

# Social Q&A: An Online Informal Organization Based Question and Answer Framework

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## ABSTRACT

Question and Answer frameworks assume a crucial part in our everyday life for data and information sharing. Clients post inquiries and choose inquiries to reply in the framework. Because of the quickly developing client populace and the quantity of inquiries, it is impossible for a client to discover an inquiry by chance that he/she can reply. Likewise, charitableness does not urge all clients to give answers, also best answers with short answer hold up span. The essential goal of this paper is to enhance the execution of Question & Answer frameworks by currently sending inquiries to client who are proficient and willing to answer the inquiries. To this end we have composed and actualized Social Question and Answer, an online informal community based Question and Answer framework. Social Question and Answer use the informal community properties of normal intrigue and common trust companion relationship to distinguish an answer through fellowship that are well on the way to answer the inquiry, and upgrade the client security. We additionally enhance Social Q&A with security and productivity upgrades by ensuring client protection and recognizes, and recovering answers consequently for intermittent inquiries. We portray the design and calculations, and directed complete huge scale re-enactment to assess Social Q&A in examination with different strategies.

**Key Words:** Social Question and answer system, information search, Social networks, Onion routing and Bloom filters.

## 1. INTRODUCTION

Internet is essential part of our daily life, through which we acquire more knowledge. We all use social media, in some websites there is lack of security, privacy, authentication feature. Bing, Quora and Google etc are search engines they uses key words for search to be carried out, here user can post the queries and can get the answers, but the problem with this is wait time is more for getting the answer, whenever if user ask any question, he or she will get inaccurate answers. The existing system does not keep the repository of data. To overcome the drawbacks we proposed new system called "online social network based question and answering system" it aims to provide services based on user identities and data which get will be accurate, wait time is less & particular person who is capable and willing to answer for any question only they can answer, by doing this performance of the system will be increased, mutual trust among relationship can be maintained, providing privacy play an important role. In this proposed system, it grants the user to select the relevant tags (i.e. interest category) for queries posted by the user.

## 2. RELATED WORK

The developing significance of Q&A frameworks requests an exertion to better comprehend these frameworks and to enhance them [13]. The works in [14– 19] concentrated the impact of various factors (e.g., clients' profiles, messages forecast, framework associations and group estimate) in the informal communities on Questions and answers execution. This examination comes about establish the framework of Social Q&A to use informal organization properties [20] in the outline. Note that the current informal community in light of the answerer-asker relationship in the current Question and answer frameworks [17] is not quite the same as online informal organization in light of the social relationship, which is utilized as a part of Social Q&A.

The works in [21– 24] focused on finding specialists and legitimate clients. Rather, Social Q&A means to discover typical clients that can answer questions including sentiment write questions. A few examines have been led to make notoriety models in Questions and answers frameworks [25, 26] to build the believability of answers, furthermore, to decide the connection between the notoriety of the clients and the nature of their given answers [27]. Social question and answer specifically uses the informal community property of shared confide in kinship to spur clients to give answers without depending on an extra notoriety show.

### 3. EXISTING SYSTEM

The present social network is based on the asker and answerer relationships in the Question & Answer systems. The work is focused on gaining the answers from experts and the reliable persons. Question mapper module is not present. Key words are used by search engine like Bing, Quora and Google. Waiting time is more to find the answers, can't find appropriate answers.

### 4. PROPOSED SYSTEM

To improve the quality of service we take the advantage of both mutual trust and common interest. Here we utilize different algorithms to find out user interest, question-user mapping and the question interest, Provides security. Also, it assumes user is already provided with social closeness. Instead, Social Q&A centres on how to use informal community properties. It better recognizes potential answerers with known intrigue classes and demonstrating its advantages through the investigation on genuine clients Q&A exercises.

