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A Scattered Portable Question and Answering Scheme Established Upon Informative Networks

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***Abstract**: Question and Answer (Q&A)system based on social networking creases more attention recently. The social-based Q&A systems answer non-factual questions, which cannot be simply committed by web search engines .These systems either rely on a centralized server for identifying friends based on social information or broadcast a user's questions to all of its friends .Mobile Q&A systems, where mobile nodes access the Q&A systems through internet, are very promising considering the rapid increase of mobile users and the handiness of practical use .However, such systems can not directly use the previous centralized methods or broadcasting methods ,which produce high price of mobile internet access ,node overload ,and high server bandwidth cost with the tremendous number of mobile users .We propose a distributed social- based mobile Q&A system with low overhead and system cost as well as quick response to question askers .It assists mobile users to forward questions to probable answerers in their friend lists in a decentralized manner for a number of hops before restoring to the server. It influences trivial knowledge engineering techniques to precisely identify friends who are able to and willing to answer questions, thus reducing the search and computation costs of mobile nodes. The trace- driven simulation results show that Q&A system can achieve high query accuracy and recall rate, a short response potential and low overhead.*

***Keywords:** Inquiry and response systems, online social networks, Non-factual questions*

1.INTRODUCTION

Traditional search engines such as Google and Bing are the primary way for information retrieval on the internet. To improve the performance of search engines, social search engines have been proposed to govern the results searched by key words that are more relevant to the searchers. These social search engines group people with similar interests and refer to the historical selected results of a person's group members to decide the significant results for the person. Although the search engines perform well in answering factual queries for information by now in a database, they are not appropriate for non-factual queries that are more subjective, relative and multi-dimensional (e.g., can anyone commend a professor in advising research on social-based question and answer systems?), especially when the information is not in the database. One method to solve this problem is to forward the non-factual queries to individuals, which are the most "intelligent machines" that are adept of parsing, interpreting and answering the queries, provided they are familiar with the queries. Accordingly, a quantity of knowhow location systems have been proposed to search experts in social networks or internet aided by a centralized search engine. Also, web Q&A sites such as Yahoo! Answersand Ask.com provides high quality answers and have been increasingly popular.

The social-based Q&A systems can be classified into two categories: broadcasting-based, which broadcast the questions of a user to all of the user's friends, and centralized server, which hypotheses and maintains the social network of each user, it searches the potential answerers for a given question from the asker's friends, friends of friends and so on. In respect to the client side, the quickincidence of smart phones has boosted mobile internet access, which makes the mobile Q&A system a very promising application. The mobile Q&A systems enable users to ask and answer questions anytime and anywhere at their fingertips. However, the previous broadcasting and centralized methods are not appropriate to the mobile environment, where each mobile node has limited resources.

Broadcasting questions to anenormous number of friends cannot possibilities the quality of the answers. To solve the previous social-based Q&A system, in this paper, we propose a distributed Social-based mObile Q&A System

(SOS) with low node overhead and system cost as well as quick response to question askers. It achieves lightweight distributed answerer search, while still enablinga node to accurately identify its friends that can answer a question. The analytical results of the data from the actual application show the highly sustaining Q&A service and high performance of SOS. SOS influences the lightweight knowledge engineering techniques to renovate user's social information and nearness, as well as questions to Ids, respectively, so that a node can locally and accurately identify its friends capable of answering a given question by mapping the question's ID with the social IDs. The node then forwards the question to the recognized friends in a decentralized manner.

After receiving a question, the users answer the questions if they can or forward the question to their friends. The forwarded along friend social links for a number of hops, and then to the server. The cornerstone of SOS is that a person typicallysubjects a question that is closely interconnected to his/her social life. As people sharing similar interests are likely to be clustered in the social network, the social network can be stared as social interest groups intersecting with each other. By locally choosing the most probable answerers in a node's friend list, the queries can be finally promoted to the social clusters that have answers for the questions. In a nutshell, SOS is featured by three advantages:

(1) Decentralized. Evades query congestion and high server bandwidth and maintenance cost problem.

