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Enhancement of Document Searching Attributes Using Web Document Annotation

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***Abstract*—Now-a-days the existing scenario on searching some type of a particular document is a primary condition. To get such accumulated search output, so we try to have maintained documents and data in smart approach i.e. stored data in structured and unstructured format. A large number of organizations today generate and share textual descriptions of their products, services, and accomplishments. Such collected works of textual data restrain important amount of arrangement information, which residue hidden in the formless text. While information withdrawal algorithms facilitate the extraction of structured relations, they are repeatedly costly and incorrect, mainly when working on peak of text that does not contain any instances of the targeted structured information.**

***Index Terms*— Semantic, Annotation Systems, Ontology.**

I. INTRODUCTION

A collection of enormous, big textual data restrains important quantity of structured information, which continues concealed in shapeless text. Relevant information is at all times complicated to get in these documents. Annotations are a normal way to confirmation remarks and thoughts in definite circumstances inside a document. There are many data or document sharing platforms like news blogs, social networking sites, etc. through which huge amount of data are uploaded and shared on a daily basis. Effective handling of this data is thus necessary for searching and retrieving the documents or information present in the documents efficiently. The increased necessity for intelligent knowledge management has led to the advent of semantic web [1]. The semantic web which is an extension of the existing web provides an easier way for sharing, searching and retrieval of information from the web. The basic ideology of semantic web is to add semantic metadata or annotations to the documents or part of a document.

The queries of user can be from a few words to multi-sentence descriptions of information need. Document retrieval is sometimes referred to as a branch of Text Retrieval, or Text Retrieval. Such difficulties results in very basic annotations of Text Retrieval, if any at all, those are often limited to simple keywords. Such straightforward annotations make the investigation and querying of the data bulky. Users are often incomplete to simple keyword searches, or have right of entry to very essential annotation grounds, such as “creation date” and “owner of document.”

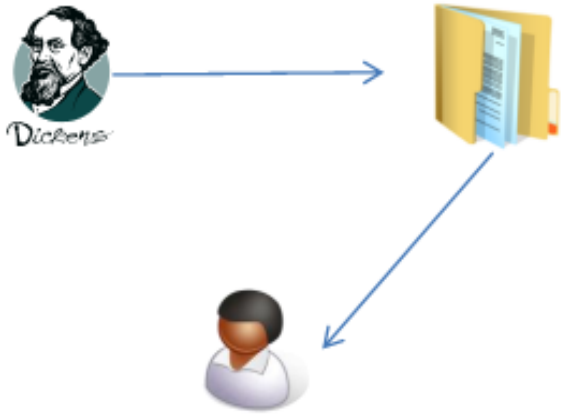

Figure-1: Document Retrieval

When people read, they often underline important parts of a document or write notes in the margin. While we naturally imagine of annotating paper documents, schemes that sustain annotating digital documents are appropriate progressively more frequent. Annotations on digital documents are straightforwardly allocated among groups of people, making them valuable for a wide range of tasks, as well as online discussion and on condition that reaction. Every day people annotate all sorts of media, from documents that are more often than not text such as newspapers and books to media created of images such as architectural plans and musical scores. When reading, authoring, or providing feedback on a text document, annotations allow you to easily confirmation thoughts and ideas in the context of the document. If you choose up a document you just read carefully, chances are excellent that you emphasized a significant measurement, made a idol in the boundary, or even jotted down a comment or two. People make annotations on documents for a wide variety of personal and collaborative tasks.

There are many application domains like organizations and IT industries are there that generates and share information for e.g. newspapers, social networking groups like twitter face-book, media channels etc. Microsoft sharing tool is one of the sharing tool that enable the user to share the information and tag or annotate it. Annotation is information related to data present and consequently it is valuable in categorize the documents. Another sharing tool is Google base . For personal use, annotations can be valuable for summarizing a document or recalling which parts of it were important or interesting.

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Annotations are also a very natural way to collaborate on a document, as when providing feedback to co-authors. Whether making annotations for personal use or to share with others, annotating directly on a document allows the annotator to easily call attention to exacting sectors and give context to notes by their position. Having the context in the document for an annotation permits shorter comments and can enlarge the transparency of a mention for other readers, or even the original annotator after some time has passed.

