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Intelligent Sementic Web Search Engine

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ABSTRACT

The World Wide Web (WWW) allows the people to share the information (data) from the large database repositories globally. The amount of information grows billions of databases. We need to search the information will specialize tools known generically search engine. There are many of search engines available today, retrieving meaningful information is difficult. However to overcome from it , this paper we present survey on the search engine generations and the role of search engines in intelligent web and semantic search technologies.

INTRODUCTION

The Semantic Web is an extension of the current Web [1] that allows the meaning of information to be precisely described in terms of well-defined vocabularies that are understood by people and computers. On the Semantic Web information is described using a new W3C standard called the Resource Description Framework (RDF). Semantic Web Search is a search engine for the Semantic Web. Current Web sites can be used by both people and computers to precisely locate and gather information published on the Semantic Web. Ontology [2] is one of the most important concepts used in the semantic web infrastructure, and RDF(S) and OWL (Web Ontology Languages) are two W3C recommended data representation models which are used to represent ontologies.

With the keywords based searches they usually provide results from blogs (if available) or other discussion boards. The user cannot have a satisfaction with these results due to lack of trusts on blogs etc. To overcome this problem in search engines to retrieve relevant and meaningful information intelligently, semantic web technology deals with a great role [3]. Intelligent semantic technology gives the nearer to desired results by search engines to the user.

In this paper, we will make a preliminary survey over the existing literature regarding intelligent semantic search engines and semantic web search. By classifying the literature into few main categories, we review their characteristics respectively.

BACKGROUND

Current web is the biggest global database that lacks the existence of a semantic structure and hence it makes difficult for the machine to understand the information provided by the user. When the information was distributed in web, we have two kinds of research problems in search engine i.e.

How can a search engine map a query to documents where information is available but does not retrieve in intelligent and meaning full information? The query results produced by search engines are distributed across different documents that may be connected with hyperlink. How search engine can recognize efficiently such a distributed results?

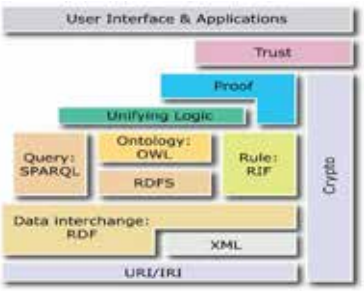

Fig.1. Semantic Web Frame Work

Current Web & Limitations

Present World Wide Web is the longest global database that lacks the existence of a semantic structure and hence it becomes difficult for the machine to understand the information provided by the user in the form of search strings. As for results, the search engines return the ambiguous or partially ambiguous result data set; Semantic web is being to be developed to overcome the following problems for current web.

- Ambiguity of information resulting from poor interconnection of information.
- Automatic information transfer is lacking.
- Usability to deal with enormous number of users and content ensuring trust at all levels.
- Incapability of machines to understand the provided information due to lack of a universal format.

Hakia [7] is a general purpose semantic search engine that search structured text like Wikipedia. Hakia calls itself a "meaning-based (semantic) search engine" [8]. They're trying to provide search results based on meaning match, rather than by the popularity of search terms. The presented news, Blogs, Credible, and galleries are processed by hakia's proprietary core semantic technology called QDEXing [7]. It can process any kind of digital artifact by its Semantic Rank technology using third party API feeds [9].

Semantic web [4] [5], can solve the first problem in web with semantic annotations to produce intelligent and meaningful information by using query interface mechanism and ontology's. Other one can be solved by the graph-based query models [6].

INTELLIGENT SEMANTIC WEB

Intelligent Search Engine

This research has combine description logic inference system and digital library ontology to complete intelligent search engine . According to search engine mechanism, presenting demands and a formula evaluating present related technology of that can solve and promote the efficiency of search engine, and formulating the demands of wisdom search engine.

Inamdar and Shinde discussed agent based intelligent search engine system for web mining. Most of the web search engines make use of the text only on a web page. Personal agents can use different internal and external sources of information. The personal agents are software agents running on the server . Patrick Lambrix and Nahid Shahmehri and Niclas Wahllof presents a search engine is described as one that tackles the problem of enhancing the precision and recall for retrieval of documents. The main techniques that they apply here are the use of subsumption information and the use of default information. Satya Sai Prakash , present architecture and design specifications for new generation search engines highlighting the need for intelligence in search en-

gines and give a knowledge framework to capture intuition. Simulation methodology to study the search engine behavior and performance is described. Dan Meng, Xu Huang discussed an interactive intelligent search engine model based on user information preference . Xiajiong Shen Yan Xu Junyang Yu Ke Zhang forward an intelligent search engine where Information Retrieval model is found on formal context of FCA (formal concept analysis) and incorporates with a browsing mechanism for such a system based on the concept lattice. [10 - 16].

TYPES OF SEMANTIC SEARCH ENGINES

Semantics has been driving the next generation of the Web as the Semantic Web, where the focus is on the role of semantics for automated approaches to exploiting Web resources. 'Semantic' also indicates that the meaning of data on the web can be discovered not just by people, but also by computers. Semantic web is being developed to overcome the following main limitations of the current Web [17].

Semantic search engines :

Currently many of semantic search engines are developed and implemented in different working environments, and these mechanisms can be put into use to realize present search engines.

Bhagwat and Polyzotis propose a Semantic-based file system search engine- Eureka, which uses an inference model to build the links between files and a File Rank metric to rank the files according to their semantic importance [18].

Wang et al. project a semantic search methodology to retrieve information from normal tables, which has three main steps: identifying semantic relationships between table cells; converting tables into data in the form of database; retrieving objective data by query languages .

Ontology search ngines:

Maedche et al. designed an integrated approach for ontology searching, reuse and update .Georges Gardarin et al. discussed a SEWISE is an ontology-based Web information system to support Web information description and retrieval. According to domain ontology, SEWISE can map text information from various Web sources into one uniform XML structure and make hidden semantic in text accessible to program.

SOME COMMON ISSUES

a) **Low precision and high recall :** Some Intelligent semantic search engines cannot show their significant performance in improving precision and lowering recall. In Ding's semantic flash search engine, the resource of the search engine is based on the top-50 returned results from Google that is not a semantic search engine, which could be low precision and high recall .

b) **Identity intention of the user :** User intention identification plays an important role in the intelligent semantic search engine. or example, in chiung-Hon leon lee introduced a method for analyzing the request terms to fit user intention, so that the service provided will be more suitable for the user .

c) Individual user patterns can be extrapolated to global users :In early search engine that offered disambiguation to search terms. A user could enter in a search term that was ambiguous (e.g., Java) and the search engine would return a list of alternatives (coffee, programming language, island in the South Seas).

d) Inaccurate queries :We have user typically domain specific knowledge. And users don't include all potential Synonyms and variations in the query, actually user have a problem but aren't sure how to phrase.

CONCLUSIONS

In this paper, we make a brief survey of the existing literature regarding intelligent semantic search technologies. We review their characteristics respectively. In addition, the issues within the reviewed intelligent semantic search methods and engines are concluded based on four perspectives differentiations between designers and users' perceptions, static knowledge structure, low precision and high recall and lack of experimental tests. In the future, our work will focus on the deeper and broader research in the field of intelligent semantic search, with the purpose of concluding the current situation of the field and promote the further development of intelligent semantic search engine technologies.

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