#### SYSTEM ARCHITECTURE

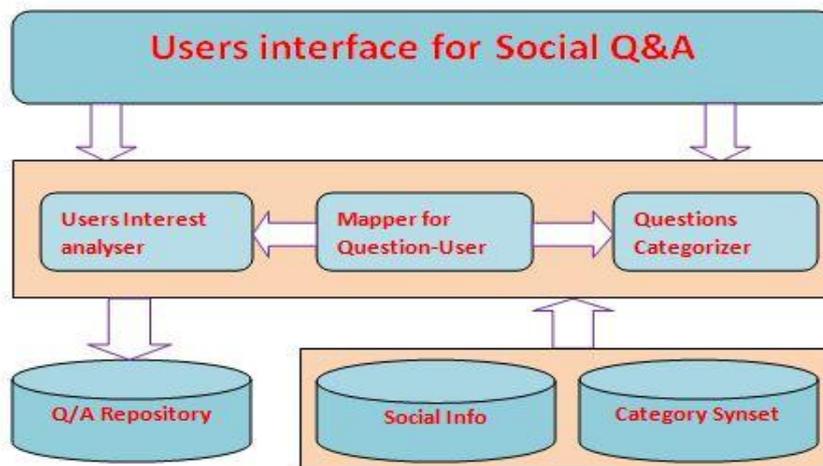


Figure 4.1: The Architecture of SocialQ&A

**Users interest Analyzer:** Client Interest Analyzer uses every client's profile data in the informal organization and client associations to decide the interests from the client in the predefined intrigue classifications. This is on account of if a client asks or answers inquiries in an intrigue classification.

**Question Categorizer:** The essential assignment of the Questions Categorizer is to sort an inquiry into predefined intrigue classifications in light of the topics of inquiry. Here we additionally enable clients to include self characterized labels connecting with questions, which are broke down being referred to parsing. Vector of question  $Q_i$ 's interests is produced by questions categorizer, indicated by  $V_{Q_i}$ , utilizing a comparable calculation as Algorithm 1.

**Mapper for Questions-User:** Recognizes the proper answerers for given inquiry. The potential answer suppliers are looked over companions in online informal organization. Note that the adjustments in a client's companions in online informal community don't influence the execution of SocialQ&A as it generally utilizes a client's present companions. To check the fittingness of a companion ( $U_k$ ) as a supplier of answers for an inquiry, we consider two parameters:

- This intrigue comparability between the intrigue vectors of the companion inquiry and the companion (indicated by  $\Psi_{I, U_k}$ ); and
- The social closeness between the asker and the companion (meant by  $\Psi_{C, U_k}$ ).

**Q/A Repository:** It acts as storage system for important data, it is used to store the information from the user answer and question. Day to day inquiries is often than not repetitive so to answer such questions quickly important data is stored in repository.

**Category Synsets:** The synonyms of all Keywords from WordNet are stored here.

#### Algorithm 1: Users Interest Analyzer's Pseudo code

**Input:** Question and answers, a user's profile.

**Output:** Interest vector for the user is given by  $V_{U_j} = \langle I_i; W_{ii} \rangle$

1. Generate a token stream  $Z_i$  by parsing the “interests” field.
2. Generate a token stream  $Z_a$  by parsing the “activities” field.
3. Generate token streams  $Z_{mu}$ ,  $Z_{mo}$ ,  $Z_t$  and  $Z_b$  from Music, Movie, Television and Book fields.
4. **for** each token stream  $Z_x$  ( $Z_x=Z_i, Z_a, Z_{mu}, Z_{mo}, Z_t, Z_b$ ) **do**  
 Check every token in Synset
5. **if** there exists a matching interest category  $l_i$  **then**
6. Update the weights associated with interests:  $W_{ij} ++$  (e.g.,  $W_{music}++$ )
7. **end if**
8. **end for**
9. Based on profile update and questions asked and answered keep updating  $W_{ij}$
10. Using  $W_{ij} = \alpha * W_{iold}$  periodically update  $W_{ij}$ .

### Algorithm 2: Mapper for Question-User’s pseudo code

**Input:** His/her friends, question and Interest vectors of a user.

**Output:** Potential answer providers list.

- 1: for every friend  $U_k$  in the friend set of  $U_j$  do
- 2: Based on Equation ((1)) calculate  $\psi_{i,U_k}$ .
- 3: Based on Equation ((2)) calculate  $P_{S_{U_k}}$ ,  $P_{A_{U_k}}$  and  $P_{C_{U_k}}$ .
- 4: Based on Equation ((3)) calculate  $\psi_{C,U_k}$ .
- 5: Based on Equation ((4)) calculate  $\psi_{U_k}$ .
- 6: **end for**
- 7: In descending order of  $\psi_{U_k}$  Order the friends.
- 8: Top N friends must be notified.

