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Efficient knowledge sharing in multi-user scenario

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Abstract - *Knowledge sharing is an activity through which knowledge is exchanged among people, friends, families, communities and organizations. The biggest challenge for knowledge management is how to make sure that right knowledge could be available to the right people on the right time for any purposes. Traditional search engines return relevant Web documents to keyword queries, where users have to read tedious documents to find the exact information they need. Finding a person who can give the right knowledge is a challenging part due to variety of information needs. This proposed system finds an advisor who provides a most relevant knowledge acquired by them to the user in collaborative environment. Web surfing data is clustered into tasks by using Gaussian Dirichlet process mixture model. In order to mine micro aspects in each task a novel discriminative infinite Hidden Markov Model is developed. This knowledge sharing system helps to get the exact knowledge in less time and to save a lot of repeating efforts for the same task. Thus, it increases the performance of the system by using efficient techniques.*

***Key Words*: :** Knowledge sharing, Fine grained knowledge, clustering, Web surfing data, Advisor search

1.INTRODUCTION

Knowledge management enables individuals to create, share and use knowledge in a systematic way. Knowledge sharing is important part of knowledge management, as effective use of knowledge would be more productive. The goal of Knowledge Sharing is to distribute the right knowledge to the right people at right time. Collaborative environment means people work together with others to achieve a common goal. In collaborative environment, people share knowledge, gives suggestions to other people for a specific problem in such a way to get desired knowledge. But to find a person who can give the right knowledge is a challenging part due to variety of information needs. The goal is to find the right person i.e. expert who possesses the desired piece of knowledge based on their relevant uploaded documents. Traditional search engines like Google, Yahoo return relevant web documents to queries entered by user, where users have to read lengthy documents to find the exact information they need.

In information era, knowledge is becoming a critical organizational resource that provides competitive benefit and giving rise to knowledge management (KM) initiatives. Numerous organizations are employing information technology in knowledge management to assist creation, sharing, integration, and distribution of knowledge. Consider an example, where one user starts to surf the web and searching for advantages of unix , which has already been studied by another user1. In this case, it might be a good idea to consult the person who has already searched for advantages of unix, rather than studying by himself. Such

recommendations are provided with this methodology by analyzing surfing activities automatically. In this example, not necessarily User1 is an expert in every aspect of unix advantages; however, due to his significant surfing activities in unix advantages, it is reasonable to assume that he has gained enough knowledge in this area so that he can help User who searched for that knowledge.

2. LITERATURE SURVEY

1) KrisztianBalog and Group have presented paper on "Formal models for expert finding in enterprise Corpora"In this paper author presented two general strategies to expert searching given a collection of document. The first directly models an expert's knowledge based on the documents that they are associated with. Second locates documents on the queried topic and then finds the associated expert[1].

Finding Experts in Community-Based Question- Answering Services. In this paper there is a network of self declared "experts" to answer other people's questions. Wondir, is a free, publicly available, live question and answer engine that connects people with questions to people with answers. People using such services are like a community anyone can ask, anyone can answer, and everyone can share, since all of the questions and answers are public and searchable immediately. The key is getting the right question in front of the right person[2].

Wang, Rong, Jie Deng, and Fei Men proposed architecture of a social collaborative learning environment system. This system is divided into three layers i.e. (1) user layer, (2) system layer and(3) storage layer. In the user layer, individuals can construct their cognitions. The system layer used to aggregate individual cognitions into group cognition and discover relations among the knowledge, users and the resources. In this way, one user or members collaborates with other members in the system through the environment. This method analyses networks made of users, knowledge, resources and relations between them[3].

Anil K. Jain provide a brief overview of clustering, summarize well known clustering methods, discuss the major challenges and key issues in designing clustering algorithms, and point out some of the emerging and useful research directions, including semi-supervised clustering, ensemble clustering, simultaneous feature selection during data clustering, and large scale data clustering[4].

In year 2008 R. Jones and K. Klinkner found that search tasks are interleaved and used classifiers to segment the sequence of user queries into tasks. They studied real sessions manually labeled into hierarchical task. They proposed and evaluated a method for the automated segmentation of users' query streams into hierarchical units. But it considers search engine query logs only, rather than general web surfing contents (including search). Query logs do not record the subsequent surfing activity after the user clicked a relevant search result. Also it dint try to address advisor search by exploiting the data generated from users' past online behaviors[5].

In year 2011 A. Kotov, P. Bennett, R. White, S. Dumais, and J. Teevan designed classifiers to identify same-task queries for a given query and to predict whether a user will resume a task. They introduced and addressed the two problems in the context of analysis of cross-session search tasks: (i) identifying queries from earlier sessions on the same task, and (ii) predicting whether a user will return to the same task during a later session. But it doesn't provided richer prediction models and alternative feature sets, exploring new prediction and classification problems in the context of cross session information needs. It also didn't tried to mine fine-grained aspects for each task. Summarizing fine-grained aspects can provide a fine-grained description of the knowledge gained by a person [6].

