

Social Question and Answer System Using Naïve Bayes Classifier Algorithm

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Abstract— Question Answer (QA) is another investigation area in the field of Information science which comes into focus in latest couple of decades. In this paper we will introduce a QA System which diminishes the interest time to discover positive answer for the request. The fundamental objective is to improve the display of QA systems by viably sending requests to customers who are capable and prepared to react to the requests. To this end, we have arranged and executed Online based Social QA system which utilize the relational association properties of ordinary interest and basic trust friend relationship to recognize a customer, who are well headed to react to the request. Our results suggest that relational associations can be used to improve the fitting reaction quality and asker's holding up time. OAuth is an open standard endorsement show or structure that depicts how arbitrary workers and organizations can safely allow approved access for their potential benefits without truly sharing the hidden related, single logon capability. In check discourse, this is known as secure, untouchable, customer authority, assigned endorsement.

Keywords—community-based question answering, query user network, question categorizer, question user mapper, user interest analyzer.

I. INTRODUCTION

A lot of information returned by the online web crawlers like Google, hurray and so forth, clients become over-burden to search out the correct data from the online. Our Question-Answer (QA) framework takes care of this issue. Hurray Answers (YA) might be a huge and differing question-answer discussion [1], acting not just as a mode for sharing specialized information, yet as a territory where one can look for exhortation, accumulate assessments, and fulfil one's interest a couple of endless number of things. QA framework might be an essentially an Information Retrieval framework during which an inquiry is expressed to the framework and it move the nearest or right outcomes to the exact inquiry posed, an open area question noting framework targets restoring an answer in light of the client's inquiry. the arrangement which we get equally is inside the kind of short messages rather than a stock of important reports. QA structure expect a critical activity in our lifestyle for information and data sharing. Customers post questions and pick solicitations to answer inside the system. by virtue of the rapidly creating customer masses and along these lines the number of requests, it's doubtful for a customer to encounter an issue unintentionally that he can answer. Moreover, unselfishness doesn't encourage

all customers to nimbly answers, not to state top quality answers with a short answer hold up time. The essential objective of this paper is to improve the show of QA structures by viably sending solicitations to customers who are capable and prepared to address the requests. Online QA utilize the casual network properties of normal intrigue and shared trust buddy relationship to identify an asker through family relationship who are most likely to react to the request, and improve the customer security [2]. We additionally improve Social Question & Answer with security and effectiveness upgrades by ensuring client protection and distinguishes, and recovering answers naturally for intermittent inquiries. We depict the design and calculations, and directed complete enormous scope reproduction to gauge Online QA as contrasted and different strategies. Our outcomes propose that informal communities are regularly utilized to improve the arrangement quality and asker's holding up time [3]. We additionally actualized a genuine model of Online QA, and examine the QA conduct of genuine clients and inquiries from a little scope true Online QA framework.

In this framework we are creating two systems,

- One is informal organization site – which we will attach with individuals and may post our updates.
- Another is Query client arrange where we sign in with interpersonal organization id and post our inquiries and consequently the client who is fit and intrigued will answer thereto question [4]. During this system we've proposal (from the settings of informal organization client can apply) module where the client gets the inquiries which are related with him.

II. RELATED WORK

The making criticalness of Q&A frameworks requests a push to even more likely welcome these structures and to improve. The works in concentrated the impact of various elements (e.g., client profiles, messages measure, structure composed endeavors and framework check) in the easygoing relationship on Q&A execution. These appraisal results develop the arrangement of social inquiry and answer to use social affiliation properties in the game plan. Note that the current easygoing system dependent on the asker-answerer relationship in current Q&A frameworks is uncommon practically identical to online social affiliation subject to the

social relationship, which is utilized in social inquiry and answer. The works in focused on finding specialists and definitive clients [5]. Or on the other hand perhaps, social inquiry and answer expects to discover ordinary clients that can respond to questions including assumption type questions. Two or three appraisals have been coordinated to make notoriety models in Q&A structures to make the legitimacy of answers, and to pick the relationship between the notoriety of the clients and the possibility of their offered reactions [6]. Social inquiry and answer genuinely uses the social affiliation property of ordinary trust fellowship to persuade clients to offer reactions without depending upon an extra notoriety model. Reaction gives closeness to other accomplice assistant frameworks, for example, in utilizing the complete power of allies for a specific objective. Some examination orders examinations concerning predefined plans, making it less perplexing for clients to find starting late introduced demands and for geniuses to discover keeps an eye on they can reply. Quan et al. proposed three new controlled term weighting plans for demand request, and reviewed every course of action utilizing a follow from Yahoo! Answers [7]. Tune et al. proposed a dynamic technique including point watchful word perceiving confirmation and weighting, semantic planning, and closeness estimation.

