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Analyzing User Role Based on Support Vector Machine for Decision-Making Process

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Abstract- Mostly we concentrate on analyzing the user role based on Support Vector Machine and to develop an integrated mechanism to facilitate the collective decision-making process. It achieves lightweight distributed answer search, while still enables a node to accurately identify it's friends that can answer a question. Then, a mechanism is developed to support the collective decision-making process in accordance with accurate answer identification. To classify the question of the user, SVM algorithm is used. It earns high user satisfaction ratings on answering both factual and Non-factual questions.

Keywords: social networking service, support vector machine, social roles

I. INTRODUCTION

Support vector machines are supervised learning models with associated learning algorithms that analyze data used for classification and regression analysis A support vector machine constructs a hyper-plane or set of hyper-planes in a high- or infinite-dimensional space, which can be used for classification, regression, or other tasks. With increasing amounts of data being generated by businesses and researchers there is a need for fast, accurate and robust algorithms for data analysis. Support vector machines are a specific type of machine learning algorithm that are among the most widely used for many statistical learning problems, such as spam filtering, text classification, handwriting analysis, face and object recognition, and countless others. It belongs to two categories; an SVM training algorithm builds a model that assigns new examples into one category or the other, making it a non-probabilistic binary linear classifier.

To classify the questions of users, SVM algorithm is used, it is for classification of data. It achieves lightweight distributed answerer search, while still enables a node to accurately identify its friends that can answer a question. It generates much less overhead with its limited question forwarding hops. It earns high user satisfaction ratings on answering both factual and non-factual questions.

II. RELATED WORKS

(1). Optimizing web search using social annotations:

This paper explores the use of social annotations to improve web search. Nowadays, many services e.g., del.icio.us have been developed for web users to organize and share their favorite web pages on line by using social annotations. We observed that the social annotations can benefit the web search in two aspects: 1) the annotations are usually good summaries of corresponding web pages; 2) the count of annotations indicates the popularity of web pages. Two novel algorithms are proposed to incorporate these information into page ranking: 1) SocialSimRank (SSR) calculates the similarity between social annotations and web queries; 2) SocialPageRank (SPR) captures the popularity of web pages. Preliminary experimental results show that SSR can find the latent semantic association between queries and annotations, while SPR successfully measures the quality (popularity) of a web page from the web user's perspective.

(2). A search engine for collaboration discovery:

Collaborative research has been increasingly popular and important in academic circles. However, there is no open platform available for scholars or scientists to effectively discover potential collaborators. This paper discusses CollabSeer, an open system to recommend potential research collaborators for scholars and scientists. CollabSeer discovers collaborators based on the structure of the coauthor network and a user's research interests. Currently, three different network structure analysis methods that use vertex similarity are supported in CollabSeer: Jaccard similarity, cosine similarity, and our relation strength similarity measure. Users can also request a recommendation by selecting a topic of interest.

(3). Social network analysis for expertise search and collective intelligence:

SmallBlue is a social networking application that unlocks the valuable business intelligence of 'who knows what?', 'who knows whom?' and 'who knows what about whom' within an organization, without requiring explicit involvement of individuals. The aim of SmallBlue is to locate knowledgeable colleagues, communities, and knowledge networks in companies. The suite also helps users manage their personal networks, and reach out to their extended network (the friends of their friends) to find and access expertise and information.

(4). combining social networks and collaborative filtering:

Numerous studies have shown that one of the most effective channels for disseminating of information and expertise within an organization is its informal network of collaborators, colleagues, and friends [1, 4, 7]. Indeed, the social network1 is as least as important as the official organizational structure for tasks ranging from immediate, local problem-solving (for example, fixing a piece of equipment), to primary work functions, such as creating project teams.

