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Multimedia Question Answering System Using Page Ranking Algorithm

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Abstract—
In general, existing cQA forums provide only textual answers, which are not informative enough for many questions. Conventional MMQA aims to seek multimedia answers without the assistance of textual answers. This MMQA scheme using diversification method is able to enrich textual answers in cQA with appropriate meta data which improves the informativeness and it bridges two gaps (i) The gap between questions and textual answers (ii) The gap between textual answer and multimedia answer. This scheme consists of three components: answer medium selection, query generation and data selection and presentation. This scheme determines the type of media information that can be added for a textual answer. This scheme predicts the type of medium to be added using Naïve Bayes Classifier, it automatically generates query based on QA knowledge and performs multimedia search. Finally this scheme performs query adaptive re-ranking and duplicate removal to obtain a set of images and videos for presentation along with textual answer. This scheme uses diversification methods to make the enriched media data more diverse. This scheme uses Page Ranking algorithm to retrieve more relevant and diverse search results.

Keywords- Multimedia Question Answering(MMQA), Community Question Answering(cQA), question answering, media selection, Page ranking.

I.   INTRODUCTION

QUESTION-ANSWERING (QA) is the method for answering a query in a simple English language [1]. It avoids the data contents that are vast in quantity which are displayed as links in search engines instead of getting the exact answers. In many cases the results are good which are selected by users. The information gainers are gaining the information for certain specific questions in any topic and get answers. The search engines are providing the answers in a simple and effectively understandable manner. The present procedure is only providing the answers with textual answers only. But it may not be sufficient and cannot easily understand and they can get the data easily. In fig 1: *"How to make Orange juice concentrate?"* It has given only textual answers for getting the information easily we are providing images and videos for any query. We are adding multimedia contents to the answers for getting the information. The automated approach cannot be obtaining result for the users. [2] Our aim is not straight forwardly displaying the answer instead ranked answers with multimedia contents. Based
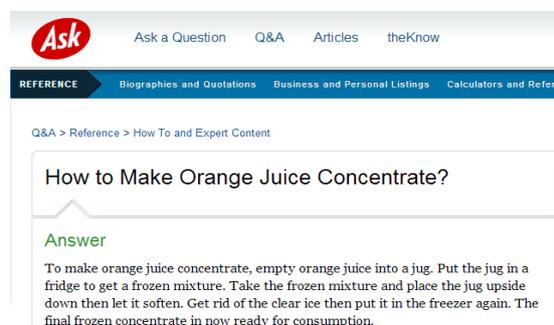

Fig 1: An example from Ask.com

on the query given the top ranked answer is been given.

Our idea is seen in solving the MMQA problem by combining the user and human. Fig2: The output of the media source is given as a proof for the better answer medium selection. For multimedia data selection and presentation we provide the image to change the text to whether it is related to the human-related. We are also searching for the cases where the textual answers are not present.

Fig 2: An example of proposed system

II. PARALLEL EFFORT

A. Towards Mixed Media QA Against Text File QA

They are mainly focused on the intelligent systems in certain domains. Based on the type of the questions and expected answers we are providing some sorts of QA into a. Open Domain QA, b. Restricted Domain QA [1], c. Definitional QA and d. List QA. In some cases automatic QA have difficulties in providing the answers for complex questions. For getting the technical knowledge any user can seek idea and opinions. [2]. the existing CQA system supports only textual answers which are not much informative. Some users give multimedia QA for getting the multimedia answer. The systems have text based QA technology support the factoid QA in the form of visuals of news videos and also in text. Several videos uses text transcript derived video OCR (Optical Character Recognition [4]. image based QA [7] are specially for viewing the objects [5]. The video based QA are given as media answers from YouTube. Instead of giving multimedia data we are providing the images and videos to enrich the textual answers for users. This idea is for deal in with many general questions to get better information.

