Abstract

Spatial data refer to any data about objects that occupy real physical space. Attributes within spatial databases usually include spatial information. Spatial data refers to the numerical or categorical values of a function at different spatial locations. Spatial metadata refers to the descriptions of the spatial configuration. Application of classical association rule mining concepts to spatial databases is promising but very challenging. Spatial Association Rule Mining requires new approaches compared to classical association rule mining. Spatial data consists of dependent events compared to transactional data which consist of independent transactions. It is more difficult to classify a discovered spatial association rule as interesting. Instead of much generalized rule more specific rule discovery needs further research.

Spatial Association Rules are association rules about spatial data objects. Either the antecedent or the consequent of the rule must contain some spatial predicates. Spatial association rules are implications of one set of data by another. The main area of concentration in this paper is to optimize the rules generated by Association Rule Mining (Apriori method), using hybrid evolutionary algorithm. The main motivation for using Evolutionary algorithms in the discovery of high-level prediction rules is that they perform a global search and cope better with attribute interaction than the greedy rule induction algorithms often used in data mining. The improvements applied in EAs are reflected in the rule based systems used for classification as described in results and conclusions. The future enhancements will be on using the other Evolutionary Optimization Algorithms such as PSO (Particle Swarm Optimization ) for the rule generation.
Reference


[8] “Association Rule Analysis of Spatial Data Mining Based on Matlab”, Workshop on Knowledge Discovery and Data Mining, 2008 IEEE DOI 10.1109/WKDD.2008.21


Index Terms

Computer Science

Databases
**Key words**

Spatial Association Rule Mining  
Evolutionary Optimization Algorithms  
Genetic Algorithms  
ACO