3. PROPOSED SYSTEM

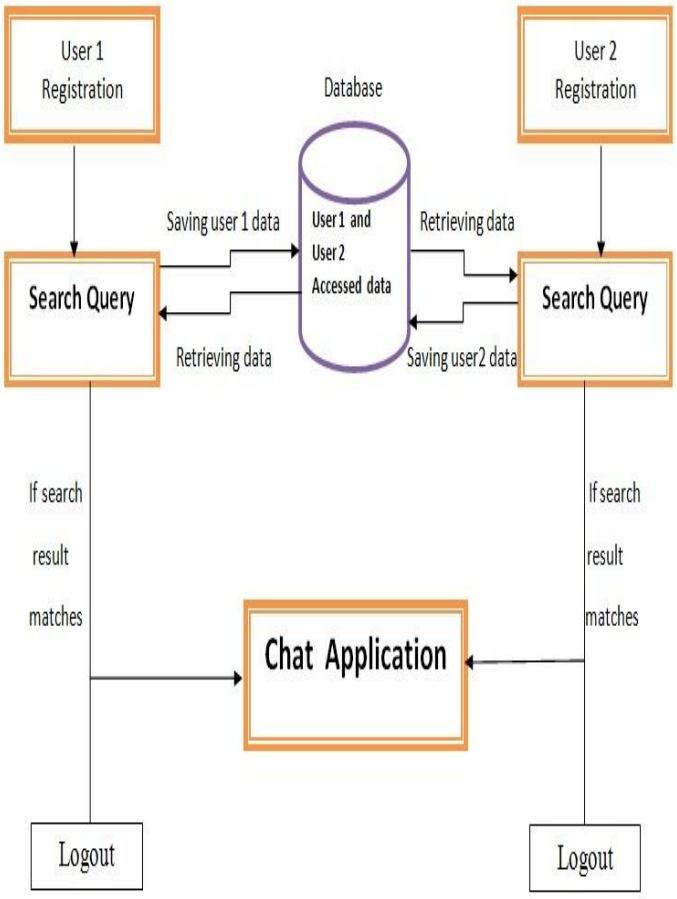


Fig -1: System Architecture

User module :

Users in this application are the people who are searching for information. Firstly, user has to register to acquire access to the application. User can then enter the query to be searched.

Clustering module:

Clustering of sessions is performed using Infinite Gaussian mixture model based on Dirichlet process.

Micro aspect module:

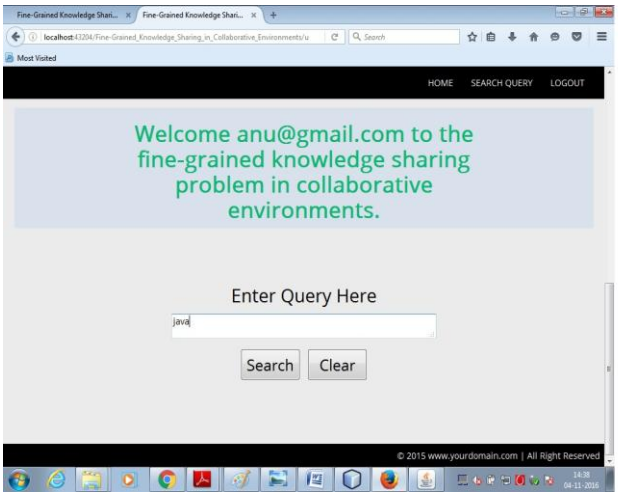
Micro aspects are the terms searched by different users. Mining of similar micro aspects is done using d-iHMM model so as to get advises from already searched users.

Advisory search module:

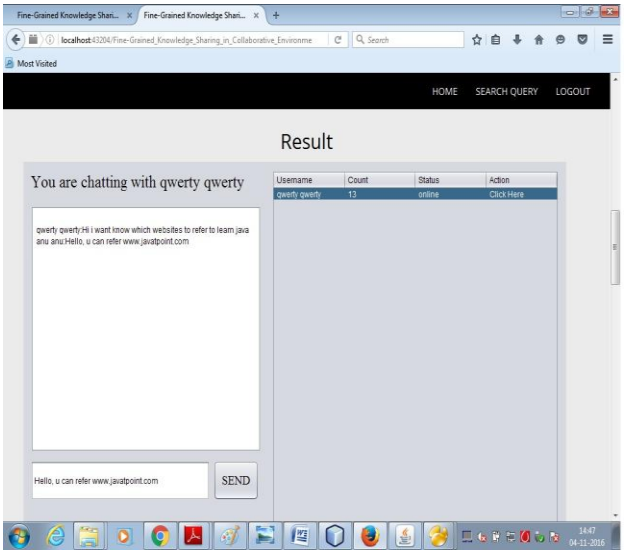
Here sessions of registered users are used to find the advisors who has gained enough knowledge in particular area. Language model is used to implement this module.

4. RESULTS

Following are the screenshots of project. (a) Represents the user search. (b) Represents the knowledge share.



(a)



(b)

5. CONCLUSION

A new method for finding an advisor in collaborative environment is introduced. For finding the right person a novel discriminative infinite hidden Markov Model is used to mine micro aspects. A two-step framework is developed for mining fine-grained knowledge: (1) web surfing data is clustered into tasks by a nonparametric generative model; (2) a novel discriminative infinite Hidden Markov Model is developed to mine fine-grained aspects in each task.

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