A NOVEL APPROACH TO CLUSTERING USING GENETIC ALGORITHM

RAHUL KALA, ANUPAM SHUKLA AND RITU TIWARI

Abstract

Clustering is one of the most fundamental algorithms which have got huge applications especially in the area of Neuro Fuzzy Systems, Data Analysis, Linear Vector Quantization, Bio-informatics etc. Various approaches exist for clustering of data. A few of the commonly used approaches are K-Means clustering, Fuzzy C-Means Clustering, Subtractive Clustering, etc. Clustering may involve varied uses. Based on these we may be required to control our clustering algorithm. The earlier mentioned algorithms do not give us this adaptability. Hence we propose the use of Genetic Algorithms for the purpose of clustering. In order to test the working of the proposed algorithm, we coded it and made it work on a randomized data set. We found that in general use, the performance of the algorithm was equivalent to that of the k-Means clustering. We modified the fitness function and found that the algorithm behaved as per expectations and generated better clusters that the k-Means clustering algorithm, that were desired.