III. PROPOSED SYSTEM

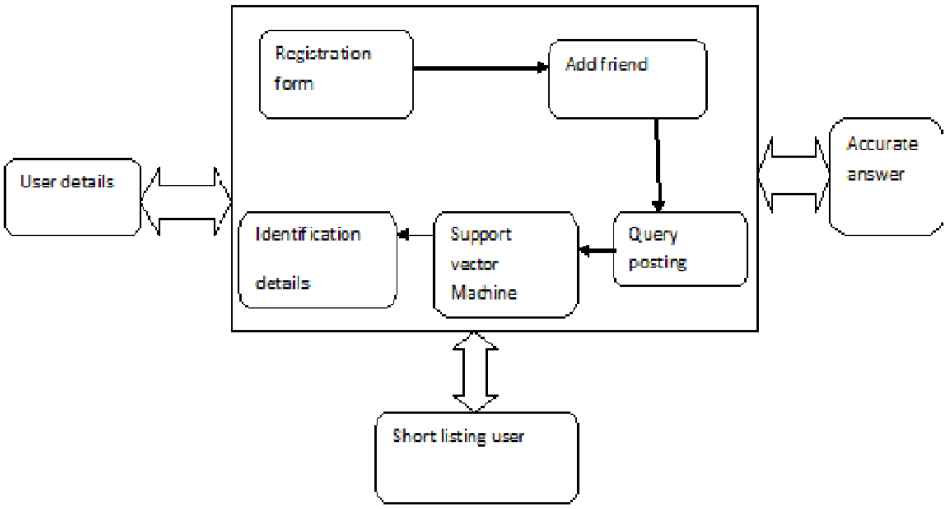
We propose a method that leverages lightweight knowledge engineering techniques for accurate answerer identification. We use answer quality to represent both the willingness of a node to answer another node's questions and the quality of its answers. We propose a method that considers both interest similarity and answer quality based on past experience in question forwarder selection in order to increase the likelihood of the receiver to answer/forward the question. To classify the questions of users, SVM algorithm is used, it is for classification of data

- It achieves lightweight distributed answerer search, while still enables a node to accurately identify its friends that can answer a question.

- It generates much less overhead with its limited question forwarding hops.
- It earns high user satisfaction ratings on answering both factual and non-factual questions.

IV. SYSTEM IMPLEMENTATION

The modules involved in this system are discussed below:



1. User interface design

This module is used to design the registration and login for the user who are interested in answering the user questions. When a user first uses the SOS system, s (he) is required to complete his/her social profile such as interests, professional background and so on. A registration server is responsible for user registration. Each user has an interest ID, which represents his/her interest. When the user wants to ask a question in SOS system, they must login to the system. After that the user can ask a question and receive required answer.

2. Question Identification

In SOS system, when the user logins to the system and asks a specific question which the user wants the answer, first the question is stored in the system. Then the system separates the answer based on the domains of the subjects.

3. Question/User Interest Representation

Each user locally stores her/his own profile and interest ID, and her/his friend list and their interest IDs and answer quality values. Each user calculates his/her own interest ID based on his/her social information and sends it to his/her friends. To calculate interest ID, a node first derives the first-order logic representation from its social information, then conducts first-order logic inference to infer its interests, from which it decides the interest ID.

4. Short listing User

The users are shortlisted based on which they have answered previous questions and the count of the answers which they have answered previously. The users who have not answered or post the fun answers are rejected. The questions are displayed to the users who have interest based on the domain of the asked questions. The list of users who are interested in such domain will be answered to the question.

5. Displaying User's Answers

The answers from the user for the specific questions are displayed to the user who has asked the question. The asker can view the best answer for their question from the other users.

V. RESULT

We post the questions to the user and the user post the answer to the given questions.

Here the rating is done for the user's answer. We take the accurate answers and neglect the fun answers.

VI. CONCLUSION

In this proposed model an integrated method to support the decision making process based on analysis of user roles. This method that leverages lightweight knowledge engineering techniques for accurate answerer identification. The answer quality to represent both the willingness of a node to answer another node's questions and the quality of its answers. Proposed method that considers both interest similarity and answer quality based on past experience in question forwarder selection in order to increase the likelihood of the receiver to answer/forward the question

To classify the questions of users, SVM algorithm is used, it is for classification of data. The evaluation experiments showed the effectiveness comparing with the traditional method. Finally, an application scenario was presented to show how the enhanced system can support the collective decision-making process by analyzing users' roles. As for our future work, it will improve the design and implementation of our proposed methods and related algorithms.

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