While we typically think of annotating paper documents, as more and more documents exist mainly in digital form, sustain for annotating digital documents is appropriate more common. Annotations on digital documents have an exceptional benefit over annotations made on paper. In particular, digital documents are more easily shared among people, facilitating asynchronous collaboration using annotations in a variety of scenarios. For example, when authoring a document with multiple co-authors, digital annotations provide a natural way to communicate ideas and response, even if the co-authors are purely far separately

The Semantic Web and Linked Data movements with the plan of Distributing and interrelating machine comprehensible in sequence have gained grip in the last years. On the other hand the mainstream of information unmoving is contained in and exchanged using unstructured documents for example Web pages, text documents, images and videos. This can also not be anticipated to transform, since text, images and videos are the accepted way in which humans interrelate with information. Semantic structuring of content on the other hand provides an extensive variety of advantages measure up to unstructured information. Semantically-enriched documents facilitate information search and retrieval, appearance, integration, reusability, interoperability and personalization[11]. Looking at the life-cycle of semantic content on the Web of Data, we see moderately some development on the backend side in storing arrangement content or for linking data and schemata. Nevertheless, the currently smallest amount of developed characteristic of the semantic content life-cycle is from our position the user-friendly handbook and semi-automatic manufacture of rich semantic content.

II. Theoretical Background

A lot of methods do not have the essential "attribute-value" annotation that would formulate a querying practical to be use. Annotations that use "attribute-value" pairs necessitate customers to be more standard in their annotation attempts. Users need to have good idea in using and applying the annotations or attributes.

Even if the scheme permits customers to annotate the data with such attribute-value pairs, the customers are frequently unenthusiastic to execute the job.

Such complexity effects in very crucial annotations that is repeatedly inadequate to uncomplicated keywords. Such simple annotations make the analysis and querying of the data awkward. Customers are frequently maximum valued to simple keyword searches, or have right to use to very essential annotation fields, for instance "size of document" and "creation date" additionally attractive document searching and retrieval, the annotation of documents also helps in obtaining structured information from unstructured collection of documents. For example, consider a website which reviews mobile phone models. The review about a particular model will be written in the form of an article arranged using paragraphs. By semantic annotation, only the most important information about this particular model is made available in a structured format. There are several systems that favor the collaborative annotation of objects and use previous annotations or tags to annotate new objects [17]. There have been significant amounts of work in predicting attach a label for documents or other assets. So they dispute that their approach is unusual as evaluated to a traditional approach. But by conveying annotations to documents will facilitate in improving earlier competence in searching.

III. Various Types Of Annotation Systems

Based on the human intervention factor, annotation systems can be classified in to three types: Manual annotation systems, Semi-automatic annotation systems and automatic annotation systems [3].

- *Manual Annotation*

Manual Annotation deals with adding metadata tags or keywords for a document or part of a document manually by the user. Either the author who created the document or others who later uses the document can add annotations.

Manual annotations are the oldest form for adding annotations to a document. When the number documents that need to be annotated is very high, manual annotation becomes time consuming or practically impossible.

- *Automatic annotation*

Automatic annotation is the process of adding annotations to a document or part of a document using an annotation tool or knowledge extraction tool without the help of human users. Many such tools have been implemented recently to generate automatic annotations for a document. An important factor to consider here is the accuracy of the annotations generated.

- *Semi-Automatic annotation*

Semi-automatic annotation systems are also automatic annotation tools or mechanisms but they also involve some form of human intervention.

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They usually make their annotation suggestions and user can approve or disprove those suggestions. For example some systems allow users to inspect the annotations generated by the system and allow them to edit them if needed to improve accuracy.

IV. Ontology And Its Classification

W3C characterizes ontology as "the terms used to describe and represent an area of knowledge." [4].

This description has numerous characteristics that should be talk about. First, the description conditions that ontology is bring into play to explain and characterize a region of knowledge. In other words, we can say that ontology is domain specific; it does not characterize all knowledge areas, but one specific region of knowledge. A domain is basically a specific subject part or sphere of knowledge, for example education, medicine, literature, etc.

Second, the ontology contains terms and relationships among those terms. Terms are also called classes, or ideas; these words are identical. The relationships between these classes can be expressed by using a hierarchy, i.e. super classes represent higher-level concepts and subclasses represent finer concepts. The improved ideas have all the attributes and characteristics that the advanced ideas have used.