(2) Low cost. Dropping the node overhead, traffic and mobile internet access.

(3) Quick response. An asker identifies potential answerers from his/her friends built on their historical answer quality and answering liveliness to his/her questions.

The contributions of this work are summarized as follows:

(1) Design a distributed Q&A mobile system based on social networks, which can be extended to low-end mobile devices.

(2) We propose a method that leverages lightweight knowledge engineering techniques for precise answerer proof of identity.

(3) We use answer quality to signify both the willingness of a node to answer another node's questions and the quality of its answers. We offer a method that deliberates both interest similarity and answer quality based on past experience.

The Google earns a few higher user satisfaction degree than SOS on factual questions, SOS achievements much higher satisfaction degree for non-factual questions than Google. Explanation that SOS still has a centralized server to support Q&A activities for questions that are difficult to find answerers in the user social network. SOS also can gatherearlier questions and answers in the centralized server to advance the Q&A system performance.

2. RELATED WORK

2.1. The Anatomy of a large scale social search engine.

A method for carrying out the question and answer system in the decentralized manner as a social engine ask question either by immediate messaging, email, web i/p, text message or voice. Aardvark roads the question to the person in the user extended social network most likely to answer the question. Aardvark lies in finding the right person to satisfy a user's information need and traditional search engine is based on authority in a social search engine like Aardvark trust is based on intimacy.

The core of Aardvark is statistical model for routing questions to potential answer. Aardvark performs very well on queries that deal with opinion, advice, experience or recommendation. In any event, it's difficult for the asker to access whether any content that is returned is trust worthy or right for them.

2.2. A Contrast of Information Seeking Using Search Engines and Social Networks

In this paper [2] intensive on a specific aspect of a social search, where the searchers asks a question to group of people they know personally and friendly by means of social network message apprising. By equating this kind of social experiences can able to search for information with a web search engine. Search engine's appears to match anticipation of no significant changes from pre-search to post– search questionnaires.

2.3. What do People Ask Their social networks and why?A Survey Study of Status Messages Q&A behavior.

In this paper [3] makes the spectacle of using social network status message to ask questions. Survey enclosed by using topics of asking and answering questions via status message update. This paper supports to understand how people fulfill information needs by using general purpose of social tools and status messages to ask questions rather than to simply describe their current status.

2.4. Optimizing Key Distribution in Peer to Peer Using B-Tress.

Peer to peer network architecture [4]permits to share resources with each other in a decentralized method by using IP multicasting method. Data has been

interconnected and encrypted by a key that is only known to the authorized information's. This paper helps us to capture decentralized system, like P2P have no single server to control the system and play the main role in the system, Peer should wait to get data from the root high performance of data has been developed by using binary-tree. Peer to Peer is more secured because of controlling the communication between Peers in centralized manner. The main disadvantage of Peer to Peer network architecture increase efficiencyand lessen bandwidth consumption. Encryption and Decryption algorithms require having secret key shared between the sender and receiver.

2.5. Mobile Question and Answer System based on Social Network.

Proposed a new method called social based mobile Q&A system (SOS) [5] with slight cost system and inferior node which makes quick response to the asker's questions. Two categories are combined in this technology they are broadcasting and centralized methods. An asker can identifies potential answers from his or her friends based on their past answer quality. SOS users to create only fewer questions for the reason that selecting potential answer, the question is very much likely to be forwarded to provide answer. Tools like registration server, First Order Logic representation (FOL) and Natural Language Processing (NLP).

3. SOS (SOCIAL BASED MOBILE Q&A SYSTEM)

SOS (Social based Mobile Q&A system) in a distributed way with low over node and lower system cost, which can make quick responses to the queries. SOS techniques enables the mobile users in order to forward the questions to the potential users who can answer the question from the friend list, the resulting operation can be done through decentralized manner afore resorting to the server.

