RESEARCH ARTICLE OPEN ACCESS

Web Image Re-Ranking Using Query Semantic Signature and Duplicate Detection

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ABSTRACT

TA query specific similarity of images is learned various examples and these are used to rank the images. The user can search images online and offline. User can search the images on Google and Bing search engine. User can search the images based on attributes of images and meta data of the image so as to filter the images. System adding information to image search is important. The interaction should be simple. This paper has an internet search approach. User give the query image as input so as to pool images related to input given by the user. The retrieved images are text based and are get reranked by the user based on their visual and textual similarities. This paper help user to find the images as per the ranking and visual appearance of the image it also re rank the image on meta data of the image.

In this paper, we propose a novel image re-ranking framework, which automatically offline learns different visual semantic spaces for different query keywords through keyword expansions. The visual features of images are projected into their related visual semantic spaces to get semantic signatures. At the online stage, images are re-ranked by comparing their semantic signatures obtained from the visual semantic space specified by the query keyword. The new approach significantly improves both the accuracy and efficiency of image re-ranking. The original visual features of thousands of dimensions can be projected to the semantic signatures as short as 25 dimensions. Experimental results show that 20%−35% relative improvement has been achieved one re-ranking relative improvement has been achieved on re-ranking precisions compared with the state of the-artmethods.

Keywords:- Image, Query Image, Reranking, Hypergraph

I. INTRODUCTION

Lots of search engine uses only keywords as a input to search the image. User just give the keyword as an input to find the image. As per the input from the user the search engine returns lots of images related to text and its surroundings. But the text based image search is having This is because the keyword provided by the user is may be short. The keywords provided by users tend to be short. For example, the query length of the top 1, 0000 queries of Picture search is 1.468.

Web-scale image search engines mostly use keywords as queries and rely on surrounding text to search images. It is well known that they suffer from the ambiguity of query keywords. For example, using "apple" as query, the retrieved images belong to different categories, such as "red apple", "apple logo", and "apple laptop". Online image reranking has been shown to be an effective way to improve the image search results [5, 4, 9]. Major internet image Visual features Offline Part Query: apple Online Part Text-based Search Result Image M … Image 1 Keyword-Image Index File Keyword apple … … … Image Image 1 Image 2 … … Image M Re-ranking on Visual Features ... Query Image ... (stored) (stored) 1f Kf … … Figure 1. The conventional image re-ranking framework. search engines have since adopted the re-ranking strategy [5]. Its diagram is shown in Figure 1. Given a query keyword input by a user, according to a stored word-image index file, a pool of images relevant to the query keyword are retrieved by the search engine. By asking a user to select a query image, which reflects the user's search intention, from the pool, the remaining images in the pool are re-ranked based on their visual similarities with the query image. The visual features of images are pre-computed of- fline and stored by the search engine. The main online computational cost of image re-ranking is on comparing visual features. In order to achieve high efficiency, the visual feature vectors need to be short and their matching needs to be fast. Another major challenge is that the similarities of low level visual features may not well correlate with images' high-level semantic meanings which interpret users' search intention. To narrow down this semantic gap, for offline image recognition and retrieval, there have been a number of studies to map visual features to a set of predefined concepts or attributes as semantic signature [11, 7, 15]. However, these approaches are only applicable to closed image sets of relatively relatively small sizes. They are not suitable for online web- based image re-ranking. According to our empirical study, images retrieved by 120 query keywords alone include more than 1500 concepts. Therefore, it is difficult and inefficient to design a huge concept dictionary to characterize highly diverse web images.

Effective use of IT in libra ries helps in performing their operations and services most efficiently. Libraries intending to use IT have to plan system atically well in advance for successful implementation to derive maximu m benefits and minimize problems.

II. PROPOSED ALGORITHM

This paper uses a clustering method which form the cluster of similar features images in one cluster.This clustering is form in training phase.Clustering means partitioning the image features into set of features pattern.K means can used for clustering.It form the cluster for fixed number of the features.If user give the input as Computer programming language ,the system will look to the slave words in the profile of particular user ling swing, AWT, Computer Today processor become very powerful and memories are becoming very strong and because of that deployment of image database become reliable.Image database are useful for art work,satellite,medical field and it is useful for all the user of various professional field like geography,medicine,architecture,advertising.