Third, in addition to the aforementioned relationships among classes, there is another stage of connection communicated by means of a unique group of terms called assets. These assets words explain a variety of features and elements of the perceptions and they can also be used to associate different classes together. Thus, the relationships among classes are not only super class or subclass relationships, but relationships expressed in terms of properties as well. The main benefits of ontology are:

- it provides a common and shared understanding/definition about certain key concepts in the domain,
- it provides a way for reuse of domain knowledge,
- it makes the domain assumptions explicit,
- it provides a way to encode knowledge and semantics such that machines can understand it.

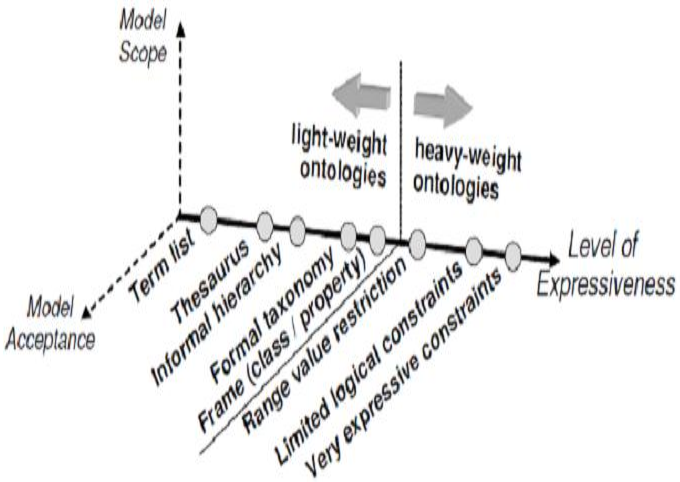

Figure-2: Level of expressiveness of ontologies [5]

There are various types of ontologies differing in multiple aspects. It has classified [5] ontologies along three dimensions: model scope, level of expressiveness and model acceptance. The model scope refers to the area or coverage that is of interest. The acceptance dimension deals with the target communities of the function and its knowledge representation and a variety of techniques of building compromise within a definite group of people. The level of expressiveness is particularly significant and is briefly described below.

Level of expressiveness (Light-weight and Heavy-weight ontologies): The spectrum of expressiveness of ontologies is illustrated in Figure-2. There are two main groups {lightweight ontologies and heavyweight ontologies. Based on their level of expressiveness, eight sub categories are defined:

- A term list or controlled vocabulary contains a list of keywords. Such lists are characteristically utilized to contain probable importance for properties of a few kinds of instance data in the area.
- A thesaurus also defines relations between terms, e.g. proximity of terms.
- An informal taxonomy defines an explicit hierarchy of generalization and specialization, but there is no exacting inheritance, i.e. an illustration of a sub-class is not essentially also an instance of the super-class.

- A prescribed arrangement describes an exacting inheritance chain of command.
- A frame or class/property based ontology is similar to object-oriented models. A class is characterized by its arrangement in the subclass hierarchy and its properties. Properties are inherited by sub-classes and recognized in illustrations.
- A range value restriction defines, in addition, restrictions for the defined properties. The restrictions may be data type or domain restrictions.
- By using limited logic constraints, property values may be further restricted.
- A very expressive ontology often uses first-order logic constraints. These restrictions may include displace classes, put out of place coverings, opposite correlations, part-whole relationships, etc.

Schema.org: With deep semantics, dominant way of thinking can be done; on the other hand such methods cannot put up with any variation. Alternatively, with inconsequential ontologies not much way of thinking can be completed. However, there is far less risk of inconsistencies because only little ontological agreements are in place. With little semantics, applications can scale very well. This is a considerable feature when we think about the enormous level of the web, which is important for the practical realization of the Semantic Web vision. Therefore, lightweight ontologies have become more popular and widespread. Schema.org as an example of such inconsequential ontologies has increased awareness in modern years.

Schema.org is an effort initiated by the popular search engines Bing, Google and Yahoo! on June 2011 to define a broad, Web-scale and shared vocabulary focusing on popular concepts. It takes a position as a lightweight middle ontology that does not attempt to have the scope of ontology of everything or go into depth in any one area. A central goal of having such a broad schema all in one place is to make easier things for mass adoption and cover the most common use belongings [6].

