ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

QA Generation Using Multimedia Based Harvesting Web Information

[1]S.Jensy Mary, [2]A.S Syed Navaz & [3]J.Antony Daniel Rex

[1]Asst Professor, Dept. of Computer Science, St.Joseph's College of Arts & Science (Autonomous), Cuddalore, India

[2]Asst Professor, Dept of Computer Science, Muthayammal College of Arts & Science, Namakkal, India

[3]Asst Professor, Dept. of Computer Science, St.Joseph's College of Arts & Science (Autonomous), Cuddalore, India

ABSTRACT: Along with the proliferation and improvement of underlying communication technologies, community QA (cQA) has emerged as an extremely popular alternative to acquire information online, owning to the following facts. First, information seekers are able to post their specific questions on any topic and obtain answers provided by other participants. By leveraging community efforts, they are able to get better answers than simply using search engines. Second, in comparison with automated QA systems, cQA usually receives answers with better quality as they are generated based on human intelligence. Third, over times, a tremendous number of QA pairs have been accumulated in their repositories, and it facilitates the preservation and search of answered questions. For example, Wiki Answer, one of the most well-known cQA systems, hosts more than 13 million answered questions distributed in 7,000 categories (as of August 2011).

Despite their great success, existing cQA forums mostly support only textual answers, as shown in Fig. 1. Unfortunately, textual answers may not provide sufficient natural and easy-tograsp information. Fig. 1(a) and (b) illustrate two examples. For the questions "What are the steps to make a weather vane" and "What does $1 Trillionl look like", the answers are described by long sentences. Clearly, it will be much better if there are some accompanying videos and images that visually demonstrate the process or the object. Therefore, the textual answers in cQA can be significantly enhanced by adding multimedia contents, and it will provide answer seekers more comprehensive information and better experience.

KEYWORDS: Multimedia, Question Answering, Video, Image.

I. INTRODUCTION

Community question answering (cQA) services have gained popularity over the past years. It not only allows community members to post and answer questions but also enables general users to seek information from a comprehensive set of well-answered questions. However, existing cQA forums usually provide only textual answers, which are not informative enough for many questions. In this paper, we propose a scheme that is able to enrich textual answers in cQA with appropriate media data. Our scheme consists of three components: answer medium selection, query generation for multimedia search, and multimedia data selection and presentation. This approach automatically determines which type of media information should be added for a textual answer.

It then automatically collects data from the web to enrich the answer. By processing a large set of QA pairs and adding them to a pool, our approach can enable a novel multimedia question answering (MMQA) approach as users can find multimedia answers by matching their questions with those in the pool. Different from a lot of MMQA research efforts that attempt to directly answer questions with image and video data, our approach is built based on community-contributed textual answers and thus it is able to deal with more complex questions. We have conducted extensive experiments on a multisource QA dataset.

II. LITERATURE REVIEW

Title: Question Answering over Community Contributed Web Videos, Author: Guangda Li, The amount of information on the Web has grown exponentially over the years, with content covering almost any topic. As a result,

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

when looking for information, users are often bewildered by the vast quantity of results from search engines. Users usually have to painstakingly browse through a long list of results to look for a precise answer. Therefore question-answering (QA) research emerged in an attempt to tackle this information-overload problem. Instead of returning a ranked list of results as is done in the current search engines, QA aims to leverage in-depth linguistic and media content analysis as well domain knowledge to return precise answers to natural language questions.

Title: Toward Geographic Information Harvesting: Extraction of Spatial Relational Facts from Web Documents, Author: Bari, Italy This paper faces the problem of harvesting geographic information from Web documents, specifically, extracting facts on spatial relations among geographic places. The motivation is twofold. First, researchers on Spatial Data Mining often assume that spatial data are already available, thanks to current GIS and positioning technologies. Nevertheless, this is not applicable to the case of spatial information embedded in data without an explicit spatial modeling, such as documents. Second, despite the huge amount of Web documents conveying useful geographic information, there is not much work on how to harvest spatial data from these documents. The problem is particularly challenging because of the lack of annotated documents, which prevents the application of supervised learning techniques. In this paper, we propose to harvest facts on geographic places through an unsupervised approach which recognizes spatial relations among geographic places without supposing the availability of annotated documents. The proposed approach is based on the combined use of a spatial ontology and a prototype-based classifier. A case study on topological and directional relations is reported and commented.

