CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

With widespread research in a large number of areas, enough resource is available in the web. However, the suitable information escapes the vicinity of the researchers due to the unexpected growth of the World Wide Web (WWW). This research work has presented an effective approach for the selection of an appropriate resource. Hence, the need of the hour is to suggest an efficient tag recommendation system for the huge amount of information available in internet. Which is the research work carried in the thesis.

In this research work, the topic ontology from Wikipedia and WordNet has been constructed. The main goal achieved is the implementation of topic ontology construction with high specific level topics, concepts and their corresponding semantic relations. More optimal number of high quality topics are suggested and extracted through this research work. It provides more support to annotate the web documents in the form of topic ontology with a high quality of semantic topics and different kinds of semantic relations are discovered. A software prototype has been created and implemented to support the topic ontology construction process. The proposed approach is based on the concept acquisition and semantic relation extraction. The semantic similarity clustering algorithm is proposed to group the identified concepts to determine the semantic distance between the
concepts. In the semantic relation extraction algorithm, the semantic relations between the identified concepts are derived from the lexical relations of the WordNet. The Jena API framework hierarchically organized the identified concepts and their semantic relationship into topic ontology.

Spreading activation algorithm has been applied to existing blog tags in order to activate the tags with interest scores. Weight of the tags is also computed based on the highest activation score on the tags. Every time a new tag is added that the user is interested in being handled using spreading activation, interest scores for the tags are updated. Experiments demonstrated that tag occurrences are utilized to present more related tag recommendations to the users. Experiments in real world datasets are conducted and showed that topic ontology with spreading activation outperforms the existing AutoTag mechanism.

The development of topic ontology design in tag recommendation yields a major advantage. The most popular tags attain rational precision, recall and F-Measure on the datasets of Delicious and BibSonomy. The tag suggestion benefit from the better performance of most popular tags on datasets and it is efficient in reducing the quantity of spam. Currently, topic ontology with spreading activation approach yields a high precision, recall and F-Measure for both Delicious and Bibsonomy. It could be easily concluded from the results that the accuracy and performance of tag recommendation goes up by a few notches. An overall improvement of accuracy between 5%-10% has been obtained could envision the approach for research in this area. Finally, this proposed approach also deals with the applications such as spam reduction, sentiment analysis and tag popularity. The experimental results show that tag recommendation using topic ontology results in the Folksonomy enrichment.
7.2 SCOPE FOR FUTURE WORK

In social tagging systems, deployment of semantic ontologies to recommend the tags is the new research area. Tag recommendation system recommends the more appropriate tags to the user using semantic ontologies constructed from the content of existing blogs. But the semantic annotation of web resources is a very expensive, time consuming process and also needs extra cost to construct the ontology. Researches so far indicate that constructed ontology cannot fully reflect the individual view of a resource according to the individuality of the users. Therefore, the appropriateness of suggested tags is getting reduced and tagging systems such as the provision of resource descriptions that allow users to ‘tap into the long tail’ and to find the niches that are relevant for them. Further, future research will be required in this area in the semantic annotation of ontologies. In future work, a novel approach can be developed further and enhance the remaining similarity cases.

There are a variety of potential directions for future research in the area of folksonomy-based tag recommendation system.

- One area of future research is to examine the degree to which the retrieval interfaces influence the tag assignment process would go a long way in catering to the user needs.

- The major advantage of the tag recommendation problem is accessibility of large-scale, real-life data from a wide range of tagging systems. Tag recommendations strategies are provided from the resources’ perspective, the user can train the recommendation system to predict their future tagging decisions.
• In future work, to improve and expand this approach to a new level, new kind of techniques such as semantic annotation of ontology can be used for automatic tag recommendation system.

• At the moment, performance is a key characteristic to be considered in any real world on-line web systems. Although the suggested approach has reduced the amount of time considerably for processing the information, mechanisms that could reduce the time can further potentially pave the way in a technology infested world.

• It could be easily observed that the tag recommendation system suggested has provided an opening for framing methodologies to reduce the spam if not eliminated them completely. However, no method can be deemed completely fool proof. Further improvements could only enhance the efficiency further and make it globally feasible.