

Abstract

Cluster analysis is one good way for quick review of data. Cluster is determined based on characteristics equation of each data. Sometimes we can't put data exactly on single cluster because it is located between two or more clusters. In reviewing data, requires several analysis before clusters number can be determined. It is required specific mechanism to get right cluster to obtain optimal cluster without having to specify clusters number beforehand.

Fuzzy Subtractive Clustering (FSC) is clustering algorithm to find clusters and well capable of finding cluster because considering all dimensions of data. FSC is unsupervised algorithm and users don't need to specify the number of clusters beforehand. Implementation of Fuzzy Inference System (FIS) on the clustering results of the FSC in order to obtain maximum performance from the cluster. FIS plays a role in choosing the optimal cluster for calculating the accuracy value.

On FSC algorithm, input parameters including influence range, squash factor, and reject ratio is inversely proportional to clusters number. While accept ratio parameter doesn't have any influence on clusters number. In addition, upper and lower limits parameters must be accurately determined by users in accordance with data conditions to obtain good clustering results. While FIS had better performance in selecting optimal number of clusters based on the level of accuracy.

Keywords: fuzzy clustering, subtractive clustering, fuzzy subtractive clustering, fuzzy inference system