III. SYSTEM ANALYSIS

3.1 Existing system

Community question answering (cQA) services have gained popularity over the past years. It not only allows community members to post and answer questions but also enables general users to seek information from a comprehensive set of well-answered questions.

3.1.1 Disadvantages

However, existing cQA forums usually provide only textual answers, which are not informative enough for many questions.

3.2 Proposed system

In this paper, we propose a scheme that is able to enrich textual answers in cQA with appropriate media data. Our scheme consists of three components: answer medium selection, query generation for multimedia search, and multimedia data selection and presentation. This approach automatically determines which type of media information should be added for a textual answer. It then automatically collects data from the web to enrich the answer. By processing a large set of QA pairs and adding them to a pool, our approach can enable a novel multimedia question answering (MMQA) approach as users can find multimedia answers by matching their questions with those in the pool.

3.2.1 Advantage

In, proposed cQA forums provide multimedia answers (text, image, Video), which are informative enough for many questions.

IV. ALGORITHM

4.1 Answer Medium Selection

Answer medium selection. Given a QA pair, it predicts whether the textual answer should be enriched with media information, and which kind of media data should be added. specifically, we will categorize it into one of the four classes: text, text image, text video, and text+image+video1 . It means that the scheme will automatically collect images, videos, or the combination of images and videos to enrich the original textual answers.

As introduced in Section I, the first component of our scheme is answer medium selection. It determines whether we need to and which type of medium we should add to enrich the textual answers. For some questions, such as “When did america become allies with Vietnamese”, pure textual answers are sufficient. But for some other questions we need to add image or video information. For example, for the question “Who is Pittsburghs quarterback

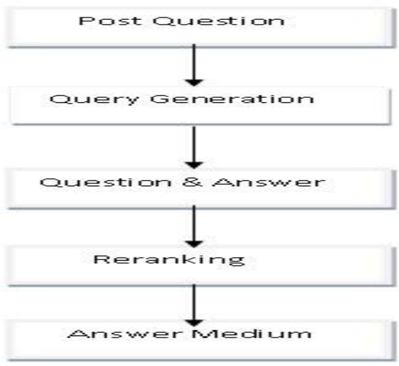
ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

for 2008", it is better to add images to complement the textual answer, whereas we should add videos for answering the question "How to install a Damper pulley on neon". We regard the answer medium selection as a QA classification ask. That means, given a question and textual answer, we categorize it into one of the following four classes: (a) only text, which means that the original textual answers are sufficient; (b) text + image, which means that image information needs to be added; (c) text + video, which means that only video information needs to be added; and (d) text + image + video, i.e., we add both image and video information.



.

Fig.1 Architecture of QA

V. Modules

5.1 New user registration

In this session the user can register their account by giving the User ID, User Name, Password, Gender, Date of Birth, Age, Address, Phone Number, and Email ID. After registration only the user can log on to their account.

5.2 User login

In this session the user can login into their account by giving the user name & Password. If they give the valid user name & Password only they log on otherwise they won't logon to their account.

5.3 View user profile

In this session the user can view their profile.Which they gave at the time of registration.

5.4 Add queries

In this session the user can add the quarries or questions which they want to ask with others. Those queries may be in text format, image format, and video format. For this purpose we use the Answer Medium Selection Algorithm.

- Answer medium selection.

Given a QA pair, it predicts whether the textual answer should be enriched with media information, and which kind of media data should be added. Specifically, we will categorize it into one of the four classes: text, text image, text video, and text+image+video1. It means that the scheme will automatically collect images, videos, or the combination of images and videos to enrich the original textual answers.

- Query generation for multimedia search

  In order to collect multimedia data, we need to generate informative queries. Given a QA pair, this component extracts three queries from the question, the answer, and the QA pair, respectively. The most informative query will be selected by a three-class classification model.

5.5 Answer queries

In this session the user can answer their queries or questions for any other users. The users may be in text, image and video formats

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

- Multimedia data selection and presentation

Based on the generated queries, we vertically collect image and video data with multimedia search engines. We then perform re ranking and duplicate removal to obtain a set of accurate and representative images or videos to enrich the textual answers.

