

A Web Semantic Word Search

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Abstract

This paper focuses about the ontology-based retrieval system and indexing for keyword-based semantics in the Java learning content domain. The traditional keyword searching mechanism has been unable to meet the needs of current expert knowledge base in searching based on semantic. Semantic search has been one of the motivations of the Semantic Web since it was envisioned. The system focuses on semantic search, usability, scalability, and data retrieval performance. The system uses specific domain information extraction to improve its performance, provide matchmaking to users, and subsequently rank search results. Scalability is achieved by adapting the semantic indexing approach. The implementation of the system involved Semantic Web approach. The performance of this approach was evaluated in comparison with traditional system approach. Detailed evaluation is provided to observe performance by query expansion and specific information extraction. The system will be of great use to the developers and researchers who work on web. But my area of work is for the process of evaluation, in the examination like paper correction system.

Introduction

The Semantic Web is a mesh of information linked up in such a way as to be easily process able by machines, on a global scale. You can think of it as being an efficient way of representing data on the World Wide Web, or as a globally linked database.

Data that is generally hidden away in HTML files is often useful in some contexts, but not in others. The problem with the majority of data on the Web that is in this form at the moment is that it is difficult to use on a large scale, because there is no global system for publishing data in such a way as it can be easily processed by anyone. The problem with that is that, in some contexts, it is difficult to use this data in the ways that one might want to do so.

So the Semantic Web can be seen as a huge engineering solution... but it is more than that. We will find that as it becomes easier to publish data in a re-purposed form, so more people will want to publish data, and there will be a knock-on or domino effect. We may find that a large number of Semantic Web applications can be used for a variety of different tasks, increasing the modularity of applications on the Web. But enough subjective reasoning onto how this will be accomplished.

System model

Semantic Web. The Semantic Web is a Web with a meaning. It describes things in a way that computer scan understand. It is an extension to the normal Web and is not about links - relationships between things and its properties. Conventional Web consists of human operator and uses computer systems for tasks like finding, searching and aggregating whereas Semantic Web is the one understood by computers, does the searching, aggregating and combining information without a human operator. It is easily process able by machines, on a global scale. It is the efficient way of representing data on the World Wide Web.

Problem Definition

In this information age, it is a deplorable state that despite the overload of information, we regularly fail to locate relevant information. Particularly, in the field of education, several tera bytes of content related to various educational institutions such as universities, colleges are uploaded on the internet every week, and the demand for such resources is always on the rise. But access to this information using a generic search engine is not satisfactory in terms of the relevance of links and the overtime on bad links. This can be attributed to several factors, the most important being the absence of identification of context and semantics of the user query in fetching the required results.

In order to overcome these critical issues the proposed system Semantic Information Extraction in University Domain (SIEU) is designed. SIEU retrieves the semantically relevant results for the user query by considering the semantics and context of the query. The Semantics of the query is analyzed by means of the following procedures:

- The user query is initially analyzed grammatically and syntactically by parsing.
- The related syn sets for the keywords in the query are retrieved.

- The domain related keywords in the ontology are retrieved to form the refined query.

The results obtained in SIEU are more relevant by adopting the following procedure

- The refined queries that serve as the input for the search engine are formed based on the semantic analysis of the user query.
- The web links retrieved for all the newly formed refined queries are re-ranked based on the domain specific information.

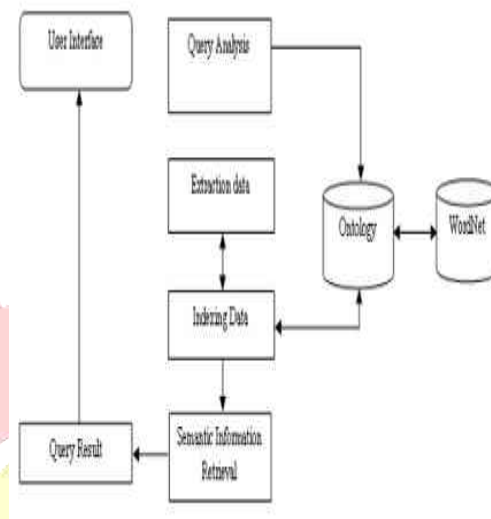
In this way SIEU provides a semantic search that retrieves the appropriate results for the user query.

