Abstract

Data clustering is considered as one of the most promising data analysis methods in data mining and on the other side K-Means is the well known partitional clustering technique. Nevertheless, K-Means and other partitional clustering techniques struggle with some challenges where dimension is the core concern. The different challenges associated with clustering techniques are preknowledge of initial centers of clusters, problem of stagnation, multiple cluster membership problem, dead unit problem, and slow or premature convergence to local search space. So as to resolve these clustering limitations, an eminent choice is to adapt the Swarm Intelligence (SI) inspired optimization algorithms. This paper presents an overview of the research on an applicability of different Particle Swarm Optimization (PSO) variants for clustering multidimensional data along with the basic concepts of PSO as well as data clustering. It also puts forward an idea of new and advance PSO variant in order to deal with multidimensional data clustering.

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**Index Terms**

Computer Science

Artificial Intelligence
Keywords
BRAPSO  Data Clustering  Particle Swarm Optimization (PSO)  Subtractive Clustering (SC)
Swarm Intelligence (SI).