

An Optimized Association Rule Mining Algorithm

Authors : Archana Singh, Jyoti Agarwal, Ajay Rana

Abstract : Data Mining is an efficient technology to discover patterns in large databases. Association Rule Mining techniques are used to find the correlation between the various item sets in a database, and this co-relation between various item sets are used in decision making and pattern analysis. In recent years, the problem of finding association rules from large datasets has been proposed by many researchers. Various research papers on association rule mining (ARM) are studied and analyzed first to understand the existing algorithms. Apriori algorithm is the basic ARM algorithm, but it requires so many database scans. In DIC algorithm, less amount of database scan is needed but complex data structure lattice is used. The main focus of this paper is to propose a new optimized algorithm (Friendly Algorithm) and compare its performance with the existing algorithms. A data set is used to find out frequent itemsets and association rules with the help of existing and proposed (Friendly Algorithm) and it has been observed that the proposed algorithm also finds all the frequent itemsets and essential association rules from databases as compared to existing algorithms in less amount of database scan. In the proposed algorithm, an optimized data structure is used i.e. Graph and Adjacency Matrix.

Keywords : association rules, data mining, dynamic item set counting, FP-growth, friendly algorithm, graph

Conference Title : ICCSEA 2014 : International Conference on Computer Science, Engineering and Applications

Conference Location : Paris, France

Conference Dates : December 30-31, 2014