

A Comparative Study of Multi-SOM Algorithms for Determining the Optimal Number of Clusters

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Abstract : The interpretation of the quality of clusters and the determination of the optimal number of clusters is still a crucial problem in clustering. We focus in this paper on multi-SOM clustering method which overcomes the problem of extracting the number of clusters from the SOM map through the use of a clustering validity index. We then tested multi-SOM using real and artificial data sets with different evaluation criteria not used previously such as Davies Bouldin index, Dunn index and silhouette index. The developed multi-SOM algorithm is compared to k-means and Birch methods. Results show that it is more efficient than classical clustering methods.

Keywords : clustering, SOM, multi-SOM, DB index, Dunn index, silhouette index

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