EFP-M2: Efficient model for mining frequent patterns in transactional database

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ABSTRACT
Discovering frequent patterns plays an essential role in many data mining applications. The aim of frequent patterns is to obtain the information about the most common patterns that appeared together. However, designing an efficient model to mine these patterns is still demanding due to the capacity of current database size. Therefore, we propose an Efficient Frequent Pattern Mining Model (EFP-M2) to mine the frequent patterns in timely manner. The result shows that the algorithm in EFP-M2l is outperformed at least at 2 orders of magnitudes against the benchmarked FP-Growth.

KEYWORDS:
Model; Frequent patterns; Data mining; Efficient

REFERENCES

1. Agrawal, R., Imielinski, T., Swami, A.: Database Mining: A Performance Perspective. IEEE Transactions on Knowledge and Data Engineering 5(6), 914–925 (1993)

2. Han, J., Pei, H., Yin, Y.: Mining Frequent Patterns without Candidate Generation. In: Proc. of the 2000 ACM SIGMOD, pp. 1–12. ACM, Texas (2000)

3. Liu, G., Lu, H., Lou, W., Xu, Y., Yu, J.X.: Efficient Mining of Frequent Patterns using Ascending Frequency Ordered Prefix-Tree. Data Mining and Knowledge Discovery 9, 249–274 (2004)

4. Koh, J.-L., Shieh, S.-F.: An Efficient Approach for Maintaining Association Rules Based on Adjusting FP-Tree Structures. In: Lee, Y., Li, J., Whang, K.-Y., Lee, D. (eds.) DASFAA 2004. LNCS, vol. 2973, pp. 417–424. Springer, Heidelberg (2004)

5. Li, X., Deng, Z.-H., Tang, S.: A Fast Algorithm for Maintenance of Association Rules in Incremental Databases. In: Li, X., Zaïane, O.R., Li, Z. (eds.) ADMA 2006. LNCS (LNAI), vol. 4093, pp. 56–63. Springer, Heidelberg (2006)