Efficient Infrequent Itemset Mining Using Depth-First and Top-Down Lattice Traversal

- Using NiiMiner(Negative Infrequent Itemset tree miner) Algorithm
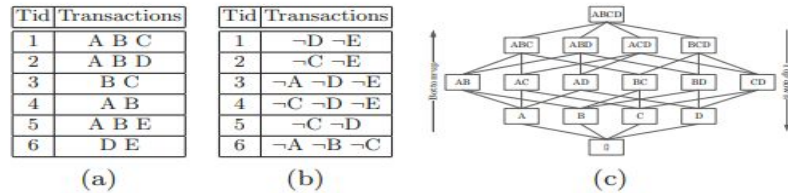- Preliminaries

Fig. 1. Example transaction database (a) and the corresponding neg-rep transaction database (b). (c) gives an simple powerset lattice with four distinct items.
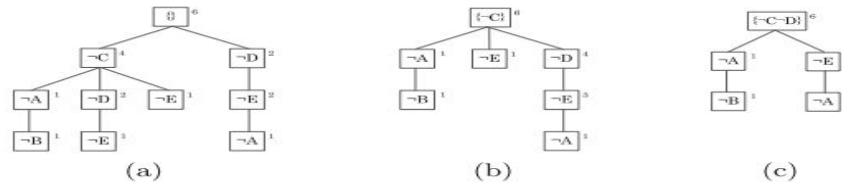
- How does the algorithm work?

Fig. 2. Examples of (a) negative itemset tree and its corresponding de-tree by excluding (b) ¬C and (c) ¬C, ¬D. (c) is also a de-tree of (b).

Experimental Evaluation

- NiiMiner algorithm is compared to the Rarity algorithm to check the performance
- NIIMiner is significantly faster than Rarity under most of the settings
- It does not work well with the sparse data and also under large minimum support value and small maximum itemset size settings.

Mining Rare Patterns by Using Automated Threshold Support

- This study emphasizes an approach to obtain the infrequent itemsets involving rare items by setting the support thresholds automatically by using logical itemset mining
- Proposed method combines Apriori and MS-Apriori to mine logically
- MRCP tree scans the data once which reduces the space as well as the time complexity of the system
- Experiment Evaluation: Most important benefit of this system is that it will decide the value of the threshold on its own and also it covers the drawbacks of Fp- Growth algorithm,sliding window,sequential algorithm

Rare Association Rules Mining of Diabetic Complications Based on Improved Rarity Algorithm

- Based on the Rarity algorithm, this paper presents an improved top-down approach to efficiently mine all rare itemsets and their association rules, which uses the graph structure to indicate all combinations of existing items in the database
- Experiment Evaluation: Comparing with Arima, the method in this paper has a significant improvement in the space and time complexity. And comparing with Rarity, this method saves much memory, and solves the biggest memory problem of Rarity algorithm