چهارمین کنفرانس بین المللی
مطالعات نوین در علوم کامپیوتر و فناوری اطلاعات

4th International Conference
On New studies Of Computer And IT

FEBRUARY 24 ,2018

ISC

مشهد
۰۵ اسفند ماه ۱۳۹۶

Achieving more accurate results searching in Persian semantic web pages applying Markov's model and analysis of user's prefetch behavior

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Abstract

The enormous amount of information on the World Wide Web has led search engines to make use of advanced techniques to improve the efficiency of data recovery and deliver results that are better for the user. Extending queries is one of these techniques. The methods that have been developed so far to expand the queries, have mainly been developed based on a dictionary and only use linguistic features. In this article, first, by using the Markov's model, the possible pages and topics of the user request on Persian web pages were prefetched and integrated with emotional analysis and the pattern of user's survey behavior. Finally filtering on fetched results to display more accurate information, led to a method providing a semantic web search engine. To evaluate the proposed method, RapidMiner was used to simulate and C# implement the method. In the proposed method, the pre-fetched search time of Web pages was about 2.92 times more than the Trie-Traverse method, compared to the Listing method 2.25 times, and improved 1.53 times than the B^{ed}Tree method. Memory usage was improved by about 3.35 times compared with the Listing method and 2.01 times higher than the B^{ed}Tree method, which provides the performance of the proposed method.

Keywords: Search Engine, Semantic Web, Semantic Search, Markov Forecast, User Behavior Analysis, Persian Semantic Search.