction process. Maximum Ordered Weighted Average Likelihood (MOWAL) Framework adopts the Fuzzy Weighted – Gaussian Mixture Model (FW-GMM) for finding the component, which helps to discriminate the relevance of the features and improve the accuracy of density mixture.