V. Ontology Based Lexicon Model

In this section, here they describe the lexicon model and summarize the conception of the lexicons for each verbal communication on the beginning of the ontology. In the circumstance of semantic search, the lexicons serve as the most important boundary between the customer's query and the ontological search engine. The annotation of the knowledge thing is making possible by an extra linguistic tool, i.e. annotation grammars for perceptions. As a general rule, there subsist a variety of approach to the mapping of lexical entries with conceptions of the ontology, e.g. WordNet [7], EuroWordNet [8] and SIMPLE [9]. They all begin from lexicon compilation for changed languages, and then attempt to set up a links to a theoretical space.

Even though they try to illustrate on the consequences of these projects e.g. by mapping our information to WordNet and to Pustejovsky's ideas in SIMPLE, so they get recommend a different move towards to concerning the ontology and the lexicons. So lexicon model is very close to that of LingInfo [10] with observe to the mapping of the lexical things to ideas with the use of other language processing tools, especially the perception annotation grammars and disambiguation instruments. The terminological lexicons were created on the starting point of the prescribed explanations of the ideas in the ontology. By means of this move towards to creating the terminological lexicon they escaped the durable job of mapping changed lexicons in numerous languages which has been done by the EuroWordNet Project [8]. The major difficulty with that method are that a) for some ideas there is no lexicalised expression in a given language, and b) some significant expressions in a particular language have no suitable idea in the ontology which characterizes the significance of it.

To solve the first difficulty, they permit the lexicons to hold as well non-lexicalised phrases which state the significance of the ideas without individual appropriate lexical units. They unambiguously recommended the lexicon compilers to add multiple expressions and phrases for a specified thought in order to signify as many techniques of communicating the thought as achievable. These lexical units and phrases are used as a starting point for building of the regular grammar rules for annotation of the perceptions in the text. If a high degree of lexical variance for a given idea is confined in the lexicon of a language, these are proficient to confine the altered phrasings of the same meaning in our learning entities.

Consecutively to solve the second problem, they try to just add new theory to the ontology when required. The featured usage of a lexical term with no identical idea in the ontology is the following: they try to put in a more featured class into the ontology wherever this is feasible; such as the idea shortcut, as it was primarily described, was the most common one, but the lexical items used in English to some amount depend on the operating system, because each operating system i.e., MS Windows, Linux, etc commences its own expressions. When the notion is covered into other languages, the corresponding in these languages may signify a different level of granularity – consequently, they commence more definite ideas in the ontology with the intention of make possible a acceptable mapping between verbal communications.

In brief, the ontology and the lexicons are joined in the subsequent techniques: the ontology characterizes the semantic knowledge in form of perceptions and family members with suitable axioms; the lexicons characterize the techniques in which these ideas can be lexicalised or phrased in the consequent languages.

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Certainly, the techniques in which a conception could be characterized in the text are possibility infinite in number consequently; they could accomplish the lexical representation of only the most repeated and significant expressions and phrases illustrating a exacting conception.

In the following, they present a model access from the Dutch lexicon:

```
<entry id="id60">
<owl:Class rdf:about="lt4el:BarWithButtons">
<rdfs:subClassOf>
<owl:Class rdf:about="lt4el:Window"/>
</rdfs:subClassOf>
</owl:Class>
<def>A horizontal or vertical bar as a part of a window, that contains buttons, icons.
</def>
<termg lang="nl">
<term shead="1">werkbalk</term>
<term>balk</term>
<term type="nonlex">balk met knoppen</term>
 <term>menubalk</term>
</termg>
</entry>
```

Each lexical entry holds three types of information: (a) information about the idea from the ontology which characterizes the meaning for the expressions in the entry (*owlClass* element); (b) description of the concept significance in English (*def* element); and (c) a set of terms in a given language that have the meaning communicated by the perception (*termg* element). The idea measurement of the entry provides minimum information for a prescribed definition of the conception. The English definitions of the expression make possible human understanding of the fundamental concept. The set of terms characterize the different wordings of the idea in the equivalent language. One of the terms stand for's the term set. Note that this is a fairly arbitrary choice, which may depend on occurrence of term procedure or the perception of an expert. This diplomat expression will be used where just one of the terms from the set is required, for instance as the name of a menu item. In the example exceeding they present the set of Dutch terms for the concept *lt4el: BarWithButtons*. One of the given terms is a phrase; consequently the element has been allocated an attribute "type" with value *nonlex*. The first expression is diplomat for the term set and is consequently allocated the attribute "shead" with assessment.

