CHAPTER 6
CONCLUSION

6.1 SALIENT FEATURES OF THE THESIS

The current web search challenges in information retrieval are low precision and recall, lack of semantics and evaluations, predicting user query intention, and long time. All these issues are critical in nature and have to be dealt with robust and efficient techniques. This thesis enhances semantic search performance in an information retrieval system by using the proposed semantic search techniques.

The field of semantic search has been given much attention by researchers. Several proposals have been made by various researchers to address the issues of semantic search and other areas. At the same time the major limitations of these proposals are that none of them provides a complete solution for accurate information retrieval system. Hence this thesis proposes a generic semantic search technique, specific semantic search technique and QoS based ranking methodology to provide accurate information retrieval system.

Propose a generic semantic search technique for the user without relevant knowledge about query, to give precise information. The methodology proposes NLP techniques such as spell check algorithm, synonymer (WordNet API) and SCBR model for query concept matching process with ontology environment. The results achieved highest score on precision 98.52%, mean average precision 99.53%, recall 80.50%, and f-measure 67.56%. The experimental results show better performances than ECBR (Dong et al 2011) and other IR models.
Propose a specific semantic search technique for the user with relevant knowledge about the query, to find precious information quickly. The methodology employed Bayesian network model and semantic query with ontology environment and compare with (Yoo 2012) for computational processing time. The experimental results are precision gain 92.72%, mean average precision gain 95.45%, recall gain 77.49% and f-measure gain 60.41%. The search techniques reduce user’s time and complexity of finding the correct results of their search query and provide more relevant results.

Propose a QoS ranking methodology to re-rank the retrieved results of generic semantic search and specific semantic search techniques. The methodology proposes a ranking algorithm for both generic semantic search technique and specific semantic search technique. After the QoS ranking methodology, the experimental results are improved in both generic and specific semantic search performances. The generic search tests results are precision 98.52%, mean average precision 99.55%, recall 90.50%, f-measure 71.45% is enriched. In specific semantic search the precision value is 97.72%, mean average precision is 98.60%, recall is 91.49% and f-measure is 72.28%. Moreover the proposed approach compared with existing approaches through the precision. The proposed system achieves above 25% high precision approximately with the highest performance score when compared with (Lee et al 2012) existing methods. The experimented results concluded that the proposed semantic search techniques enhanced search performances in an information retrieval system.
6.2 FUTURE ENHANCEMENTS

This thesis applies the techniques in education and tourism domains only. These methodologies can be applied to other areas like medical, therapeutic, marketing, business, social network and multimedia content retrieval etc. where accurate results are needed in less time. Other NLP techniques can also be applied to improve the performance further. The methodologies in the thesis can be used to build a tourism specific search engine to provide the users the information about world-wide tourism places of interest.