- Re-ranking

If a query is person-related, we perform face detection for each image and video key-frame. If an image or a key-frame does not contain faces, it will be not considered in re ranking. After re ranking, visually similar images or videos may be ranked together. Thus, we perform a duplicate removal step to avoid information redundancy. We check the ranking list from top to bottom. If an image or video is close to a sample that appears above it, we remove it.

VI. INPUT AND OUTPUT DESIGN

6.1 Input design

Input design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system. A large number of problems with the system can usually be traced back to fault input design and method. Needless to say, therefore that the input data is the life block of a system and has to be analyzed and designed with the most consideration.

The decisions made during the input design are:

- To provide cost effective method of input.
- To achieve the highest possible level of accuracy.
- To ensure that input is understood by the user.

System analysts decide the following input design details like, what data item to input, what medium to use, how the data should be arranged or coded data items and transaction needing validations to detect errors and at last the dialogue to guide users in providing input. Input data of a system may not be necessarily a raw data captured in the system from scratch. These can also be the output of another system or sub-system. The design of input covers all phases of input from the certain of initial data to actual entering the data to the system for processing.

6.2. Output design

Output design generally refers to the results and information that are generated by the system. For many end-users, output is the main reason for developing the system and the basis on which they evaluate the usefulness of the application. The objective of a system finds its shape in terms of output. The analysis of the objective of a system leads to determination of outputs. Outputs of a system can take various forms. The most common are reports, screens displays printed form, graphical drawing etc. the outputs vary in terms of their contents, frequency, timing and format. The users of the output, its purpose and sequence of details to be printed are all considered.

When designing output, the system analyst must accomplish things like, to determine what information to be present, to decide whether to display or print the information and select the output medium to distribute the output to intended recipients. External outputs are those, whose destination will be outside the organization and which require special attention as the paper image of the organization.

Table - dbo.answer_info | Table - dbo.user_register | Table -

Column Name	Data Type	Allow Nulls
ansid	int	☑
textanswer	varchar(50)	☑
imageanswer	image	☑
videoanswer	image	☑
qid	varchar(50)	☑
userid	varchar(50)	☑
		☐

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

VII. SYSTEM IMPLEMENTATION

The purpose of System Implementation can be summarized as follows: making the new system available to a prepared set of users (the deployment), and positioning on-going support and maintenance of the system within the Performing Organization (the transition). At a finer level of detail, deploying the system consists of executing all steps necessary to educate the Consumers on the use of the new system, placing the newly developed system into production, confirming that all data required at the start of operations is available and accurate, and validating that business functions that interact with the system are functioning properly. Transitioning the system support responsibilities involves changing from a system development to a system support and maintenance mode of operation, with ownership of the new system moving from the Paper Team to the Performing Organization.

A key difference between System Implementation and all other phases of the lifecycle is that all paper activities up to this point have been performed in safe, protected, and secure environments, where paper issues that arise have little or no impact on day-to-day business operations. Once the system goes live, however, this is no longer the case. Any miscues at this point will almost certainly translate into direct operational and/or financial impacts on the Performing Organization. It is through the careful planning, execution, and management of System Implementation activities that the Paper Team can minimize the likelihood of these occurrences, and determine appropriate contingency plans in the event of a problem.

7.1 *List of process*

This phase consists of the following processes:

- Prepare for System Implementation, where all steps needed in advance of actually deploying the application are performed, including preparation of both the production environment and the Consumer communities.
- Deploy System, where the full deployment plan, initially developed during System Design and evolved throughout subsequent lifecycle phases, is executed and validated.
- Transition to Performing Organization, where responsibility for and ownership of the application are transitioned from the Paper Team to the unit in the Performing Organization that will provide system support and maintenance.

VIII. CONCLUSION

In this paper, we describe the motivation and evolution of MMQA, and it is analyzed that the existing approaches mainly focus on narrow domains. Aiming at a more general approach, we propose a novel scheme to answer questions using media data by leveraging textual answers in cQA. For a given QA pair, our scheme first predicts which type of medium is appropriate for enriching the original textual answer. Following that, it automatically generates a query based on the QA knowledge and then performs multimedia search with the query. Finally, query-adaptive re ranking and duplicate removal are performed to obtain a set of images and videos for presentation along with the original textual answer. Different from the conventional MMQA research that aims to automatically generate multimedia answers with given questions, our approach is built based on the community contributed answers, and it can thus deal with more general questions and achieve better performance.