B. Ranking Interactive Media Quest

The latest media search engines are used to build the text information included with multimedia entities such as titles and text. But the text information has the content of images and videos and this is for decreasing the search performance [9]. Rearranging is the method that is used for visual information of images and videos. Existing rearranging algorithms are mainly into two. They are one is pseudo relevance [10]. Feedback and the other is graph-based rearranging. The pseudo relevance feedback approach is for latest results that are relevant samples that are assumed as irrelevant. A ranking model is mainly on pseudo relevant and irrelevant samples that are used to rearrange the
Fig: 3 Proposed Architecture

A. Catechism Planted Categorizing

The answer is categorised into yes/no class "*Are you coming for the party*", choice class "*Do you*

original output. It provides the relevance feedback for users to provide the feedback by the results that are relevant or irrelevant.

The graph based rearranging [9][11] is usually on two assumptions 1.the disagreement between the initial and refined ranking list.2. The ranking positions of similar samples are close. This approach has a graph where the vertices are images and videos and the edges reflect their pair wise. A graph based learning process is then based on regularization framework. Conventional methods have measures based on colour, shape, texture. Here we categorize the queries into two classes person-related and non-person-related, and then we use the similarities for different features for the different query type.

C. Perquisition About Interactive Media

The general problem is in finding the images from the databases. These are easily tackle the video and audio retrieval problems Multimedia search efforts can be categorized into two types .They are text-based search and content-based search. The text-based search has textual queries to get media data by matching the textual descriptions. Several media websites are accumulated in media entities in text based search. In the content based media retrieval, it analyzes the contents of media data than metadata. Instead the content based retrieval has some limitations such as high cost, difficulty in visual queries. Keyword based search are widely used in media search. The intrinsic have commercial media search engines for gap between the textual queries and multimedia data.

III. INTERPRETATION MEDIA PICKING

The interpretation tells us whether textual is needed or image or video. For example "*When did India became Republic*" textual answer is sufficient, "*Who is the vice chancellor of America*" image answer is sufficient, "*How to install Operating System*" video answer is sufficient [8]. The selection of the answer is classified as a. Text b. Text + image c. Text + video d. Text + image + video
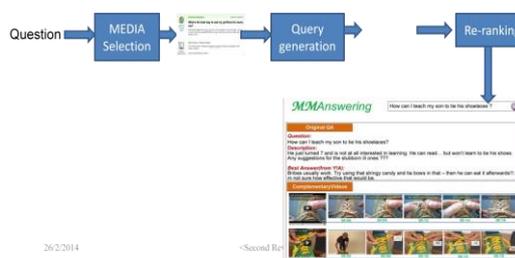
like tea or coffee", quantity class "*When was the first super frame computer made*", enumeration class "*Name of the oceans around India*", and description class "*What are the ways to reach America*". Initially exploit the method in [6] to get

the informative word. We need only text answer for yes/no, choice and quantity class., for enumeration and description class text + image is sufficient; the verb is needed to answer with text + video or text + image + video. Based on the table 1 and 2 the classification is been made. We use naive Bayes classifier to get the appropriate answer.

TABLE 1
ILLUSTRATIVE QUESTIONING WORDS

Illustrative words	Group
Be, there, have, when, will, can, how + adj /adv, Why, how, where, who, to, which, what	Text

TABLE 2
ILLUSTRATIVE CLASS PRECISE ASSOCIATED WORDS

Grouping	Class Precise Associated Words
Text	number, religions, website, country, distance, speed, height, name, period, times, age, date ,rate, birthday, etc.,
Text + Image	band, photo, what is a, place, whom, surface, capital, largest, pictures, logo, who, image, look like, pet, clothes, image, appearance, symbol, figure, etc.,
Text + Video	recipe, differences, dance, first, said, music, how can, invented, story, how do, how to, ways, steps, film, tell, songs, music, etc.,

A. Picking Established Depend on Populous Affirmation

Media selection is by four class classification model based on results of question based classification, answer based classification, and media resource analysis. Question based classification is of four scores the question is answered by "text"," text + image"," text + video" ,"text + image + video". Answer based classification is of four types. The media resource analysis is of three scores which are for results of text, image and video search.