SOS merges an online easy-going system, where focus focuses accomplice each other by their social affiliations. An enlistment server is answerable for focus point enrolment. Every client has an intrigue ID, which tends to his/her good position. The closeness of two client's bit of room IDs recommends the comparability between the two clients' interests. Clients offering logically key interests to an asker will without a doubt have the decision to respond to the askers demand [8]. Besides, clients having shorter social separations with an asker will without a doubt be happy to respond to the askers demand. SOS has a metric likeness (S) that assesses the probability of an inside point to be skillful and ready to address another middle focus demand. It is compelled by the intrigue likeness between the solicitations favored position and the beneficiary's enthusiasm likewise as the social closeness between the solicitation beneficiary and sender.

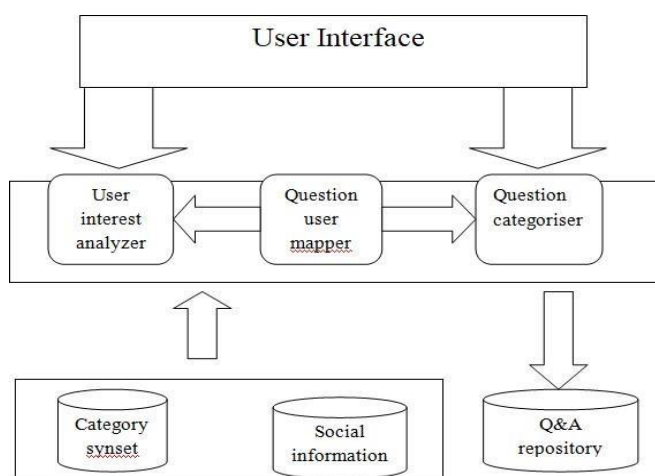


fig. 1. Architectural design of social question and answer

SOS delineates a consistent K, which is the best number of accomplices that a center point can send/forward a requesting in its sidekick list. SOS connects each center highlight portray TTL, which is the maximal number of ricochets that a requesting can be sent. An inside picks TTL depending on how central the sales are. Figure shows the sales planning strategy in SOS. After asker a beginning of a sale, it propels the sales to the top K mates (center centers B and C) who have the most brought S up in its sidekick list with the requesting.

The arrangement of a specific contraption for pursue recording is principally awakened by the need of watching and recording amazingly short contact periods, couple of minutes, that rise up out of self-assertive flexibility in a thick domain [9]. As a result, PMTRs have been proposed to work with beaconing times running from 1 sec. to some configurable regard which depends upon the flexibility condition we wish to watch. In addition, the contraptions need to enable unmanned preliminaries suffering 3 every month without batteries substitution. Layer 2 guides are the uncommon housings a PMTR imparts to its neighbor's. The primary go through a reference point is gotten from a given encounter, the here and now is recorded for the contact start, together with the experience ID; a contact closes when signals from a particular encounter have been missing for more than t seconds, with $t = 60$ in our preliminaries. The close-by memory measure should be dimensioned to store the contacts of the preliminaries. Our demonstrating grounds have made all things considered 2000 contacts for every contraption with beaconing time set to 1 sec. No specific information transmission and taking care of necessities have been imagined for PMTRs.

IM-an-Expert is a computerized administration that gets questions through IM, finds and contacts potential answerers with expertise or enthusiasm for the inquiry theme, and intercedes the exchange among asker and answerer [10]. The asker starts an IM discussion with IM-an-Expert and suggests the conversation starter. The inquiry is utilized to recover a candidate set of experts dependent on profile data (portrayed later). A little gathering of those experts who are at present accessible (not occupied, away, in a gathering, in a call, and so forth accessible by means of quality data from the IM customer) are reached through IM three at a time, in dropping request of their expertise, to decide if they are happy to help answer the inquiry. On the off chance that and when an answerer acknowledges, different solicitations are cancelled [11]. On the off chance that a candidate answerer does not react in time or rejects the inquiry, the administration asks others. When an answerer acknowledges, IM-an-Expert intervenes the discussion between the asker and answerer. When the discussion closes, the asker is solicited to alternatively rate the quality from the answer they got on a scale from one (not accommodating) to five (exceptionally supportive) [12]. To help the usefulness depicted in this section, the framework has two parts: (i) expertise locator: chooses clients who are in all probability ready to answer an inquiry, and (ii) exchange manager: handles question preparing and correspondence management all through the inquiry lifecycle [13].

III. ALGORITHM USED

Customer Interest Analyzer utilizes each customer's profile information in the relational association and customer co-tasks (reacts to give and questions requested) to choose the interests of the customer in the predefined interest classes [14]. This is given that a customer asks or answers requests in an interest order, he is likely going to be enthusiastic about this particular characterization.