VI. Semantic Search

One of the objectives of semantic search is to develop a search functionality which: a) get betters the user-friendliness to documents in a learning management arrangement by developing semantic characteristics of search queries and documents; b) efforts for numerous languages and c) enables users to find documents in numerous languages for a search term which is particular in the customer's language.

For search and retrieval inspiring documents with semantic demonstrations helps to create more efficient and effective search interfaces, such as faceted search [11]. The search engine which we have extended assembles on the data which have illustrated in the prior segments, specifically a) a collection of documents in numerous languages, covering one general domain or subject; b) an ontology for this domain; c) lexicons which make available language definite terms for the area ideas and d) semantic annotation of the documents. Another presumption is that the user's inhabitant language is cover up by a lexicon and that there are documents in those languages which the customer identify as his second, third etc. language.

The fundamental design of the ontology-based search (or *semantic search*) is that perceptions from the ontology show the way the customer to those documents which are suitable for his query based on that search. The search will almost certainly work most excellent when the client selects ideas from the ontology. On the other hand, they want customers to create with a free-text query for two explanations.

First, the upcoming effects of the semantic search will be evaluated to other search approach such as *full-text search* (all words from the text are think about when give the impression of being for a equivalent for the query) and *keyword search* (matching with expressions that are allocated as keywords to the documents – to keep away from confusion, the words the customer types in are called *search words* and not keywords). The distinctive customer, who is most perhaps recognizable with the Google search engine, assumingly desires to get the search results quick, with not moreover many transitional steps. Consequently, we would like to call upon semantic search immediately the customer has cross the threshold his search words, and give first consequences jointly with the effects of the other search techniques. Second, we think it valuable to make available the customer a preliminary position for discovering the appropriate situates in the ontology. The search words are used to discover this position in the ontology.

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In a next step, the exploration can be improved by picking conceptions from the ontology which are put up the shutters to the search expression.

Each idea that is communicated to the search query is accessible to the client jointly with its area from the ontology, i.e. correlated ideas and relations between the perceptions. We will make use of the expression "browsing unit" for the measurement of the ontology which is obtainable to the customer (see fig. 3 below). If no concept communicated to the search uncertainty is found, the root of the ontology is selected as the browsing unit. The customer can look through the ontology by fall into placing on a concept. Furthermore, the category of relation between the starting place concept and the adjacent concept can be selected in sequence to contracted down the search space.

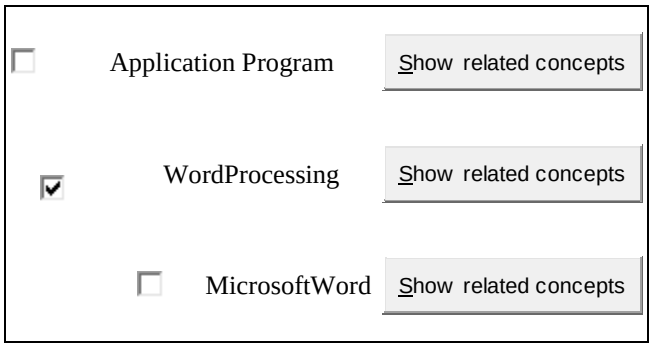

Figure-3: Example of a probable representation of a browsing unit, where only taxonomical relations are present.

The search engine acquires as input constraints: a) the language(s) from which user wants to take search words i.e. establishes which lexicons to use for research; languages for which customer desires to distinguish accessible documents; c) search words specified by customer; d) perceptions selected by customer; e) a technique for joining the ideas either conjunctive or disjunctive; f) two alternatives demonstrating whether documents should be recovered which do not control the aspiration idea but, for the two alternatives, correspondingly a great idea or a sub concept of it. The search engine precedes a ranked listing of documents which semantically equivalent the search words, recognized by their titles.

The data flow from the client query to the recovered documents is as pursues: a) the search word(s) are appeared up in the lexicon(s) of the selected language(s). Search words are normalised orthographically earlier than lookup; b) if lexical entries are originate in the lexicon, they are equivalence to conceptions in the ontology.

