TECHNOLOGY

Interactive Query System for Reading Patterns in Time Series Data

OVERVIEW

For tasks involving retrieval of information from large data sets, query formulation is a crucial step in the process. Insufficiently precise queries often lead to empty result sets (zero-hit queries') or large result sets with potentially irrelevant results. This problem is particularly troublesome in data mining applications where query execution is computationally expensive. Strategies that increase query effectiveness will help reduce this overhead cost, thus streamlining the knowledge discovery process.

Research in information visualization has led to the development of the "overview first" strategy. Starting from a view that describes the data set as a whole, the user manipulates interface controls to specify constraints on the items of interest, thus reducing the size of the active data set. Real-time, interactive query processing and display update provide the user with feedback, as the items that are filtered out are removed from the display. Filter controls should be easily manipulated and modifiable, to encourage examination of alternatives. As actions throughout this process are low-cost and provide continuous feedback, users are never far from some data of interest (no "zero-hit" queries). If a given display contains too many items of interest, additional filters are added to reduce the result set to a manageable size (no 'million-hit' queries).

The University of Maryland is proud to offer Timeboxes an interactive mechanism for specifying queries on temporal data sets. Timeboxes software use rectangular regions that are placed and directly manipulated on a timetline, with the boundaries of the region providing the relevant query parameters.

The data and query envelopes, together with the linear list of graphed elements, provide the necessary overview. In particular. the envelopes plainly indicate where the user should not bother to place a new rectangular regions . Each rectangul;ar region is a new filter that restricts the data set resulting from the query formed by the pre-existing rectangular regions.

For visual information see http://www.cs.umd.edu/hcil/timesearcher/. For more information Office of Technology Commercialization at the Office of Technology Commercialization 301 405-3947 or by e-mail at otc@umd.edu.

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Information Technology

EXTERNAL RESOURCES

IS-2001-071