Abstract

The research of spatial data is in its infancy stage and there is a need for an accurate method for rule mining. Association rule mining searches for interesting relationships among items in a
Application of Spatial Data mining for Agriculture

given data set. This paper enables us to extract pattern from spatial database using k-means algorithm which refers to patterns not explicitly stored in spatial databases. Since spatial association mining needs to evaluate multiple spatial relationships among a large number of spatial objects, the process could be quite costly. An interesting mining optimization method called progressive refinement can be adopted in spatial association analysis. The method first mines large data sets roughly using a fast algorithm and then improves the quality of mining in a pruned data set. The k-means algorithm randomly selects k number of objects, each of which initially represents a cluster mean or center. For each of the remaining objects, an object is assigned to the cluster to which it is most similar, based on the distance between the object and the cluster mean. Then it computes new mean for each cluster. This process iterates until the criterion function converges. The above concept is applied in the area of agriculture where giving the temperature and the rainfall as the initial spatial data and then by analyzing the agricultural meteorology for the enhancement of crop yields and also reduce the crop losses.

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Index Terms

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