INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT

ISSN 2278 – 0211 (Online)

Delay and Distribution Based Tolerant Network Bandwidth Calculation

Maruvarasi M. E.
Saveetha School of Engineering, Computer Science and Engineering
Dr. Nedunchelian
Saveetha School of Engineering, Computer Science and Engineering

Abstract:
The objective of this work is to take a first step to close this fundamental gap, aiming at laying a foundation that can be used in future computer/network designs taking into account the malicious users. Our approach is based on proposing a metric that evaluates the vulnerability of a system. We then evaluate the commonly used data structure in network mechanisms, the hash data structure, using our vulnerability metric. We show that a Closed Hash is much more vulnerable than an Open Hash to DDoS attacks, even though the two systems are considered to be equivalent via traditional performance evaluation. We also apply the metric to queuing mechanisms common to computer and communications systems. Lastly we apply it to the practical case of a hash table whose requests are controlled by a queue, showing that even after the attack has ended, the regular users still suffer from performance degradation or even a total denial of service.

Keywords*: tolerant network, malicious users*

1. Introduction

Time has been one of the most interesting phenomena for men: understanding its relation to observed changes has been a target for thousands of years. Temporal data appears naturally in almost everything in nature, and the improvements on the digital storage capabilities verified in the last decades, has contributed to increase the interest in the discovery of hidden information. One of the answers to this challenge is the automatic discovery of temporal patterns, and has been mainly performed using the pattern mining approach, either in its pure form or as sequential pattern mining. With these techniques is possible to identify frequent and common behaviors that reveal actions performed at the same time, or as sequences of actions. However, and despite their relative success, most of the times, these techniques only consider the actions themselves, without paying attention to the instant of time when they are performed. In this manner, it is not possible to understand the impact of time over entities' behavior. One possibility to surpass this problem is to discover temporal patterns, which mean to find frequent behaviors that occur in particular instants of time, i.e, instants of time with certain characteristics. With the advances in the area of knowledge representation and management, nowadays it is simpler to deal with specific notions of certain concepts. For example calendars can be precisely defined recurring to the concepts described in a time ontology. Before presenting the extension of the interleaved algorithm, we describe the Reusable Time Ontology and state the problem of mining temporal patterns. In pattern recognition or anomaly detection one wants to detect "interesting" or unusual features. A large body of literature in statistics, machine learning, and signal processing. While they work extremely well in a wide-range of applications, they often do so because they already know what to look for: someone has decided beforehand what is interesting and what not. When properties of the data do not align with conditions on the algorithm anymore, they often break down and a new algorithm has to be developed for the new interesting situation. For example, in many brain imaging studies, the experimentalist has full control over the shape and intensity of the stimulus; one can then often use a "matched filter" (or "template matching") technique to detect the response to the stimulus in fMRI data. Data mining has emerged to address problems of understanding ever-growing volumes of information, finding patterns within the data that are used to develop useful knowledge. In particular, on-line textual data is growing rapidly, creating the need for automated analysis. This problem definition is not developed for handling any changes in the underlying patterns. Data mining without taking the changes into consideration can result in severe degradation of performance, especially when the discovered association rules are used for classification. Since it is common that we need to predict the future based on the historical data in the past, the mining of changes in association rules is an important problem. In our previous work we have proposed to mine changes in association rules. More formally, this paper presents the problem definition. Furthermore, we also generalize the work so that different fuzzy data mining techniques can be used for tackling this problem. Given an association rule associated with a sequence of supports and a sequence of confidences in different time periods, we propose to use linguistic variables

and linguistic terms to represent the changes in its supports and confidences. Furthermore, we propose to build a fuzzy decision tree to discover the regularities governing how the association rule changes over time. The fuzzy decision tree can then be converted to a set of fuzzy rules. These fuzzy rules are called fuzzy meta-rules because they are rules about rules. The fuzzy meta-rules can be used for human users to examine and for predicting how the association rule will change in the future.

2. Existing System

In existing system they use Frequent itemset mining in the context of market basket analysis, as the first step of the association rule extraction process.

- Finding all itemsets, called large itemsets, that are present in at least s% of transactions.
- Generating from each large itemset, rules that use items from the large itemset.

The problem of discovering relevant changes in the history of itemsets and association rules has been already addressed. The problem of mining association rules between sets of items in a large database of customer transactions.

2.1. Disadvantage

- However, this solution is computationally infeasible.
- High computational cost.

3. Proposed system

We propose novel kind of dynamic pattern, namely the history generalized Pattern (HIGEN),that represents the evolution of an itemset in consecutive time periods, by reporting the information about its frequent generalizations characterized by minimal redundancy.Higen miner algorithm directly addresses the higen mining by extending a support-driven generalization approach. The proposed algorithm avoids both redundant knowledge extraction followed by postpruning and multiple taxonomy evaluations over the same pattern mined from different time intervals. A modified version of the higen miner algorithm is also proposed to address nonredundent higen mining.

- The effectiveness of the proposed approach in supporting expert decision making through the analysis of context data coming from a context-aware mobile environment
- The efficiency and the scalability of the proposed HIGEN MINER algorithm on synthetic datasets.
- It overcome the existing problem of change mining inhe context of frequent itemsets.

4. Literature Survey

Mining Association Rules between Sets of Items in Large Databases.