So it is very important to access the images from such large database. Content-based image retrieval (CBIR), uses the content of the image as an object which is use as visual effect to retrieve the query. Content-based it analyses the actual content of the images and based on that it compared the other images and give the result to the user. The content may be image colors,shapes,texture or any other which will represent the image.With the help of the contect as well as the meta data user can retrives the actual images.Such kind of meta data is generated by the user to identify the image. Meta tags can be used as a additional image input with other features of the image. Two existing technique is used to compare the image histogram.In this paper the application accepts the image as a query and it extracts the features and compare the extracted features with existing image features which are stored in the database.As per the similarity measures best matched query images are retrieved from the database. Two existing technique is used to compare the image histogram. In this paper the application accepts the text as a query and it extracts the features and compare the extracted features with existing image features which are stored in the database. As per the similarity measures best matched query images are retrieved from the database.

Algorithm: Attirbute Assisted Hypergraph Learning
Initialization :

Set W as a diagonal matrix with initial values. Construct the hypergraph Laplacian l and compute the matrices D1,D2 and H accordingly Compute the optimal f based on the equation 17,which is

F=(1-a)(I-a)-1 y

Step 3: weight Update.

Update the weights wi with the iterative gradient descent method introduced.
After obtaining W,update the matrix a accordingly.
Let t=t+1.If tis greater than T,quit iteration and output the result.

III. MATHIMATICAL MODULE

I= I1, I2, I3, I4

Where,

I1=Text

I2=Image

I3=attributes

I4=meta data

Intermediate Output Set

E= E1, E2
Where,

E1=Ranking

E2=Relevant Image
Final Output Set

D= D1, D2

Where,
D1=Reranking of Image

D2=filter images

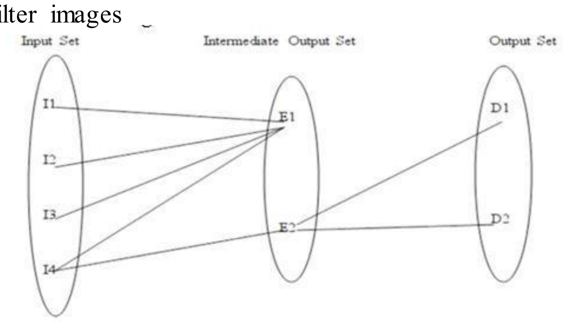

Fig 1. Venn Diagram

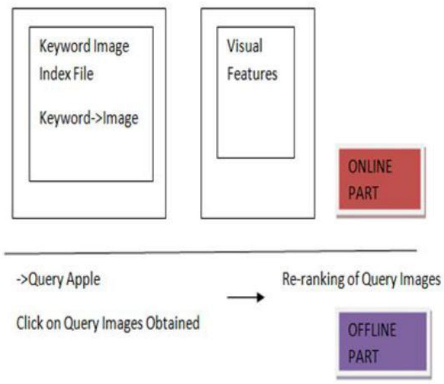

Fig 2. Flow Of The Project

TABLE 1
Statistical Images of Dataset

Category	Number of Queries	Examples
Cartoon	92	Micky Mouse,Ben 10
Animal	100	Lion,Dog,Bat
Event	78	Sporrts,Live shows,Campus
People	68	Girls,snoman Baby
Person	40	Tom Hanks,Will Smith

TABLE 2
Performance Comparison with Hypergraph Reranking

MNDCG	20	40	60	80
Text Base-line	0.45	0.42	0.42	0.40
Hypergraph	0.53	0.53	0.51	0.50
Hypergraph with I1 regular-izer	0.53	0.51	0.49	0.48
Hypergraph with I2 regular-izer	0.55	0.54	0.53	0.52

