

ABSTRACT

Clustering is the process of grouping the data into classes or cluster so that objects within a cluster have high similarity in comparison to one another, but are very dissimilar to objects in other clusters. There are many technique in fuzzy methods like: Hard C-Means Clustering (also called K-means), Fuzzy C-means Clustering, Mountain Clustering, and Subtractive Clustering.

Some of the clustering techniques rely on knowing the number of clusters apriori. In thatcase the algorithm tries to partition the data into the given number of clusters. K-means and Fuzzy C-means clustering are of that type. In other cases it is not necessary to have the number of clusters known from the beginning; instead the algorithm starts by finding the first large cluster, and then goes to find the second, and so on. The problem with the previous clustering method, mountain clustering, is that its computation grows exponentially with the dimension of the problem; that is because the mountain function has to be evaluated at each grid point. Subtractive clustering solves this problem by using data points as the candidates for cluster centers, instead of grid points as in mountain clustering.

This final project implement fuzzy subtractive clustering methods, is an extension of the mountain clustering method, and analyze their performance. FSC algorithm has good capability for finding cluster because it consider all dimension of dataset. Clustering using FSC can not always find cluster for extreme data. For Influence range, squash factor, and reject ratio is return equal with grow of total cluster. And for accept ratio do not affect of total cluster.

Keyword : *fuzzy methods, fuzzy clustering, subtractive clustering, fuzzy subtractive clustering.*