The relevant ontology pieces are accessible to the customer for additional alteration of the query; c) once a set of ideas from the ontology is selected those documents which restrain the models, either in the metadata or inline, are obtainable to the customer.

A number of criteria, both the frequency and the positions of the search term in the recovered documents are utilized to rank the recovered documents. The documents are shown in the command given by this significance ranking. On the other hand, consecutively for humans to accurately profit from this incorporation, they still require user-friendly boundaries which allow integrated visualization, exploration and authoring of unstructured and structured content. Give the impression of being at the life-cycle of semantic content on the Web of Data [12].

If nothing of the search words matches a lexical entry or conception, the keywords search and the full-text search are utilized to recover documents. These categories of searches are measurement of a substitute approach which guarantees that the client gets a consequence apart from in the case that the search word has not anything in frequent with the document base.

VII. Literature Survey

Euardo J. Ruiz, Vangelis Hristidis , and Panagiotis G. Ipeirotis proposed approach in paper "Facilitating Document Annotation Using Content and Querying Value"[2] that is based on CADS (Collaborative Adaptive Data Sharing platform), which is an "annotate-as-you create" infrastructure that formulates simple to present fielded kind of data explanation.. In the procedure of investigative the content or data of the document, a explanation involvement of their system is the direct use of the type of query workload to direct the annotation process. They were trying to prioritize the annotation of documents towards generating attribute- value pair of attributes that are often used by querying users. The primary goal of CADS infrastructure is to give confidence, sustain and lower the cost of generating complicated and adequately annotated documents that can be useful for commonly issued and type of queries entered semi-structured queries. Their primary key goal is to encourage, support and provide the annotation of the documents provided or entered at creation time, though the techniques also be used for post generation document annotation while the creator of a particular document is in the phase of "document creation". Facilitation of Document Annotation using content and querying value system architecture is shown below-

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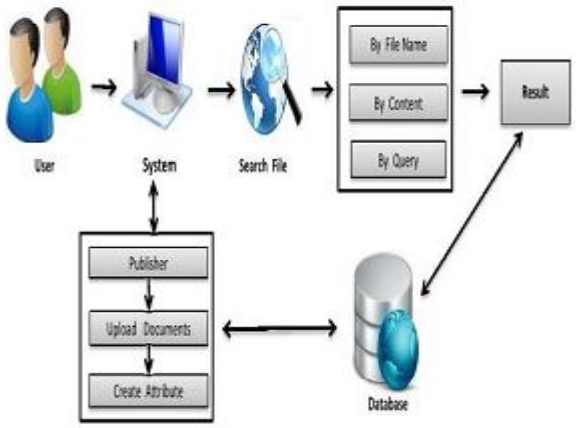

Figure-4: System Architecture of facilitating document Annotation using content and querying value.

Information Extraction is identified with this effort mainly in the setting of recommendations of attributes. Data extraction methods have designated enormous approaches concerning on Web inputs; there are three types of data extraction on the web. The Text Runner framework manages the crude characteristic dialect message, the Web Tables framework concentrates on HTML- tables, and the intense web surfacing method thinks on backend databases. Content Runner expends content from a Web scrawl and emits n-ary tuples. It work up to expectations by first linguistically parsing every regular dialect sentence in a creep, then utilizing the results to get a few hopefuls tuple extractions. Recovering social databases from the raw HTML tables comprises of two steps. To start with, Web Tables attempts to channel out all the non-social tables. Second, for all the tables that we accept to be social, Web Tables attempts to recover metadata for each. This methodology is, basically an information joining arrangement that is to make vertical web indexes for particular areas. In this methodology we could make a middle person structure for the area close by and semantic mappings between individual information sources and the arbiter form. [13].

Michael Franklin proposes information spaces and their supportive methods as an additional possibility for information management. The author proposes the design and advancement of Data Space Support Platforms (Dssps) as a key thing for the information management field. DSSP offers a pack of interrelated management and ensures that helps designers to concentrate on the focused on difficulties of their applications, as instead to repeating difficulties included in managing reliably and productively with huge amounts of interrelated. Combined information.

Dssps are skilled to free application designers from needing to constantly re-implement essential information management usefulness when managing unpredictable, different and, interrelate information sources, which is like that of traditional DBMSs. Dissimilar to a DBMS, a DSSP does not have a complete control over the information in the information space. Rather, a DSSP allow the information to be managed by the member system, however gives another set of management over the total of the system.[14].

