

Web Recommendation System Using Web Usage Mining And Web Semantics

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Abstract Web-page recommendation plays an important role in intelligent Web systems. Useful knowledge discovery from Web usage data and satisfactory knowledge representation for effective Web-page recommendations are crucial and challenging. This paper proposes a novel method to efficiently provide better Web-page recommendation through semantic-enhancement by integrating the domain and Web usage knowledge of a website. A number of effective queries have been developed to query about these knowledge bases. Based on these queries, a set of recommendation strategies have been proposed to generate Web-page candidates. The recommendation results have been compared with the results obtained from an advanced existing Web Usage Mining (WUM) method. The experimental results demonstrate that the proposed method produces significantly higher performance than the WUM method. Many kinds of research have shown that people are more likely to trust each other with the same attitude toward similar things. In this paper, we consider seeking and accepting sentiments and suggestions in E-commerce systems somewhat implies a form of trust between consumers during shopping. Following this view of point, an E-commerce system reviews mining oriented sentiment similarity analysis approach is put forward to exploring users' similarity and their trust. We divide the trust into two categories, namely direct trust, and propagation of trust, which represents a trust relationship between two individuals. The direct trust degree is obtained from sentiment similarity, and we present an entity-sentiment word pair mining method for similarity feature extraction.

1. INTRODUCTION

WEB PERSONALIZATION

The process of providing the information that is related to user's current page is known as web personalization.

WEB USAGE MINING

It focus on determining patterns from user's browsing behaviour and use this pattern to personalize the browsing of the current user.

WEB SEMANTIC MINING

Semantic mining where the documents are clustered together based on their content and the user's recommended pages from the cluster to which the current document belongs.

1.2 HISTORY

Different efforts have been made to address the problem of information overload on the Internet. Web recommendation systems based on web usage mining try to mine users' behavior patterns from web access logs, and recommend pages to the online user by matching the user's browsing behavior with the mined historical behavior patterns. In this paper we propose effective and scalable technique to solve the web page recommendation problem. We use distributed learning automata to learn the behavior of previous users' and cluster pages based on learned pattern. One of the challenging problems in recommendation systems is dealing with unvisited or newly added pages. As they would never be recommended, we need to provide an opportunity for these rarely visited or newly added pages to be included in the recommendation set. By considering this problem, and introducing a novel Weighted Association Rule mining algorithm, we present an algorithm for recommendation purpose. We employ the HITS algorithm to extend the recommendation set. We evaluate proposed algorithm under different settings and show how this method can improve the overall quality of web recommendation.

LITERATURE SURVEY

2.1. In the past few years many researchers devoted their work to overcome these issues. Web access sequence (WAS) in Web usage data can be represented approaches based on tree structure and probabilistic model

[1]. These approaches learn from the training datasets to build the transition links between Web-pages. By using these approaches, given the current visited Web-page (referred to as a state) and k previously visited pages (the previous k states), the Web-page(s) that will be visited in the next navigation step can be predicted. The performance of these approaches depends on the sizes of training datasets. The bigger the training dataset size is, the higher the prediction accuracy is. However, these approaches make Web-page recommendations solely based on the Web access sequences learnt from the Web usage data. Therefore, the predicted pages are limited within the discovered Web access sequences, i.e., if a user is visiting a Web-page that is not in the discovered Web access sequence, then these approaches cannot offer any recommendations to this user. We refer to this problem as “new-page problem” in this study.

2.2 Depending on the domain of interest in the system, we can reuse some existing ontologies or build a new ontology, and then integrate it with Web mining. For example, ontology concepts are used to semantically enhance Web logs in a Web personalization system [29]. In this system, ontology is built with the concepts extracted from the documents, so that the documents can be clustered based on the similarity measure of the ontology concepts. Then, usage data is integrated with the ontology in order to produce semantically enhanced navigational patterns. Subsequently, the system can make recommendations, depending on the input patterns semantically matched with the produced navigational patterns.

2.3 The literature review covers the background, latest development of and related techniques for semantic-enhanced recommender systems. Web mining (WM) is the process of discovering useful knowledge from Web data. Depending on different types of Web data, appropriate mining techniques are selected. There are three main broad categories of Web mining.

- » Web content mining (WCM) is used to mine Web content, such as HTML or XML documents.
- » Web structure mining (WSM) focuses on Web structure, such as hyperlinks on Web-pages.
- » Web usage mining (WUM) is applied to Web usage data, such as Web logs or clickstreams, from a website.

2.4 Domain ontology is commonly used to represent the semantics of Web-pages of a website. It has been shown that integrating domain knowledge with Web usage knowledge enhances the performance of recommender systems using ontology-based Web mining techniques [4-6]. Integrating semantic information with Web usage mining achieved higher performance than classic Web usage mining algorithms [5]. However, one of the big challenges that these approaches are facing is the semantic domain knowledge acquisition and representation. How to effectively construct the domain ontology is an ongoing research topic.

3. SYSTEM ANALYSIS:

3.1 EXISTING SYSTEM:

3.2

It focus only to improve the quality of web personalization but none of them have experimented with considering the time spent on the web pages. Personalization based only on the web usage mining has the shortcoming of not taking the context of the web page into account. They proposed an approach ISTS that can exploit two factors from online social network. The sentiment orientation in friends posts about certain items and the trust relations between friends and a promising methodology to handle the trust mechanism for P2P network.

3.3 PROPOSED SYSTEM:

The system uses the information from web usage mining, web semantics and time spent on web pages to improve the recommendations. It focus on a system which evaluates user's interest based on combination of other user's browsing pattern, the content of web pages and the time spent by users on web pages.

CONCLUSION

conclusion, this paper has presented a new method to offer better Web-page recommendations through semantic enhancement by three new knowledge representation models. Two new models have been proposed for representation of domain knowledge of a website. One is an ontology-based model which can be semi-automatically constructed, namely DomainOntoWP, and the other is a semantic network of Web-pages, which can be automatically constructed, namely TermNetWP. A conceptual prediction model is also proposed to integrate the Web usage and domain knowledge to form a weighted semantic network of frequently viewed terms, namely TermNavNet. A number of Web-page recommendation strategies have been proposed to predict next Web-page requests of users through querying the knowledge bases. The experimental results are promising and are indicative of the usefulness of the

proposed models.

FUTURE ENHANCEMENT

The future work, a key information extraction algorithm will be developed to compare with the term extraction method in this work, and we will perform intense comparisons with the existing semantic Web-page recommendation systems.

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