

Chapter 13

Effectiveness of Web Usage Mining Techniques in Business Application

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ABSTRACT

Web usage mining techniques and applications across industries is still exploratory and, despite an increase in academic research, there are challenge of analyze web which quantitatively capture web users' common interests and characterize their underlying tasks. This chapter addresses the problem of how to support web usage mining techniques and applications across industries by combining language of web pages and algorithms that used in web data mining. Existing research in web usage mining techniques tend to focus on finding out how each techniques can apply in different industries fields. However, there is little evidence that researchers have approached the issue of web usage mining across industries. Consequently, the aim of this chapter is to provide an overview of how the web usage mining techniques and applications across industries can be supported.

INTRODUCTION

Nowadays, with the evolution of technology, supported by global and speedy communication network online Web services, has been growth rapidly in the form of created content presents new opportunities and challenges to both producers and consumers of information, the volumes of click stream and client information gathered by Web-based associations in their everyday operations has come to galactic extents.

Web Usage Mining deals with understanding user behavior in interacting with the web site. The aim is to obtain information that may assist web site recognition to better suit the user. The logs include

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information about the referring pages, user identification, time a user spends at a site and the sequence of pages visited (Rani, 2013).

Data extraction is a field that is concerned with obtaining information from different online databases and services web resources including websites. According of the dynamic nature of the World Wide Web so it become important to find tools for data extraction. end users and application programs have some difficulties when it comes to finding useful data (MOHAPATRA, 2004)

Since 1980 the attempt researches to extract data from the Web are. Two of strategies emerged learning techniques and knowledge engineering techniques also called learning-based and rule-based approaches, respectively. These approaches depends on domain expertise it need programming experience and a good knowledge of the domain in which the data extraction system (Ferrara, E., De Meo, P., Fiumara, G., & Baumgartner, R., 2014)

On the same way, (Tomasz Kaczmarek,et al) in ((Kaczmarek, 2010)) present method part of the extra Spec system called EXT was based on hierarchical execution of XPath commands and regular expressions depending on the structure of processed documents. EXT is capable of processing webpages written in the Polish language in order to extract the information relevant for the needs of expert programmer and team building. But this method not includes development of text processing techniques to cope with fields that are manually filled by humans (Kaczmarek, 2010)

Also web usage mining benefits the capitalist people in some area such as business, industrials and insurance to take a good decision by apply web usage mining recommender system.

Recommender systems have become an important research area since the appearance of the first papers on collaborative filtering in the mid-1990s, The interest in this area still remains high because it constitutes a problem-rich research area and because of the abundance of practical applications that help users to deal with information overload and provide personalized recommendations, content, and services to them. although the roots of recommender systems can be traced back to the extensive work in cognitive science, approximation theory, information retrieval, forecasting theories, and also have links to management science and to consumer choice modeling in marketing, recommender systems emerged as an independent research area in the mid-1990s when researchers started focusing on recommendation problems that explicitly rely on the ratings structure (Mahmood A. Mahmood N. E.-B., 2014).According that recommender system tends to make use of different sources of information (collaborative, social, demographic, content, knowledge-based, geographic, sensors, tags, implicit and explicit data acquisition, etc.), An important research subject in the recommender system field focuses on providing explanations that justify the recommendations the user has received. This is an important aspect of a recommender system because it aids in maintaining a higher degree of user confidence in the results generated by the systems (Mahmood A. Mahmood N. E.-B., 2014) Mahmood and et al in (Mahmood A. Mahmood E. A.-S.-B., 2013)).presented Recommender System for Ground-Level Ozone Predictions. The obtained results demonstrate the effectiveness and the reliability of the proposed recommender system. Resulted experimental values of ground-level Ozone predicted by the proposed recommender system showed similar behavior as the actual tested values of the ground-level Ozone dataset.

Samar and et al in (Samar Mahmoud, 2013) presented An Intelligent Recommender System for Drinking Water Quality to evaluate the performance of the presented recommender system, 5 parameters developed and validated between the year 2000 to 2013, were used. The initial seven years of data was used to develop the forecasting models and the remaining data was used for testing and verifying these models. The obtained results demonstrate the effectiveness and the reliability of the proposed recommender system. Based on the data resulted, the average PH level prediction in a certain time is charac-

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