Abstract

Many approaches in constraint based sequential pattern mining have been proposed and most of them focus only on the concept of frequency, which means, if a pattern is not frequent, it is removed from further consideration. Frequency is a good indicator of the importance of a pattern but in real life, however, the environment may change constantly and patterns discovered from database may also change over time. Therefore, the users' recent behavior is not necessarily the same as the past ones and a pattern that occurs frequently in the past may never happen again in the future. So in this paper we have considered recency constraint to overcome this problem. Also we have considered one more constraint, monetary constraint since for making effective marketing strategies it is important to know the value of customer on the basis of what they are purchasing periodically and how much they are spending. So this motivates to consider monetary value of customers for targeting profitable customers. Along with that we have included the concept of mining only target oriented sequential patterns which satisfy RFM constraints to find the happening order of a concerned itemsets only, for taking effective marketing decisions.
References

- Rakesh Agrawal Ramakrishna Srikant, "Mining Sequential Patterns", 11th Int. Conf. on Data Engineering, IEEE Computer Society Press, Taiwan, 1995 pp. 3-14.
- Han, J., Pei, J., Mortazavi-Asl, B., and Zhu, H., "Mining access patterns efficiently from web logs", In Proceedings of the Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Kyoto Japan, 2000.
- J. Pei, J. Han, B. Mortazavi-Asl, H. Pino, "PrefixSpan: Mining Sequential Patterns Efficiently by Prefix-Projected Pattern Growth", ICDE, 2001.
- Helen Pinto Jiawei Han Jian Pei Ke Wang, "Multidimensional Sequential Pattern Mining", In Proc. 2001 Int. Conf. Information and Knowledge Management (CIKM), Atlanta, GA, Nov. 2001 pp. 81-88.
- Yan, X., Han, J., and Afshar, R., "CloSpan: Mining closed sequential patterns in large datasets", In Third SIAM International Conference on Data Mining (SDM), San Fransico, CA, 2003, pp. 166-177.
- Jian Pei, Jiawei Han, Wei Wang, "Constraint-based sequential pattern mining: the pattern growth method", J Intell Inf Syst, Vol. 28, No. 2, 2007, pp. 133-160.
- J. Han, J. Pei, and X. Yan, "StudFuzz", Sequential Pattern Mining by Pattern-Growth: Principles and Extensions, 2005, pp. 183-220.
- Yen-Liang Chen, Mi-Hao Kuo, Shin-Yi Wu, Kwei Tang, "Discovering Recency, frequency, and monetary (RFM) sequential patterns from customers", purchasing

**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Sequential Pattern Mining  Prefixspan  Rf-sp  Rfm-sp