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A new hybrid approach for data clustering

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ABSTRACT

Data clustering has been applied in multiple fields such as machine learning, data mining, wireless and pattern recognition. One of the most famous clustering approaches is K-means which effectively used in many clustering problems, but this algorithm has some problems such as local optimal convergence, initial point sensitivity. Artificial fishes swarm algorithm (AFSA) is one of the swarm intelligent algorithms. Its major application is in solving optimization problems. Of its characteristics, it can refer to high convergence and insensitivity to initial values. In this paper a hybrid clustering method based on artificial fishes swarm and K-means so called KAFSA is proposed. In the proposed algorithm, K-means algorithm is used to simulate the behaviors of artificial fishes in AFSA. The proposed algorithm has been tested on five data sets and was compared with particle swarm optimization (PSO), K-means and standard AFSA algorithms. Experimental results showed that proposed approach has suitable and acceptable efficacy in data clustering.

INDEX TERMS

Index Terms are available to subscribers and IEEE members.

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