Abstract

Most of the websites nowadays undergoes changes in data and contents at a high frequency. The important task for a recommender system is to not only utilize all available information such as context and content for producing recommendations but also consider the risk associated with the generation of the recommendation results In this paper we will discuss a framework for a risk aware web based recommender system (RAWRS).

This system aims at proposing more relevant information to the user with the help of user specific data such as website navigation pattern, dwell time, search requests and click through rate (CTR). By establishing the relationship between the user specific data and the content of the website, this system evaluates the risk associated with the recommendation results. It will be further established in the paper that tuning the recommendation results with the corresponding risk factor enhances the user experience.

Proposal Approach

We intend to use the following parameters together with the content based recommendation in order to evaluate the risk associated with the recommendation.

\item Web logs and User data

It includes user navigation logs on the website, location of the user and other user information which can be implicitly or explicitly obtained from the user.

Dwell Time

It is the length of time that elapses from the first moment a web user enters a particular website until the time that user leaves that website. Average dwell time is a comparable measure to page views per session, except that dwell time is measured in time and page views per session are measured in, well, a count of page views. Both are a measure of the degree a site engages a typical user in a single sitting. The noteworthy distinction is that these two measurements do not always correlate in proportion with one another when you compare different sites.

Click through rate (CTR)

It is the number of users that click on a specific link out of the total users that view a page, email, or advertisement. It is commonly used to measure the success of an online advertising campaign for a particular website as well as the effectiveness of email campaigns

Search Query requests

It is the search query made by the user on the website.

User data

**Approach**

In order to develop a model for the risk aware web recommender system we need to gather some parameters on which the output of the system depends. The selected parameters are web navigation logs, dwell time calculation, click through rate, search queries and web page content. After the determination of the parameters that affect the design of the system, we need to get the data from these parameters for establishing rules and relationships amongst various entities in the system.

Models and Abstraction

The information extracted from the system parameters will be utilized to develop the model of the system.

Verification and Validation

In order to test the validity of the system, we will discuss the model in terms of its scope of implementation in the field of pharmacy product recommendation and stock recommendation for the portfolio management.

Domain Specific Language (DSL)

We discuss high-level models using domain specific languages. Many interesting issues exist in the area of DSL design and development. In the design process, non-trivial choices are to be made, each of which can have an effect on the usability or even viability of a DSL. The purpose of the domain specific language for our system is to allow its users to implement a risk aware recommendation system with reduced complexity of achieving. Domain specific languages aim at raising the abstraction level, thereby lowering the complexity of achieving a specific task.