Question-User Mapper perceives the commendable answerers for a given request [15]. The potential answer providers are perused the asker's allies inside the online relational association. Note that the movements during a customer's allies inside the online casual network don't impact the presentation of Online QA in light of the fact that it by and large uses a customer's current mates [16]. to see the fittingness of a darling (Uk) as an answer provider for an issue, two limits are thought of:

- The interest likeness between the interest vectors of the partner and along these lines the request and
- The social closeness between the partner and along these lines the asker

The past addresses the conceivable limit of a dear to address the request, and thusly the last addresses the capacity of a darling to react to the request inside the online casual association, a customer's colleagues with logically ordinary interests, visit affiliations or fundamental partners (i.e., higher social closeness) [17] are furthermore prepared to reply to the customer's request, we consider three estimations:

- Similarity between their favorable position vectors
- Their asking and taking note of association repeat
- Number of their ordinary sidekicks.

The pseudocode of the Question-User Mapper is showed up in Algorithm 2 [18]. Social division between two center points is that the number of bobs inside the briefest path between them inside the online casual association [19]. If nobody responds during a picked time period, Online QA can endeavor the center points in 2-bob social great ways from the asker, by then in 3hop social partition, until the centers in Time-To-Live (TTL)- bounce social separation [20].

Along with these two algorithms we have also used Naive Bayes classifier algorithm [21] for classification purpose.

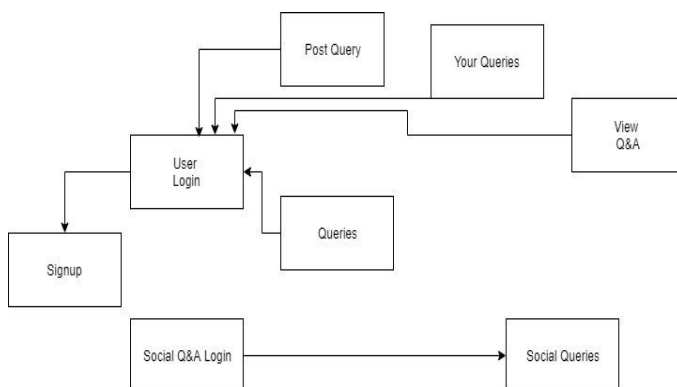


Fig. 2. Structural Diagram of Social question and answer

IV. RESULTS AND DISCUSSIONS

Table 1. Samples in each class(dataset)

Class	Number of Samples
Movie	146
Food	235
Politics	34
Physics	102

Table 2. Accuracy of social question and answer

Training	Classification Accuracy	Precision	Recall	F measure
40%	0.7395	0.6089	0.5310	0.7395
50%	0.7526	0.6215	0.5454	0.7526
60%	0.7606	0.6292	0.5541	0.7606
70%	0.7674	0.6351	0.5608	0.7674
80%	0.7724	0.6382	0.5657	0.7724

Five different tests have been done on social question and answer to check for its accuracy.

- In the first test, the training size was 40% of the dataset and the testing size of 60% of the dataset. We achieved a classification accuracy of 73.95% in this case.
- In the second test, the training size was 50% of the dataset and the testing size of 50% of the dataset. We achieved a classification accuracy of 75.26% in this case.
- In the third test, the training size was 60% of the dataset and the testing size of 40% of the dataset. We achieved a classification accuracy of 76.06% in this case.
- In the fourth test, the training size was 70% of the dataset and the testing size of 30% of the dataset. We achieved a classification accuracy of 76.74% in this case.
- In the fifth test, the training size was 80% of the dataset and the testing size of 20% of the dataset. We achieved a classification accuracy of 77.24% in this case.

The accuracy of Naïve Bayes is 76.8%.

The accuracy of Client interest analyzer is 77.6%.

The accuracy of Question-User Mapper is 76.7%.

V. CONCLUSION AND FUTURE ENHANCEMENTS

The social question and answer are a social network-based platform, where different users can post their queries, view the queries which have been forwarded to them by different users and answer them. The user can also view also his/her other queries which he/she had asked previously along with their answers. The admin is subjected with the task of categorizing the question, along with forwarding it to the friend of that

user. We have used Naïve Bayes classifier. Instead of this algorithm we can use any classifier of machine learning algorithm for classification purpose.

The social question and answer can be enhanced in the future with a wide range of different class labels with even a greater accuracy. An android application can be made for social question and answer. While we are only using English, many other languages can also be provided. The query forwarding process can be automated by allowing it to directly classify the questions and forward it to the other users, without the intervention of the admin. The system can further be modified to answer the redundant question by itself, by searching the previous answers. Other techniques such as topic modelling and word embedding can be incorporated to find redundant question with a large-scale user set.

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