Abstract

In mobile database systems caching proved itself as an important technique to optimize the way a mobile database is used. The desired caching can be achieved by convincingly accurate prediction of data items for the present and future query processing. Prefetching is a commonly used strategy to cut down network resources consumed as well as the access latencies observed by end users. In this paper, we propose a Dynamic Markov Biclustering
Cache Replacement Policy (DMBCRP) which is a sophisticated combination of caching and prefetching for mobile database environment. We dynamically bicluster the data for location based services with second and/or first order Markov Model to predict the new data item(s) to be fetched based on user access patterns. The java implementation of DMBCRP, using trip data set and dynamic location specific resource biclustering results in different user access patterns and also user movement patterns.

Reference

- Vijay Kumar, Nitin Prabhu, Panos K Chrysanthis 2005 HDC- Hot Data Caching in Mobile Database System, IEEE.
- A.Kumar, M. Misra, A.K. Sarje 2006 A New Cache Replacement Policy for Location Dependent Data in Mobile Environment, IEEE.
- Dimitrios Katsaros, Yannis Manolopoulos Prediction in Wireless Networks by Markov Chains.
- Hazem Hiary, Qadri Mishael, Saleh Al-Sharaeh 2009 Investigating Cache Technique for Location of Dependent Information Services in Mobile Environments, European Journal of Scientific Research.
A Dynamic Markov Biclustering Cache Replacement Policy for Mobile Environment


Index Terms

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Key words

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