Abstract

The main purpose of using clustering techniques is to divide a dataset into a few unsupervised data analysis partitions. One of the recent and apparently one of the easiest one of them is k-means. This technique is based on square error criterion. To solve the combinatorial optimization issues in the context of clustering techniques, k-means algorithm was used recently. In spite of the fact that it has been applied to a few territories, it experiences sensitivity to initial points. There have been a few techniques that were reported beneficial for improving k-means systems. By this paper we are trying to suggest a new algorithm which depends on an optimized clustering method. This algorithm that is called K-Means Modified Grenade Explosion Method (KMGEM) is a K-Means that initialized with Modified Grenade Explosion algorithm. The results showed that our proposed method is superior in comparison with methods like Genetic Algorithm, Genetic K-Means Algorithm, and k-means algorithms.


**Index Terms**

Computer Science | Algorithms

**Keywords**

Data clustering, GKA, GA-PSO, k-means clustering