

# **PERSONALIZATION IN NATURAL LANGUAGE PROCESSING**

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**Abstract:** Web services technology is one of the widely used solutions of information by all users. In these days we can see, the user rely on web for the required information, but the currently available search engines are not giving the appropriate results, because of using the sophisticated document indexing algorithms, and these algorithm gives a long list of results, and most of the results are not relevant to the users. Since a user has his own view and goal when searching for information, personalized search can provide the results that almost satisfy user's specific view and goals. Personalization of web search is the method which helps the user to retrieve the relevant information according to user's interests which may be inferred from user's actions, browsed documents or past query history etc. This paper conducts a survey of how personalization can give useful knowledge to the user.

**Keywords:** Web search, Context, History, Search Engines, Computer science, Privacy.

## **1. INTRODUCTION**

When we search in web browsers it provides search results in the organized way from the web. But sometimes results provided by the browser might not be helpful for the user as the search engine fails to provide relevant results. A particular word in a language that gives different meaning. So the difference can be pointed only by the user. For example when user searches for 'apple', in web browsers it can be apple iPhone or it can be the apple fruit. So need for the personalized Web Search arises to give relevant results for the user.

Peoples are getting so much dependent on web browsers for all the information.

Users enter their queries into web browsers, relevant results will be shown to users by browsers. In web search what the user enters into the browser as his/her query is the key. Without user Interaction with browsers, browsers are useless. Sometimes users failed to enter proper sentences, or it will be ambiguousness, or incomplete.

The most common problem with the web browsers is they are not much bothered about the individual User requirements. Because of that when the user tries to enter the query into the browsers provides results based on Query entered. Some information systems planned to understand such adaptive systems have been developed that personalize information or present more appropriate information for users. Three categories of Web search systems present such information: (a) systems that make use of relevance feedback, (b) Systems in which users register their interest or demographic information, and (c) systems that suggest Information according to users' ratings. In these systems, users are required to register personal Information for instance, their interests, age, and so on, or users are required to give feedback on Relevant or irrelevant results, ratings on a scale basis from 1 (very bad) to 5 (very good). This is time Consuming and hence users desire to use some other easier methods. To avoid these difficulties, some new approaches have to be proposed to reduce the difficulties of users.

In this paper we are targeting for a solution for these problems. Personalization is a concept that helps to solve the problem that is faced by the users while they search for something. Personalization also helps the user to retrieve the information related to their previous searches. Personalization is used to tailor information to an individual user's specific needs and preferences. This paper gives you an idea that what is personalization and how it can be implemented. In the future personalization plays an important role.

## **2. PERSONALIZATION**

Personalization of web query items is characterized as any activity to discovering more important pages in indexed lists list for specific client or an arrangement of clients. The goal of the personalization is to give data that the client require precisely without anticipating from the client to request it unequivocally. There are a few methods for accomplishing this. To accomplish viable personalization concentrate must be on the client needs, inclinations, interests, aptitude, workload, errands, fitting data either to extensive or littler intrigue gatherings.

Web personalization is one of the quickest developing sections of the Internet economy. Since it can help in decreasing data over-burden and give clients a more redid experience of a site, look personalization can lessen dawdle to discover asked for data on the web.

Personalization can be of two sorts: setting focused and individual situated. Setting focused works in light of the variables like the idea of data accessible, the data presently being analyzed, the applications being used, when, et cetera. Individual situated inquiry envelops different components of personalization, for example, client's objectives, earlier and inferred learning, past

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data looking for practices, among others. These components are relevant to any Personalized Information Retrieval framework.

The components that influence customized web seek is extensively partitioned into 2 classes. In that initial one is spatial factors, for example, sought inquiries, site pages went to, semantics between the looked question and the went to website pages and grouping of the page get to perusing practices Context of inquiry, User interests, Relation between setting of pursuit and the data at present being inspected. What's more, the second factor considers fleeting variables like Page-see time, Query use time and User's day of work in interests.

Personalization additionally can be accomplished by content-based recommender frameworks, which inconspicuously watch clients peruse the web, and prescribe new pages that associate with a client profile. Another approach to suggest pages is by utilizing community oriented recommender frameworks which does this by requesting that individuals rate unequivocally pages and afterward prescribe new pages that comparable clients have appraised exceptionally.

Web seek personalization is still in its outset. Certifiable frameworks that claim to do personalization are frequently really offering what we would call customization the capacity for clients to construct profiles of inclinations for the substance they need to see and the design it ought to be shown in, with clients regularly looking over a set number of conceivable outcomes. For instance, Yahoo! enables clients to determine which news, stock costs, climate, and games scores they need to be shown on their Yahoo! website pages. These inclinations are put away in a profile that is utilized to make the pages each time the client visits. This is the thing that we call customization as opposed to personalization.