Fig 3. Several Images with Different retrieval

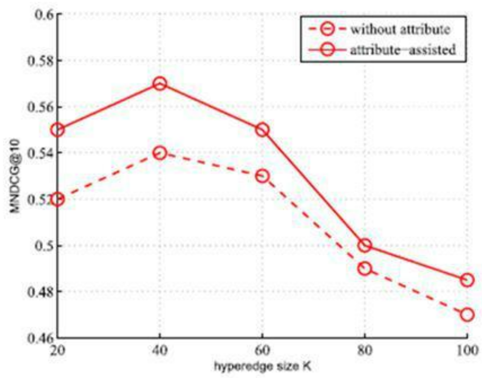

Fig 4. Several Images with Different retrieval

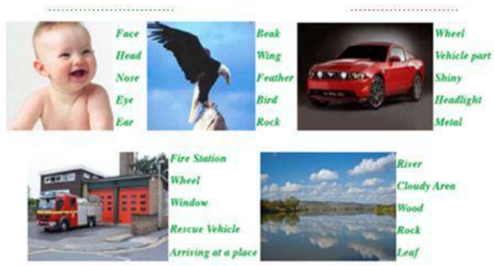

Fig 5. Several Images with Different retrieval

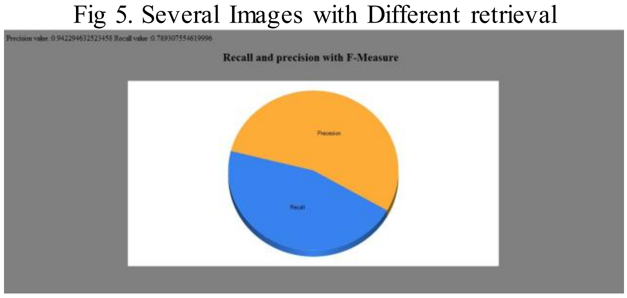

Fig 6. Precision & Recall

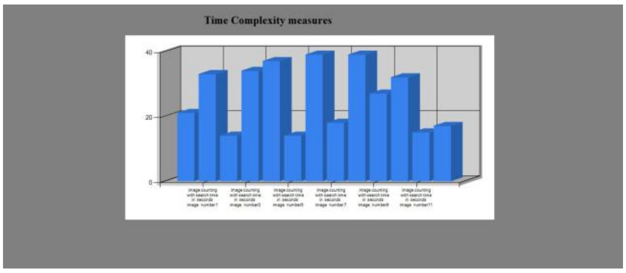

Fig 7 : Time Complexity

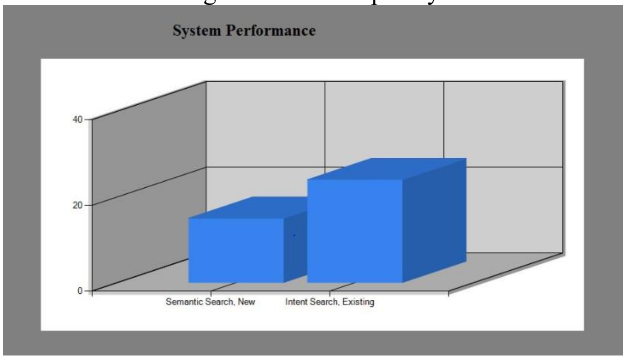

Fig 8:System Performance

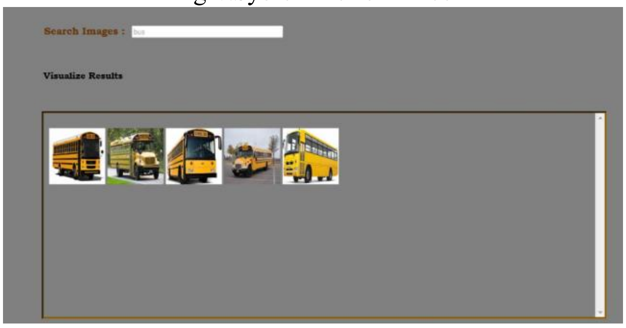

Fig 9: Visualization

IV. CONCLUSION AND FUTURE WORK

Image reranking helps the user to find the accu-rate images.It also provides highest images to cover the maximum output.With the text input with the meta will provide the proper input to the system so that image result accuracy will be more. The rise in the sizes of image databases has done development of image re-trieval system and that will be accurately and efficiently. Initially the development is based in colour coherence vector and texture feature but after that development of image retrieval has been started based on CBIR. So image re-ranking is the important aspect for accurate image retrieval from large image database.

ACKNOWLEDGMENTS

We would like to take this opportunity to ex-press my sincere gratitude to my Project Guide Prof. Basavraj Chunchure (Assistant Professor, Computer Engineering Department, SPCOE) for his encouragement, guidance, and insight throughout the research and in the prepara-tion of this dissertation. He truly exemplifies the merit of technical excellence and academic wisdom.

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