Proposal

The system of the concept in semantic web enrich the evaluation method such that the paper correction method, it involves the following process, they are

- Initially the Key points for the questions are to be stored.
- Later the students answer script is provided
- Based on the question and key word given the mark gets evaluated.
- Here the semantic is used in case of any word have a similar meaning but different word provides the formation of ontology expressions.

The approach in semantic web search arises, SWS which is an upcoming in the area of web search which combines Natural Language Processing and Artificial Intelligence. The objective of the work done here is to design, develop and implement a semantic search engine- SIEU (Semantic Information Extraction in University Domain) confined to the university domain. SIEU uses ontology as a knowledge base for the information retrieval process. It is related to the keyword based search. Here the query is analysed both syntactically and semantically. The developed system retrieves the web results more relevant to the user query through keyword expansion. The results obtained here will be accurate enough to satisfy the request made by the user. The level of accuracy will be enhanced since the query is analysed semantically.



Semantic Document Retrieval Model

Conclusion

Semantic relevant information has been retrieved as a result of this system. To add on to it many more services are to be added. Location based information retrieval is an additional feature where we have planned to use Google maps for this purpose by means of which our system gets enhanced with this location independent feature. And invocation of web services may be provided to the users if in case there exists a web service related to their query which could be made possible with the help of RSS feeds. Thus we believe an information system with these enhanced features will be developed under university domain.

In this case the Semantic Web will contain two kinds of documents. Some will be conventional text documents enriched by annotations that provide metadata as well as machine interpretable statements capturing some of the meaning of the documents' content. Information retrieval over collections of these documents offers new challenges and new opportunities. The framework for integrating search and inference in this setting that supports both retrieval-driven and inference-driven processing, uses both text and markup as indexing terms, exploits today's text-based Web search engines, and tightly binds retrieval to inference. While many challenges must be resolved to bring this vision to fruition, the

benefits of pursuing it are clear. The Semantic Web is also likely to contain documents whose content is entirely encoded in an RDF based markup language such as OWL. Finally, there is also a role for specialized search for keyword that is designed to work for the proposed system which is the paper evaluation system based on the keyword.

Reference

- [1] Thi Thanh Sang Nguyen, Hai Yan Lu, and Jie Lu “Web-Page Recommendation Based on Web Usage and Domain Knowledge” *IEEE Transactions on Knowledge and Data Engineering*, vol. 26, no. 10, October 2014.
- [2] Li Ding, Rong Pan, Tim Finin, Anupam Joshi, Yun Peng, and Pranam Kolari “Finding and Ranking Knowledge on the Semantic Web” preprint from the *Proceedings of the 4th International Semantic Web Conference, Galway November 2005*, Springer-Verlag.
- [3] Tim Finin¹, James Mayfield², Anupam Joshi¹, R. Scott Cost² and Clay Fink “Information Retrieval and the Semantic Web” University of Maryland, Baltimore County Baltimore MD 21250 USA.
- [4] Xiaogang Wang, Ke Liu, Xiaou Tang “Web Image Re-Ranking Using Query-Specific Semantic Signatures” *IEEE Transactions on Pattern Analysis and Machine Intelligence* (Volume:36, Issue4) April 2014, DOI:10.1109/TPAMI.2014.2374611
- [5] Alberto Abelló, Oscar Romero, Torben Bach Pedersen, Senior Member, IEEE, Rafael Berlanga, Victoria Nebot, María José Aramburu, and Alkis Simitsis “Using Semantic Web Technologies for Exploratory OLAP: A Survey” *IEEE Transactions on Knowledge and Data Engineering*, vol. 27, no. 2, February 2015.
- [6] Joel Coffman, Alfred C. Weaver “An Empirical Performance Evaluation of Relational Keyword Search Systems” *IEEE Transactions on Knowledge and Data Engineering*, (Volume: 26, Issue: 1) Year:2014