### 3. WEB PERSONALIZATION APPROACHES

Personalization can be performed on advertising, recommended items, screen layouts, menus, news and articles, or anything else can be accessed via web pages or any software applications.

#### 3.1 Web personalization and user profile

Different users will be having their own requirements when they search in web browsers. To provide an effective personalized web results browsers can make use of creation of profile for all the users who uses it and it must include user preferences. For this we can make use of machine learning techniques. One of the important approach for creation of user profile is k-Nearest Neighbors' method which is most effective and robust.[2][3][4][5][6][7].

#### 3.2 Semantic based personalized search

Personalized search utilizes the user context in the form of profile to increase the information retrieval accuracy with user's interests. Recently, semantic search has greatly attracted researchers' attention over the traditional keyword-based search because of having capabilities to figure out the meaning of search query, understanding users' information needs accurately using semantic web technology.[2][3][4][5][6][7].

#### 3.3 Community based personalized search

There are also some approaches that personalize search results for the preferences of a community of like-minded users. These approaches are called community-based personalized web search or collaborative web search. In a community-based personalized web search, when a user issues a query, search histories of users who have similar interests to the user are used to filter or re-rank search results. For example, documents that have been selected for target query or similar queries by the communities are re-ranked higher in the results list.[2][3][4][5][6][7].

Top factors in personalized web search are.

- ❖ Location data: using the location data, browser can provide local listings grouped with search results.
- ❖ Search History: user preference can be understood by using search history.
- ❖ Web History: Users most searched website will appear on the top of the search results than other search results.
- ❖ Social Networks: Using user information from the social networks it becomes easier to personalize user preference.

### 4. EVALUATION ASPECTS

The main characteristic of the evaluation of personalized search systems is that the relevance assessments are provided subjectively by each user. Based on the relevant assessment given by the user which helps to provide the result depends on the search topics and the interests of the users. But if we considered the same relevant factors for the other user, then result which is considered as relevant for one user can be irrelevant for other users. Because, for different user the relevant factors also different. The same result from the relevant assessment can be irrelevant for the other user. So it's recommended to use an additional control mechanism that helps to provide the results.

In this evaluation it provides a methodology where the user gets the results by providing some answers to the question related to the search topic. So it helps us to know that the user is checking the result to some degree. The questions that are asked to the user depend on the history and previous searches. So for each user the questions will change. In this evaluation we use a special work units that contains a control question in order to ensure us that the user inspects the list of results. This helps the users who are making random relevant assessment will end up marking this results as relevant. These control questions are different for different users.

The evaluation of personalization techniques have to meet the requirements like solving the ambiguity in search topics, were the search topics can have various results in different area, which gives irrelevant results to the users. In order to provide the relevant results, we have to reduce the degree of ambiguity. So we use personalization technique to solve the ambiguity.

The user information has a major role in the personalization, it serves as the input of the evaluated personalization mechanism. We can get the user information two ways, an ad-hoc pre-questionnaire which relates the user interests to the different possible meanings of a specific topic, and a more general and realistic user representation based on the social profile of the user. The former is an easy way of obtaining the user information, but there is a problem it has the additional cost of requiring the user to fill the information. So for extend it's not a good idea. The other way which is trend on the personalization system. By analyzing the social behavior of the user. More specifically, we extract a user profile representation from the annotation actions of the user in social tagging services such as Delicious. The basic problems of this method are the user participation in these types of social services is limited [7].

## 5. CONCLUSION

There are number of researches which are used to minimize some of the drawbacks of personalized web search. Some of the web personalization approaches we used are we personalization and user profile, semantic based personalized search, community based personalized web searches and the methodologies that is used is, getting the results by providing some answers to the question related to the search topic by the users.

As personalized search had different effectiveness for different kinds of queries, queries should not be handled in the same manner with regard to personalization. No personalization algorithms can outperform others for all queries. Different methods have different strengths and weaknesses. One of the well-known issues in personalized web search is violation of privacy. It also results into the ethical and security problems. Another limitation is the needs of the users are not static, it continuously changes.

This research only approximated the gain of the user and has not taken into account the cost of losses that could be encountered in the case that the users do not find what they are looking for in the personalization directory. The proposed methodology provides promising research direction, where many new issues arise based on an analysis regarding the parameters of the community models. Furthermore other knowledge discovery methods could be adopted to the task of discovering community directories and compared to the methods presented in this research. In addition, other classification methods could be applied for the mapping of the web pages to the web directory. This research contribution and its results are very promising to the web personalization techniques of web usage mining. Every work should have future perceptible for its growth and development. This research also works in the near future.

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