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A New Algorithm Based on Improved Artificial Fish Swarm Algorithm for Data Clustering

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Abstract

In numerous real world optimization problems, objective function or constraints of the problem can be changed during time. If these undefined situations are occurred in optimization process, this problem is called dynamic. There are several challenges in dynamic environments optimization, so that algorithms designed for optimization in these environments would utilize several mechanisms in order to conquer the challenges. In this paper, a novel algorithm for optimization in dynamic environments is proposed based on particle swarm optimization in which a novel mechanism have been used for improving the performance. In this mechanism, it is tried to increase the ability of local search around optimum with focusing on best found peak in each environments. The results of the proposed approach are evaluated on moving peak benchmarks and are compared with results of several state of the art algorithms. Experimental results show the superiority of the proposed method.

Keywords

Artificial Fish Swarm Algorithm, Data Clustering, K-means, Swarm Intelligence, Optimization.