In context aware search [15], a semantic information retrieval technique using ontology is used. It is supported on the design that sustaining a self-motivated and developing domain ontology in order to accommodate retrieved information can improve the precision of retrieval process. Searching is performed by interpreting the meanings of keywords provided by domain ontology. Ontology together with instance of the class constitutes a knowledge base. Information contained in the digital documents are extracted and stored in Jena based triple store. The architecture of the system consists of three modules. They are Knowledge extractor, Ontology change management and search module.

In Knowledge extractor module, semantically aware metadata of a document is generated. In this module [15] steps like transforming the document into standard format, component identification, term extraction, lexical, hierarchy identification, knowledge representation and knowledge verification are performed. Ontology change management module deals with modifying or updating the ontology according to the changes in the domain knowledge. Ontology enrichment and ontology population are the two basic operations performed in this module. Changes are detected using H-Match Algorithm and the changes are represented using Change History Ontology (CHO). A change history log (CHL) is used to keep track of all changes made to the domain ontology. Document searching module deals with submission of queries and retrieval of relevant documents.

Y. Song, Z. Zhuang, H. Li, Q. Zhao, J. Li, W.-C. Lee, and C.L. Giles proposed a paper "Real-Time Automatic Tag Recommendation " [16] The proposed system exactly same works as document annotations. They proposed a learning framework for tag recommendation for scientific and web documents. We proposed a Poisson mixture model for efficient document classification. Author proposed a novel and efficient node ranking method as well as several new metrics for evaluating the performance of their framework.

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The proposed system framework executes its potential in evaluations on two real-world tagging data sets, indicating its capability of handling large-scale data sets in real-time. The proposed method can recommend tags in one second on average. The relationship among documents, words, and tags can then be represented by two bipartite graphs as shown in Figure:

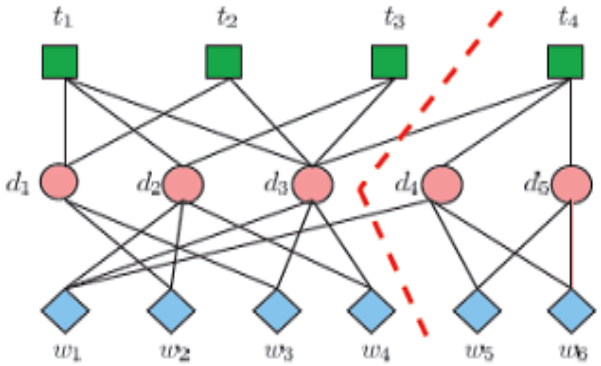

Figure-5: Two bipartite graphs of documents, words and tags.

S. No	Author	Paper	Advantages	Issue
1	Lu, Yiyao	Annotating search results from Web databases, 2013	Data alignment helps in finding common patterns and features among data units and makes annotation mechanism easier to perform.	A multi annotator approach is used to automatically annotate search results from web databases. Annotations are performed at the data unit level.
2	Harith	Automatic ontology-based knowledge extraction and tailored biography generation from the web, 2003	Syntactic and semantic analysis of every paragraph is carried out in order for finding relevant knowledge to extract.	implementing a system for extracting knowledge about artists from web and populate a Knowledge base.
3	Iwata, Tomoharu, Takeshi Yamada, and Naonori Ueda	Modeling Noisy Annotated Data with Application to Social Annotation, 2013	It enables the content related annotation feature which is not supported by Corr-LDA.	This method works on noisy annotated data. It analyses and extracts content related annotations from noisy annotated data. Noisy annotations are content unrelated annotation.
4	Brut, Mihaela M., Florence Sedes, and Stefan Daniel Dumitrescu,	A semantic-oriented approach for organizing and developing annotation for e-learning, 2011	It reduce its dimensionality and also reveals latent relationships among documents based on word co-occurrences.	Here that adopts ontologies in order for annotating e-learning resource. Semantic annotation of the e-learning materials makes use of a manual annotation component and semi-automatically annotation component.

VIII. Conclusion

In this paper, various factors of different text document annotations implements and frameworks have been presented on existing circumstances on searching some type of a particular document is a primary condition. A lot of research is going on in this field to get better the presentation of automatic annotation schemes. A key concern of these researches is in improving the correctness of relevant annotations being created.

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