The learnability theory deals mainly with worst case bounds under any possible probabilistic distribution. we Interested in developing an ecient solution and actual performance results for a problem that clearly has the exponential worst case behavior in number of itemsets.I use pruning techniques to avoid measuring certain item set , while guaranteeing completeness. Selecting the Right Interestingness Measure for Association Patterns. Measures provides conflicting information about the interestingness of a pattern. We present an overview of various measure proposed in the statistics, machine learning and data mining literature. Efficient calendar based temporal association rule. It may not have high support & confidence for the entire transactional database. Improves an existing frequent pattern tree approach to discover temporal association rule to increase the memory performance. We have proposed algorithm gives an efficient time sensitive approach for mining frequent item in the dataset. Discovered rule is easier to understand. Temporal H-mine , which takes advantage of H-struct data structure and dynamically adjust link in the mining process. Mining frequent generalized patterns for Web personalization, Users' interests change from time to time. In the existence of this concept-drift issue, either web users should continuously update their preferences, or the system will eventually fail to present useful, personalized recommendations. Even the techniques that do not require explicit preference information (i.e. collaborative filtering) cannot provide recommendations for new items, in the absence of transaction history. We presented the FGP algorithm, which takes as input a database of transactions comprising items in a hierarchy and the hierarchy of items, and produces set of frequent item sets.Application of Data Mining Techniques for Medical Image Classification. The fact that the medical domain requires high accuracy and especially the rate of false negatives to be very low.The methods proposed in this paper classify the digital mammograms in two categories: normal and abnormal. The normal ones are those characterizing a healthy patient. The abnormal ones include both benign cases, representing mammograms showing a tumour that is not formed by cancerous cells, and malign cases, those mammograms taken from patients with cancerous tumours.

5. Modules Description

5.1. Identifying Real Dataset

It collects contextual information about user application requests submitted, through mobile devices, over the time period of three months (i.e., from August to October). From the whole context data collection, I generated three different time stamped datasets**.**

5.2. Discovering Pattern Analysis

In the following, a selection of the discovered HiGens is reported. Furthermore, possible scenarios of usage for the selected patterns suggested by the expert are discussed. The reported HiGens are classified based on the categorization. HiGens, selected by the expert as most notable patterns, are also Non-redundant HiGens. Indeed, the pruning of the not Non-redundant HiGens did not relevantly affect the effectiveness of the knowledge discovery process.

5.3. Implementing HIGENMINER Pruning Selectivity

HiGen mining may be addressed by means of a postprocessing step after performing the traditional generalized itemset mining constrained by the minimum support threshold and driven by the input taxonomy , from each timestamped dataset. However, this approach may become computationally expensive, especially at lower support thresholds, as it requires (i) generating all the possible item combinations by exhaustively evaluating the taxonomy , (ii) performing multiple taxonomy evaluations over the same pattern mined several times from different time periods, and (iii) selecting HiGens by means of a, possibly time-consuming, postprocessing step. T o address the above issues, a more effecient algorithm, called HiGen Miner, is proposed.

5.4. HIGENMINER Performance Analysis

The evaluation of the pruning selectivity of the HiGen Miner generalization procedure is performed on synthetic datasets. It compares the number of frequent itemset and generalized itemsets mined from each generated timestamped dataset with that extracted by the following generalized frequent itemset mining algorithms: (i) a traditional algorithm, i.e., Cumulate which performs an exhaustive taxonomy evaluation by generating all possible frequent combinations of generalized and not generalized itemsets, and (ii) a recently proposed support-driven approach to itemset generalization, i.e., GenIO which generates a generalized itemset only if it has at least an infrequent descendant. The set of experiments was performed on synthetic datasets.

6. Conclusion

This paper addresses the problem of change mining in the context of frequent itemsets. To represent the evolution ofitemsets in different time periods without discardingrelevant but rare knowledge due to minimum supportthreshold enforcement, it proposes to extract generalizeditemsets characterized by minimal redundancy (i.e., minimum abstraction level) in case one itemset becomesinfrequent in a certain time period. To this aim, two novelkinds of dynamic patterns, namely the HIGENs and theNONREDUNDANTHIGENs, have been introduced. Theusefulness of the proposed approach to support user andservice profiling in a mobile context-aware environment hasbeen validated by a domain expert.

7. References

1. Camp T., Boleng J., Davies V ., A Survey of Mobility Models for Ad Hic Network Research. Wireless Communication and Mobile Computing (WCMC): Special issue on Mobile Ad Hoc Networking: Research, Trends and Applications, 2(5), pp. 483–502, 2002.
2. R. Chandra, V. Ramasubramanian, and K. Birman, Anonymous gossip: Improving multicast reliability in mobile ad-hoc networks. Proc. 21st International Conference on Distributed Computing Systems (ICDCS),pp. 275–283, 2001.
3. D.E. Cooper, P. Ezhilchelvan, and I. Mitrani, High Coverage Broadcasting for Mobile Ad-hoc Networks. Proc. NETWORKING 2004, Lecture Notes in Computer Science, vol. 3042, pp. 100–111, 2004.
4. J.A. Davis, A.H. Fagg, and B.N. Levine, Wearable computers as packet transport mechanisms in highly-partitioned ad-hoc networks. Proc. 5th IEEE Intl. Symp. On Wearable Computers, 2001