Abstract

This project closely models a framework to process Generic Location-Aware Rank Queries. A restaurant-finder application has been created to demonstrate how a Generic Location-Aware Ranked Query (GLRQ) can be processed by deploying three data structures in sync with each other – the synopses tree, the R-tree and inverted files. The synopses tree, created using histograms, handles the numeric attributes. The R-tree filters results based on their location, while the inverted files filter according to specified keywords (eg: lunch, breakfast, italian, karaoke), if any. Existing methods of processing such queries perform the pruning of the search space in two stages – first according to location and keyword, and then according to specified predicates (or vice versa), which is usually not efficient. The method used here trumps the aforementioned because the pruning is carried out simultaneously. This is reasonably faster, especially when working with large datasets, which has been experimentally demonstrated.
1. Xiping Liu, Lei Chen, Changxuan Wan, LINQ: A Framework for Location-aware Indexing and Query Processing in IEEE Transactions on Knowledge and Data Engineering, Vol. 27, No. 5, pp. 1288-1300.

Index Terms

Computer Science
Pattern Recognition

Keywords

Location-aware, synopses tree, IR-tree