

عنوان مقاله:

Gravitational Ensemble Clustering

محل انتشار:

دوازدهمین کنفرانس ملی سیستم های هوشمند ایران (سال: 1392)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Armindokht Hashempour Sadeghian - *Department of Electrical Engineering Shahid Bahonar University of Kerman*

Hossein Nezamabadi-pour - *Department of Electrical Engineering Shahid Bahonar University of Kerman*

خلاصه مقاله:

Data mining is one of the helpful and effective data analysis techniques that enable the extraction of interesting structures and knowledge from a large amount of data. Clustering is an important data mining task that refers to the process of categorizing data objects into cohesive groups called clusters. There are many clustering approaches proposed in the literature with different quality/complexity tradeoffs. It is well known that no clustering method can sufficiently handle all types of cluster structures and properties (e.g. shape, size, overlapping, and density). The idea of combining different clustering results (cluster ensemble or clustering aggregation) emerged as an approach to overcome the weakness of single algorithms and further improve their performances. In this paper, a novel consensus function based on the theory of gravity is presented which is called Gravitational Ensemble Clustering (GEC). The proposed method combines weak clustering algorithms such as the K-means algorithm using gravitational clustering concepts. The proposed method is capable of the identification of true underlying clusters with arbitrary shapes, sizes and densities. Computational experiments were conducted to test the performance of the GEC approach using artificial and benchmark datasets. Undertaken experimental results illustrate the versatility and robustness of the proposed method, as compared to individual clusterings produced by well known clustering algorithms, and compared to other ensemble combination methods.

کلمات کلیدی:

Ensemble clustering, Gravitational theory, Gravitational clustering

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/276340>

