World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:9, No:01, 2015

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

Authors : Imèn Khanchouch, Malika Charrad, Mohamed Limam

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
Conference Title : ICDMKE 2015 : International Conference on Data Mining and Knowledge Engineering
Conference Location : Paris, France
Conference Dates : January 23-24, 2015

Open Science Index, Computer and Information Engineering Vol:9, No:01, 2015 publications.waset.org/abstracts/17422/pdf