In our study, we have also observed several failure cases. For example, the system may fail to generate reasonable multimedia answers if the generated queries are verbose and complex. For several questions videos are enriched, but actually only parts of them are informative. Then, presenting the whole videos can be misleading. Another problem is the lack of diversity of the generated media data. We have adopted a method to remove duplicates, but in many cases more diverse results may be better. In our future work, we will further improve the scheme, such as developing better query generation method and investigating the relevant segments from a video. We will also investigate multimedia search diversification methods, such as the approach in [?], to make the enriched media data more diverse.

REFERENCES

1. S. A. Quarteroni and S. Manandhar, “Designing an interactive open domain question answering system,” *J. Natural Lang. Eng.*, vol. 15, no. 1, pp. 73–95, 2008.

ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 11, November 2015

2. D. Mollá and J. L. Vicedo, "Question answering in restricted domains: An overview," *Computat. Linguist.*, vol. 13, no. 1, pp. 41–61, 2007.
3. H. Cui, M.-Y. Kan, and T.-S. Chua, "Soft pattern matching models for definitional question answering," *ACM Trans. Inf. Syst.*, vol. 25, no. 2, pp. 30–30, 2007.
4. R. C. Wang, N. Schlaefer, W. W. Cohen, and E. Nyberg, "Automatic set expansion for list question answering," in *Proc. Int. Conf. Empirical Methods in Natural Language Processing*, 2008.
5. L. A. Adamic, J. Zhang, E. Bakshy, andM. S. Ackerman, "Knowledge sharing and Yahoo answers: Everyone knows something," in *Proc. Int. World Wide Web Conf.*, 2008.
6. G. Zoltan, K. Georgia, P. Jan, and G.-M. Hector, Questioning Yahoo! Answers, Stanford Info Lab, 2007, Tech. Rep.
7. A.S.Syed Fiaz, I.Alsheba, R.Meena, "Using Neural Networks to Create an Adaptive Character Recognition System", Discovery - The International Daily journal, 37(168), pp.53-58, 2015.
8. T. Yeh, J. J. Lee, and T. Darrell, "Photo-based question answering," in *Proc. ACM Int. Conf. Multimedia*, 2008.
9. C.Karthik Raj , A.Revanth , K.Karthick, "Tactile Sensing System Using Artificial Neural Networks", Journal of Nano Science and Nano Technology, Vol 2, Issue 6, February 2014, Pp 670-673.

BIOGRAPHY

S. JENSY MARY received M.Sc., from Holy Cross College, Trichy from Bharathidasan University, M.Phil in Computer Science from St.Joseph's College of Arts & Science (autonomous), Cuddalore. She researched and published one paper in national conference. Currently she is working as an Assistant Professor in the Department of Computer Science at St.Joseph's College of Arts & Science (autonomous), Cuddalore, India. Her Research areas are Multimedia Streaming & Image processing.

A.S.SYED NAVAZ received M.Sc in Information Technology from K.S.Rangasamy College of Technology, Anna University, Coimbatore, M.Phil in Computer Science from Prist University, Thanjavur, M.C.A from Periyar University, Salem and Pursuing Ph.D in the area of Wireless Sensor Networks. He researched and published papers in International journals and working as Editorial Board Member in International Journals & Reviewer for International journals. He is a Member of 13 International Social Bodies. Currently he is working as an Asst Professor in the Department of Computer Science at Muthayammal College of Arts & Science, Namakkal, India. His Research areas are Wireless Sensor Networks, Mobile Computing & Image Processing.

J.ANTONY DANIEL REX received M.C.A from Periyar University, Salem, M.Phil.,in Computer Science from Government arts college ,Salem, He researched and published 3 International journals & presented one paper in national conference and one paper in international conference . Currently he is working as an Assistant Professor in the Department of Computer Science at St.Joseph's College of Arts & Science (autonomous),Cuddalore, India. His Research areas are Wireless Sensor Networks, Mobile-Adhoc network& Image processing.