High performance of SOS and Q&A services result can be gained in the real time application with the help ofanalytical result. The queries can be sent along with the online social networking tool with quantity of hops then to sever.

The core of the distributed Social based Mobile Q&A system is that it can makes subjects usually with the persons strictly related with the his / her social life along with the simple interest. Mobile cloud nodes are mostly based under the cloud computing concepts which used to access the Centralized database server with the help of cloud based server at any time anywhere. Hence the mobile cloud computing encounters the necessities of availability, scalability, and adaptability.

4. ARCHITECTURE DIAGRAM

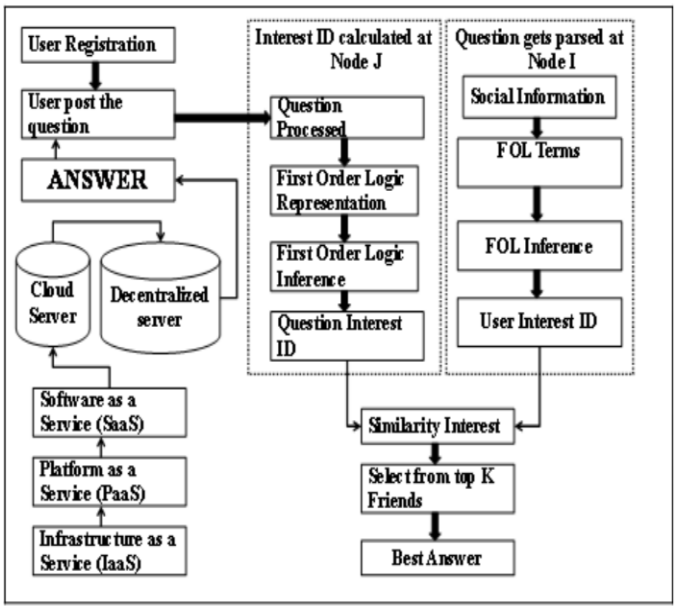

Fig-1. Architecture of SOS

4.1. Registration Server:

Registration Server methoddenotes to the carry on and necessary recording of the information together with the certain type of expressive or detecting character formats with certain apprehensions between them, as provided by the laws and regulation of each country specification.

SOS includes on the online social networking sites, where social links are connected by the interconnecting nodes. User Registration work has been carried out in the Registration Server hence user is represented with the Similar Interest ID, So that user can share his/her mutual interest with their friends and friends of friends.

4.2. First–Order Logic Representation:

FOL is a very potent technique for to define objects and their relationship later it serves as base to the inference technique. First Order Predicate (FOP) calculus is used to build analyses of different type of architectures. FOP method is very declarative and descriptive illustration of driving information and knowledge from the database.

Flexibility as more restraint when more than module added to the common database unfortunately hence it sustains monotonic for consistency learning process. FOP logic uses different kinds of statements for comprising atomic symbols in order topredicate function with multiple arguments.

This type of illustration are used to allow little amount of stretchy knowledge but sensitivity and efficiency makes tactic for weakness in the huge knowledge database.

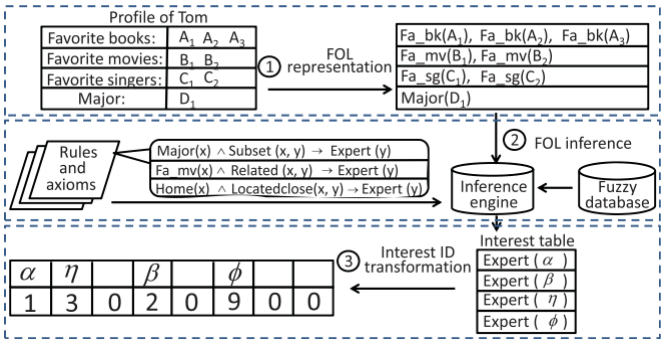

Fig-2. An example of FOL inference for a user's social information.

