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New Big Challenge in Multimedia Retrieval

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***Abstract*—Multimedia information retrieval system is responsible for retrieving semantic information about image, audio, video or text form data sources. This job of extracting such information is becoming challenging problem because of growth in media. There is high demand of fast multimedia retrieval systems with minimum utility gap. Although potential MIR systems are been developed but still there is lot more to do. This paper firstly highlights the approaches used for multimedia retrieval. After that paper highlights the biggest problem of multimedia retrieval that is Deep web similarity or distance functions to find the desired result.**

Keywords – Multimedia, Information retrieval, image, Video.

I. INTRODUCTION

The importance of Multimedia Information Retrieval system has grown rapidly with the growth of media items. Many potential MIR systems has been developed which can work rapidly with this growing media. The diversity and size of media is also creating challenges for MIR. The main aim of MIR systems is to match the multimedia content and other information's with user's need and brings the best matched media. For this content based, context based and concept based retrieval have been performed. Still sometimes there are utility gaps between the expected data and what was delivered. This gap may come due to i.) Poorly generation of query by user. ii.) Wrong content description iii.) Failure of MIR system to reach every media data. To overcome these problems, there is a need to develop an algorithm that can search for all the items stored on internet through direct uploads , social networking sites or through any other media platform.

II. OVERVIEW OF MULTIMEDIA INFORMATION RETRIEVAL

A. Working of MIR

In MIR applications only two approaches are analyzed to be the best for information retrieval .These two approaches are: i.) Textual ii.) Query by example. Before starting any thing Multimedia stored in database is analyzed to extract the features .To detect and recognize the contents, semantic labels are also extracted. Then all the information that are collected is modeled indexed and summarized.

When the user likes to access some content then a query is submitted that can be generated using textual approach, search with voice or by query by example. For searching the related content search engine uses the indexed structures or

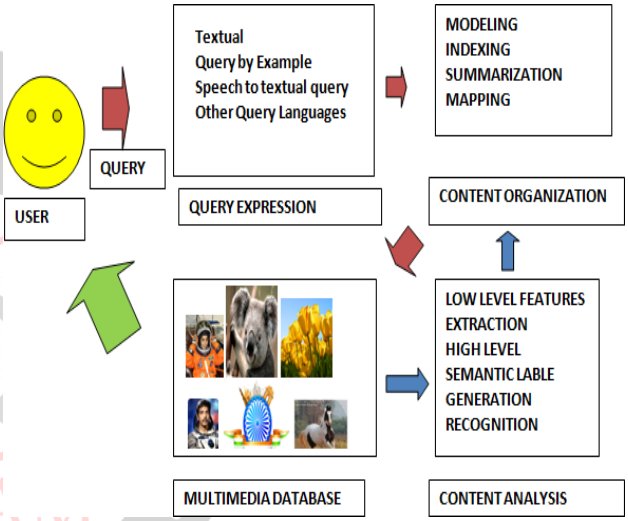

Fig. 1.Overview of MIR working.

B. Textual Approach for expressing queries

Textual approach is considered one of the easiest approaches for data retrieval but in actual it is not so easy.

As, some media items are described in wrong way. People share their love, memories on social sites .If a images of sun rise has description of some motivational thought than that image will not retrieved with sun rise query.

Sometimes the way we write queries is also not proper that lets to incomplete or improper retrieval . So, to overcome this problem fuzzy logic is added with query to retrieve relevant data.

C. Query By Example

Query by example is a approach where users provide a sample for the query. That sample is used for querying the media items. There are many applications that are using this approach for finding items like we have Google search that allow us to search for a song by just clicking and giving a sample on musical note. In the same way we also have different online stores like Amazon that allow us to search items by clicking on images present on the application. QBE also have challenges as finding a example for every query is not so easy.

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III. RETRIEVAL CHALLENGES

With every passing day, millions of data is been uploaded to internet through different platforms. There are Online Social Networking sites which also get uploaded data. These OSN service providers or search engines mostly show highly viewed and trending media files than less viewed once. This raises questions:-

Are users able to search the media item they are looking for? Are search engines showing any media items that the user has queried for?

We can say retrieval system should have soundness and completeness. Expecting complete soundness for a system is difficult a some irrelevant media is always retrieved. Completeness is retrieving all relevant multimedia items for which user has queried. There are many media files on the internet that are not been retrieved due to some or other reason. These media files remain in deep web.

We have many evaluation system to check the performance of MRS systems.

A. Partial Evaluation of MIR

This is the traditional evaluation system; in this the user will provide a query q to the system and will get n results form system. The evaluation of system is based on n(r) relevant results out of n(q) correct results. This type of retrieval system ignores the user's capability of building a good query or providing a good sample.

B. Alternate Evaluation of MIR

Partial Evaluation system does not consider the capacity of MIR to retrieve every relevant multimedia item for a correct query. So, in this evaluation we will evaluate on the bases of complete retrieval of relevant multimedia time for a correct query.

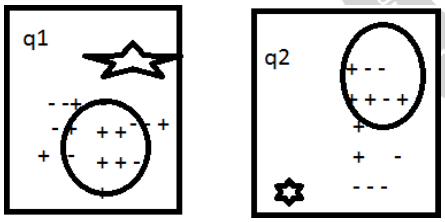

Fig. 2. Showing the case of media that is never retrieved

Let in fig 2. Q1 and Q2 be two queries which retrieve some media items shown in circles and + sign show relevant media item whereas – shows irrelevant items. * sign shows that data are relevant but never retrieved due to some reason. So, these items remain in deep web.

This raises a challenge of retrieving every media . That means there is need for a query that can retrieve every relevant multimedia item.

IV. CONCLUSION

MIR is growing as data is growing day by day on internet. In this paper we used two mostly used approaches for media retrieval that are textual query and query by example.

Then we evaluated the Mir systems and encountered a need for a query that can retrieve every relevant multimedia item. So, this paper shows a challenge for development of a algorithm that can retrieve every relevant item even if it is in deep web.

V. REFERENCES

[1] Han Guo ; ChengZe Ma ; Gang Liu ; XiaoGang Dong ,"The research about a content-based multimedia retrieval system", 2010 International Conference on Computer, Mechatronics, Control and Electronic Engineering.

[2] Ramazan S. Aygun,Wanda Benesova,"Multimedia Retrieval that Works",2018 IEEE Conference on Multimedia Information Processing and Retrieval .

[3] Yihun Alemu,Jong-bin Koh,Muhammed Ikram,Dong-Kyoo Kim ,"Image Retrieval in Multimedia Databases: A Survey", 2009 Fifth International Conference on Intelligent Information Hiding and Multimedia Signal Processing .

[4] Jain and R. S. Aygün, "Spatio-temporal querying of video content using SQL for quantizable video databases," Journal of Multimedia, vol. 4, no. 4, pp. 215–227, 2009.

[5] V. Jain and R. Aygun, "SMART: A grammar - based semantic video modeling and representation," in IEEE SoutheastCon 2008, Apr. 2008,

 DOI : 10.35291/2454-9150.2019.0404 © 2019, IJREAM All Rights Reserved.