

## عنوان مقاله:

Improving OPTICS Algorithm with Imperialist Competitive Algorithm: Choosing Automatically Best Parameters

## محل انتشار:

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## خلاصه مقاله:

Clustering based on similarity is one of the most important stages in data analysis and a beneficial tool for data mining. There are a wide range of data from which a clear pattern cannot be driven using common clustering methods, data with unusual shapes. Scientists introduced density-based clustering algorithms to resolve this issue and enable clustering for this kind of data. Among all density-based clustering algorithms, Ordering points to identify the clustering structure (OPTICS) is an algorithm for finding density-based clusters in spatial data. Density-based methods describe clusters as dense areas among diffused ones. An informal definition of cluster is: For each intra-cluster point, neighborhood with specific radius  $\epsilon$ , must contains minimum number of point's  $\mu$ . It's very difficult to specify these two parameters for any types of data and needs great effort setting up them to achieve desired results. The main goal of this research is to use meta-heuristic methods especially Imperialist Competitive Algorithm (ICA) to precise estimation of these parameters ( $\epsilon$ ,  $\mu$ ) so that we can apply them to OPTICS Algorithm to achieve accurate and high quality clusters for any data sets. In order to evaluation of mentioned method, we utilized data sets specialized for classification and removed class label. Comparing our results with original one, proved that our method is produced a precise class label.

## کلمات کلیدی:

Data mining; Density-based Clustering; OPTICS; Meta-heuristics Algorithm; Imperialist Competitive Algorithm

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/793701>