4.3. First – Order Logic Inference:

Inference is a method which is used to attack user's sensitive data from the whole database. Inference is a data mining techniques which is used to invent hidden information from the user viewpoint. Substantiation of data mining negligent with various level of security attack is concluded for protections of the hidden levels are used in Inference technique. In advance knowledge unlawfully from the database for investigationdetermination is performed in the inference outbreak hence it builds inference structure and inference goal for connecting FOL symbols with respective goals. Each and every node in the lattice inference structure represents connective between syntax symbols of the social information and fuzzy database.

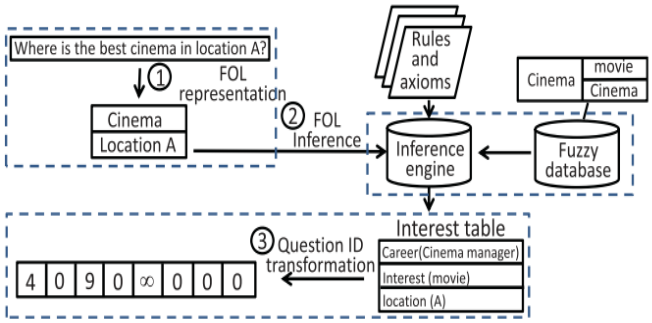

Fig-3. An example of FOL inference for a question.

4.4. Natural Language Processing:

Natural Language Processing (NPL) is a technique which is used to translate human languages into Computer understandable language. It is a method for a computer to understand a text without any sort of calculations and clues henceforth this technique powerschoice answer process by forwarding the question from one mobile node to another in the SOS system.

In order to parse the question, the mobile node used to first process the queries or question in the Natural Language Processing (NLP) and then initiate the question to the FOL format then follows inference technique in order to infer user question to the similar interest people.

Finally, the question has been altered into numerical string formats.

4.5. Question Interested Id:

Question Interested ID is announced in order to generate question ID and interest ID in the numerical string format. Hence the top of the line list comprises all user interest ID categories in the database server. The different types of interest are characterized in alphabetic order in the category's column and each category represent by its entry index. While engendering the numerical string format each and every group checked and tabled therefore if a user ask a question with analike interest category people then the entry index of similar interest people in his/her profile is identified using digits in the arithmetical string of the equivalent position.

4.6. Question/User Interest Illustration

When a user first uses the SOS system, s (he) is requisite to complete his/her social profile such as interests, professional background and so on. Based on the social information, the registration server endorses friends to the user, and the user then adds friends into his/her friend list. Fig. 5 shows a modest example of social network, where users A, B and C are connected with each other by their social relationships.

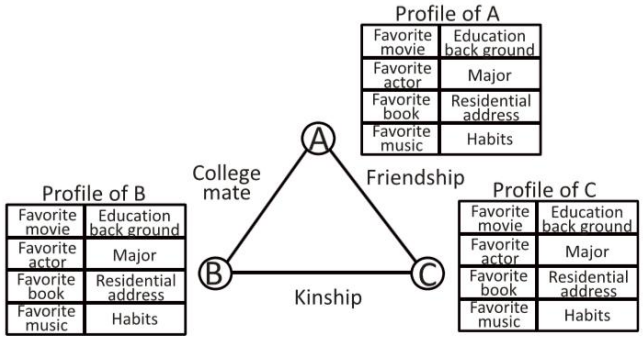

Fig-4. An example of a node's social network.

Every single user locally stocks her/his own profile and interest ID, and her/his friend list and their interest IDs and answer quality values. Each user computes his/her own interest ID based on his/her social information and sends it to his/her friends.

