Using Conventional MMQA To Automatically Annotate Media Entities

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ABSTRACT: It is worth stating that already exist several research efforts enthusiastic to automatically answering questions with multimedia data i.e. the so-called Multimedia Question Answering (MMQA). But these approaches generally work on definite narrow domains and can barely be generalized to handle questions in broad domains. This is due to the fact that in order to complete automatic MMQA we first need to understand questions which are not an easy assignment. Our proposed approach in this work does not aim to directly answer the questions and instead we augment the community-contributed answers with multimedia contents. The plan divides the huge gap between question and multimedia answer into two smaller gaps i.e., the gap between question and textual answer and the gap between textual answer and multimedia answer. In our scheme the first gap is linked by the crowd-sourcing intelligence of community members and thus we can focus on solving the second gap. Therefore our scheme can also be viewed as an approach that achieved the MMQA problem by jointly exploring human and computer. The proposal of a novel scheme which will enrich community-contributed textual answers in cQA with appropriate media data.

KEYWORDS: Question answering, cQA, medium selection, reranking.

INTRODUCTION: Compared to keyword-based search systems it really eases the communication between humans and computer by naturally stating users’ intention in plain sentences. It also shuns the painstaking browsing of a vast quantity of information contents returned by search engines for the correct answers. However fully automated QA still faces challenges that are not easy to undertake such as the deep understanding of compound questions and the complicated syntactic, semantic and contextual processing to generate answers. It is found that automated approach cannot attain results that are as good as those generated by human intelligence. Along with the propagation and development of underlying communication technologies community QA (cQA) has appeared as an enormously popular alternative to acquire information online owing to the following facts. First in sequence seekers are able to post their specific questions on any topic and obtain answers provided by other participants. By leveraging community efforts they are capable to get better answers than simply using search engines.

RELATED WORK: The research efforts have been put on multimedia Q which aspires to answer questions using multimedia data. An early system named VideoQA expands the text-based QA technology to support factoid QA by leveraging the visual contents of news video as well as the text transcripts. Following this work several video QA systems were proposed and most of them depend on the use of text transcript derived from video OCR-Optical Character Recognition and ASR-Automatic Speech Recognition outputs. Li et al. obtained a solution on “how-to” QA by leveraging community-contributed texts and videos. Kacmarcik et al. discovered a non-text input mode for QA that depends on specially interpreted virtual photographs. An image-based QA approach was introduced which mainly focuses on finding information about physical objects. Chua et al. proposed a generalized approach to extend text-based QA to multimedia QA for a range of factoid definition and “how-to” questions. Their system was designed to discover multimedia answers from web-scale media resources such as Flicker and YouTube.

EXISTING SYSTEM: Community question answering (cQA) services have increased popularity over the past years. It not only permits community members to post and answer questions but also facilitates general users to seek information from all-inclusive set of well-answered questions.

DISADVANTAGES:
Existing cQA forums usually provide only textual answers which are not informative enough for many questions.

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

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

SYSTEM ARCHITECTURE:

Given a QA pair it calculate whether the textual answer should be enriched with media information and which kind of media data should be added. Especially we will classify it into one of the four classes’ text, text+image, text+video and text+image+video. It means that the method will automatically collect images, videos or the combination of images and videos to improve the original textual answers.

QUERY GENERATION FOR MULTIMEDIA SEARCH:
In order to gather multimedia data we need to generate informative queries. Given a QA pair this constituent takes out 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.

MULTIMEDIA DATA SELECTION AND PRESENTATION:
Based on the produced queries we perpendicularly collect image and video data with multimedia search engines. We then execute reranking and duplicate removal to get hold of a set of precise and representative images or videos to augment the textual answers.

RERANKING:
If a query is person-related we carry out face detection for each image and video key-frame. If an image or a key-frame does not enclose faces it will be not considered in reranking. After reranking visually similar images or videos may be ranked jointly. Thus we perform a replacement removal step to avoid information redundancy. We make sure the ranking list from top to bottom. If an image or video is close to a sample that appears above it we remove it.

EXPERIMENTAL RESULTS:
The average presentation assessment of the approach and the conventional method would use only global features for the 25 person-related queries. Here we demonstrate the performance with different values of the parameter. We can see that the approach constantly outperforms the method that uses global features. This reveals that in image or video reranking it is more sensible to use facial features for person-related queries. We then randomly select 100 queries from image and video class respectively.

CONCLUSION:
Endeavouring 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 the method first calculates which type of medium is suitable for enriching the original textual answer. Following that it repeatedly generates a query based on the QA knowledge and then performs multimedia search with the query. Finally query-adaptive reranking and duplicate removal is used.
removal are performed to get hold of 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. The approach is built based on the community contributed answers and it can thus contract with more general questions and attain improved presentation.

REFERENCES:

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