B. Inquiry Procreation Pick And Launching

Collecting the exact image and video data from the browser we are generating the queries from text QA pairs for performing multimedia search engines. We are using two steps. First is query extraction. Textual questions and answers are usually complex sentences. We are extracting the keywords from the questions for querying. Second is the query selection. We generate different queries: one from question, one from answer, one from combination of both question and answer

which is the most informative depends on QA pairs, *"How did the moon look like"* There are helpful keywords in the answer, *"What is the symbol of currency"* Combining the question and the answer to generate the efficient query, *"Who is the first president of China"* for each QA pair, we generate three queries. First convert the question to query keywords. Second we identify several key concepts which have major impact.. Thus we are combing the two queries that are generated from the question and answer. Hence there are three queries.

The generated queries collect the images and videos from the Google images and video search engines respectively. Most of the search engines area text based indexing and lot of irrelevant data. We adopt the graph based rearranging method [8].

IV. PROPOSED SYSTEM

From the observations made in the previous sections, we propose a system which produces more informative search results by selecting the media type automatically. The system has three modules i) media selection ii) query generation, iii) data selection and presentation.
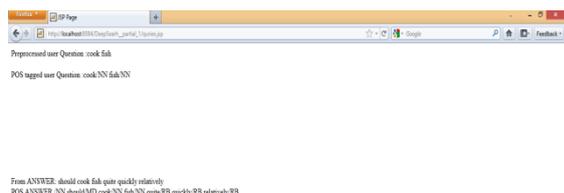
a) Media selection

It is used to analyze the given QA pair; it predicts whether the textual answer should be enriched with media information and which kind of media data should be added. Media data can be classified into four classes: text, text + image, text + video, text + image + video. This scheme will automatically collect images, videos, or the combination of image and video to enrich the original textual answer.
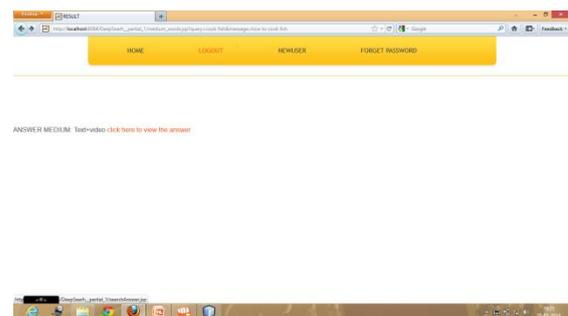

b) Query generation

It is used to collect the multimedia data; we need to generate the informative queries. Given a QA pair, this component extracts three queries from the question, answer and QA pair, respectively. The query is generated from the question by removing the stop words using stemming algorithm. The POS is generated using Stanford Log Linear POS tagger and then the histogram is calculated to select which query is more suitable to get the relevant answers.

c) *Data selection and presentation*

This method vertically collects the images and video data with multimedia search engines. We then perform re-ranking and duplicate removal to produce a set of accurate and representative images and videos to enrich the textual answers. For the given question proper media is selected and refined search results are displayed using Page ranking algorithm.
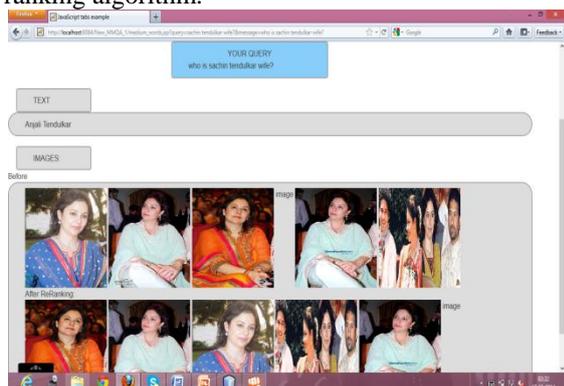
A. *.Upon the enlightening of enhanced media data*

All the complementary media data are collected based on textual queries through which we are getting from QA pairs. In other say queries does not always reflect the original QA pairs. It cannot reflect these media data answers the original answer due to the gap between QA pair and generated query. It also checks to estimated whether the media data can answer the question. There are 3 score candidates 2, 1, 0.The 3 score candidates are the media sample can perfectly, partially and cannot answer the question respectively. We by chance select 200 QA answer for enriched media data for appraisal. The results actually indicate that for as a minimum 80.29% question that exist enrich media data that can well answer the questions. The average rating score is 1.266.