#### EQUATION (1)

$$\Psi_{I,U_k} = \sum_{I_j \in (V_{U_k} \cap V_{Q_i})} W_{I_j}^{U_k}$$

#### EQUATION (2)

$$P_{S_{U_k}} = \frac{S_{U_k}}{\sum_{i \in \mathcal{F}} S_i}, P_{A_{U_k}} = \frac{A_{U_k}}{\sum_{i \in \mathcal{F}} A_i}, P_{C_{U_k}} = \frac{C_{U_k}}{\sum_{i \in \mathcal{F}} C_i}$$

#### EQUATION (3)

$$\Psi_{C,U_k} = \gamma_S * P_{S_{U_k}} + \gamma_A * P_{A_{U_k}} + \gamma_P * P_{C_{U_k}}$$

#### EQUATION (4)

$$\Psi_{U_k} = \beta * \Psi_{I,U_k} + (1 - \beta) * \Psi_{C,U_k} \quad (0 < \beta < 1)$$

### ADVANTAGES

- 1) **Confidentiality:** The private records of users should be kept in secrecy from both unauthorized system users. So our system does not disclose any information to the unauthorized user.
- 2) Can find the high & accurate answers in short hold up time.
- 3) Security feature is provide by adding various methods like Onion Routing. .

### 5. EFFICIENCY ENHANCEMENT AND SECURITY

Answer forwarding And Secure Personal Information Exchange and the kinship by online interpersonal organizations might not be constantly trustable we thus propose sprout channel based individual data trade strategy & onion steering based answer sending technique to accomplish a specific level of security.

#### Personal Information Exchange Based on bloom filters

Here inquiry client mapper conducts potential answerer determination, which expects companions to trade their own data including their companion records and intrigue vectors. To ensure client protection to a specific degree, companions ought to abstain from trading such individual data straightforwardly. Rather, they should trade the encoded data of their companion records and intrigue vectors. The test here is that the scrambled data ought not just shield a client from uncovering direct data to others yet in addition serve tallying the normal companions and

interests. The tallying blossom channel technique can meet this prerequisite. In this manner, to deal with this test, Social Q&A utilizes the checking sprout channel strategy to encode data that is traded between companions

### Answer Forwarding based on Onion Routing

A few inquiries, for example, religious and political inquiries, might be touchy to oversight, with the goal that a few answerers & askers might need the shield their characters from getting uncovered. Social question and answer can use onion steering technique to give client namelessness. At underlying stage, every client  $U_k$  produces a couple of open and private keys (indicated by  $Pri_{U_k}$  and  $Pub_{U_k}$ ), and the general population keys are traded between companions. To produce an onion steering way, a client haphazardly chooses a few clients and shape a scrambled directing way, for example,  $Pub_{U_i}(U_j, Pub_{U_j}(U_k))$  for path  $U_i \rightarrow U_j \rightarrow U_k$ . For each hand-off client at the way, the rest of the way is scrambled by its open key. The encoded steering way is sent along each transfer hub. At the point when  $U_i$  gets the scrambled directing way, it decodes the way utilizing its private key ( $Pri_{U_k}$ ), and after that sends  $Pub_{U_j}(U_k)$  to  $U_j$ . Every recipient does likewise task to take in its successor.

### CONCLUSION

Questions and answers frameworks are utilized by numerous individuals for purposes, for example, data recovery, scholastic help, and exchange. To expand the nature of answers got and diminish the sit tight span or answers, we have created & prototyped an online informal community based Question & Answer framework, called Social Q&A. Properties of an informal organization were used here to end an inquiry to potential answer suppliers, guaranteeing that a given inquiry gets top notch reply in a brief timeframe. Sprout channel based upgrade techniques scramble the intrigue and companionship data traded between clients to ensure client security. The onion directing based answer sending ensures the personalities of askers and answers.

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