

عنوان مقاله:

NEMST K-means: Introducing a Center-Based Clustering Algorithm for Detecting Arbitrary Shape and Heterogeneous Clusters

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نویسندگان:

Arash Ghorbannia Delavar - *Department of Computer Science, Payame Noor University, PO BOX 19395-3697, Tehran, Iran*

Gholam Hasan Mohebpour - *Department of Computer Science, Payame Noor University, PO BOX 19395-3697, Tehran, Iran*

Mohammad Madadpour Inallou - *Young Researchers and Elites Club, West Tehran Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

K-means is a typical clustering algorithm which is widely used for clustering datasets and is one of the simplest, non-supervised algorithms and also it doesn't need any prior knowledge about the data distribution. A key limitation of K-means is its cluster model which is based on spherical clusters that are separable in a way so that the mean value converges towards the cluster center and it is not able to detect arbitrary shape and heterogeneous clusters. In this paper we introduce Normalized Euclidean Distance minimum spanning tree based K-means (NEMST K-means) which is a center-based partitioning algorithm that uses minimum spanning tree and introduces new membership and objective functions. NEMST K-means algorithm is applied to several well-known datasets. Experimental results show that it is able to detect arbitrary shape and heterogeneous clusters and can obtain better clustering results than K-means.

کلمات کلیدی:

Data mining, clustering, center-based, K-means, minimum spanning tree, arbitrary cluster, heterogeneous cluster

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