B. *Upon the non appearance of textual quick fix*

IV.EXPERIMENTAL RESULTS

Here the empirical evaluation is the experimental settings such as data set and ground truth labelling. There are two types of evaluation. One is the local evaluation which is for effectiveness for the components such as answer medium selection, query generation, multimedia data selection and presentation. The other is the global evaluations which test the usefulness of the media data.

TABLE 3
THE EFFICENCY RELATING OF QUESTION-BASED CLASSIFICATION WITH VAIRANT FEATURES.HERE "RELATED" MEANS CLASS-PRECISE ASSOCIATED WORDS

Features\Testing set	Google	Picasa	Both
Trigram	81.42%	85.99%	83.91%
Trigram + Head	85.37%	88.78%	87.20%

TABLE 4
THE EFFICIENCY RELATING OF ANSWER-BASED CLASSIFICATION WITH VARIANT FEATURES

Features\Testing set	Google	Picasa	Both
Trigram	67.37%	71.30%	69.42%
Trigram +Verb	69.76%	74.82%	72.41%

In the future proposal, the existing community contributed textual answers plays an important role in the question understanding. So, here the question is whether the favour can deal with and perform when there are no textual answers so far. First we need to remove the informational clues from the textual answers in the answer medium selection and multimedia query generation mechanism. Here we additional examine the performance of the scheme without textual answers. We compare the performance of the answer medium selection with and without textual answers. It can examine that without textual answers, and the classification correctness will degrade by more than 5% for the answer medium selection. Based on the 400 QA pairs mentioned , we compare the in formativeness of the obtain media data with and without using textual answers.

We can see that without textual answers the score will humiliate from 1.266 to1.099.The move toward without textual answers can be

regarded as a conventional MMQA approach which is directly finding the multimedia answers based on the question. We assume the new settings present the user revise results. The answers are not as revealing as those generated with the textual answers; they are still very revealing with clean textual answers.

C. Assessment of Ranking

To calculate the methods of judging whether the QA pair is a person relevant or non person irrelevant .We choose five hundred QA pairs from dataset randomly. Then we learn SVM model with RBF kernel based on seven dimensional facial character tics in order to evaluate our query adaptive storage we first select random 25 quires from person relevant ones for each question .150 images or video converted rearranging. Figure 3 illustrates the image search performance [3] comparison from other to our proposed approach. The convention method [3] only uses comprehensive feature denoted as convention. Figure 4 illustrates the video search performance comparison from other to our proposed approach. Figure 5 illustrates Results of Interactive answering for "*who is the chancellor of China*" "text + image". Query adaptive rearranging [3] with text based classification. From the result we see two query based adaptive method and consistent outperform convention uses global features. Fig: 6 illustrates the Relating of overall average enlightening

V. CONCLUSION AND FORTHCOMING PERFORMANCE

In this paper ,we portray the encouragement and transformation of MMQA, its   scrutinize approach, we propose a unique contrivance to answer questions using media data by ever again   textual answers in cQA.For the   given query   our contrivance first foretell which type of media is relevant for endowing the original textual answer. Finally page ranking is carried out to retrieve images and videos. Hence the appropriate answer can be got in an efficient way. In our pondering we heeded inappropriate answer because while doing reranking the optimal solution is got. It would be better if we use some other new method to perform ranking for retrieving images.

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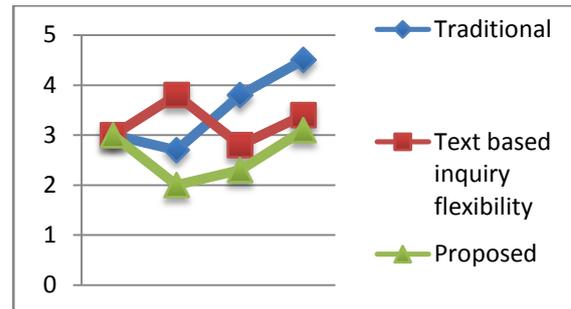
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