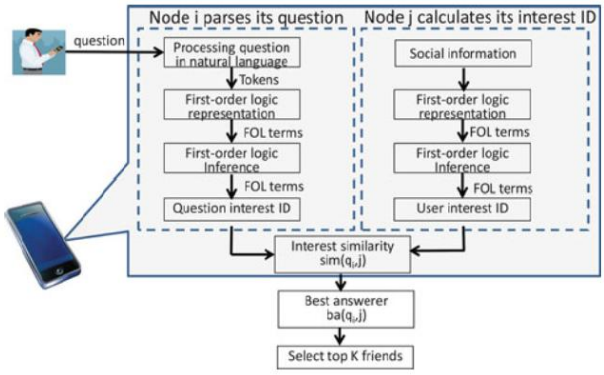

Fig-5. Answerer choice for forwarding a question in one node.

To compute interest ID, as shown on the right part of Fig. 4, a nodefirst grows the first-order logic representation (FOL) [31] from its social information, then conducts first-order logic inference to conclude its interests, from which it resolves the interest ID. The left part of Fig. 5 shows the local answerer selection process for forwarding aninquiry in one mobile node in the SOS system. To parse a question, the node first practices the question using natural language processing (NLP), and then denotes the question in the FOL format and uses the FOL implication to infer the question's interests.

Finally, it transforms the question to a question ID in the form of aarithmetical string. After node i parses its initiated question qi to a question ID, it computes interest similarity $S(q_{i,j})$ for each of its friends j 2F i, whereF_i represents the set of node i's friends. It then computes the best answerer value ($BA(q_{i,j})$) for each friend j by merging $S(q_{i,j})$ and answer quality from friend j($Q(q_{i,j})$).

4.7. Finest Answer Segment

Social networking sites which are used to directly specify the readiness and similar interest people in order to answer or forward the question to the user's friends and friends of friends freshlyworkings of social networking has considered about the effectively calculation of the social closeness and like interest between different user's. However this technique is exclusively based on the network topology where energy is expended. But social online networking alterations very frequently therefore network topology calculation is not mostly suitable for the mobile device for SOS techniques. In order to decrease the over load on the mobile node each user in the SOS (Social based Mobile Q&A system) be able to to find information of the quality answer grounded on his/her interest of their friends. As the performance of the SOS depends on knowledge based on user I, hence User I considers as the number answer received from the User J and also quality answer of User J was calculated hence we call it has response mechanism calculation. SOS initially makes the users to show the answer quality and value of a newly added friend for each received answers as a result an asker can rate the quality of the answer based on the FOL format. By in view of high dimensionality of connected social networking sites user can answer to the question and rate the quality answer from the another user reviews. In this way a mobile node can able to rapidly note the active answers which are inactive before and we can able to identify them as the potential answer to the question.

5.CONCLUSION

In this paper, we represent the design and implementation of a distributed Social-based mObile Q&A System (SOS). SOS is novel in that it attains lightweight distributed answerer search, while still enables a node to precisely identify its friends that can answer a question. SOS uses the FOL illustration and inference engine to derive the interests of questions, and interests of users based on user social information. A node considers both its friend's parsed interests and answer quality in defining the friend's similarity value, which measures both the capability and readiness of the friend to answer/forward a question. Compared to the centralized social network based Q&A systems that suffer from traffic bottlenecks and high server bandwidth rate, SOS is a fully distributed system in which each node makes local choice on question forwarding. Equated to broad- casting, SOS generates abundant less overhead with its narrow question forwarding hops. Since each user belongs to several social bunches, by locally selecting most potential answerers, the question is very likely to be forwarded to answerers that can afford answers. The low reckoning cost makes the system suitable for low-end mobile devices. We steered extensive trace-driven simulations and applied the system on iPod Touch/iPhone mobile devices. The results show that SOS can accurately identify answerers that are able to answer questions. Also, SOS gets high user fulfillmentscores on answering both factual and non-factual questions. In the future, we will study the mish mash of SOS and cloud-based Q&A system. We will also discharge the application in the App Store and study the Q&A behaviors of users in a larger-scale social network.

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