SOS: A Distributed Mobile Q&A System Based on Social Networks

Abstract — Recently, emerging research efforts have been focused on question and answer (Q&A) systems based on social networks. The social-based Q&A systems can answer non-factual questions, which cannot be easily resolved 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 convenience of practical use. However, such systems cannot directly use the previous centralized methods or broadcasting methods, which generate high cost 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 (SOS) with low overhead and system cost as well as quick response to question askers. SOS enables mobile users to forward questions to potential answerers in their friend lists in a decentralized manner for a number of hops before resorting to the server. It leverages lightweight knowledge engineering techniques to accurately 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 SOS can achieve a high query precision and recall rate, a short response latency and low overhead. We have also deployed a pilot version of SOS for use in a small group in Clemson University. The feedback from the users shows that SOS can provide high-quality answers.

Existing System

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 determine the results searched by keywords 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 relevant results for the person.

Although the search engines perform well in answering factual queries for information already in a database, they are not suitable for non-factual queries that are more subjective, relative and multi-dimensional (e.g., can anyone recommend a professor in advising research on social-based question and answer (Q&A) systems?), especially when the information is not in the database (e.g., suggestions, recommendations, advices).

Disadvantages of Existing System

1. Social search engines group people with similar interests and refer to the historical selected results of a person’s group members to decide the relevant results for the person.
Proposed System

SOS leverages the lightweight knowledge engineering techniques to transform users’ social information and closeness, 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 identified 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 question is forwarded along friend social links for a number of hops, and then to the server. The cornerstone of SOS is that a person usually issues a question that is closely related to his/her social life. As people sharing similar interests are likely to be clustered in the social network, the social network can be regarded as social interest clusters intersecting with each other. By locally choosing the most potential answerers in a node’s friend list, the queries can be finally forwarded to the social clusters that have answers for the question. As the answerers are socially close to the askers, they are more willing to answer the questions compared to strangers in the Q&A websites. In addition, their answers are also more personalized and trustable.

Advantages of Proposed System

1. We propose a method that leverages lightweight knowledge engineering techniques for accurate answerer identification.
2. We use answer quality to represent both the willingness of a node to answer another node’s questions and the quality of its answers.

System Architecture
SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

• System : Pentium IV 2.4 GHz.
• Hard Disk : 40 GB.
• Floppy Drive : 1.44 Mb.
• Monitor : 15 VGA Colour.
• Mouse : Logitech.
• Ram : 512 Mb.

SOFTWARE REQUIREMENTS:

• Operating system : - Windows XP.
• Coding Language : Java.
• Data Base : MY SQL