

Time Based Re-ranking for Web Image Search

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Abstract- Search re-ranking is considered as a best way to improve retrieval precision. This paper addresses two common problems in search. The top-ranked results for such queries may not contain relevant image to the user's search result, and fresh and relevant pages may not get high ranks because when we retrieve and rank, images occur mostly based on the visit count of the link. We introduce a new ranking method named Meta rankers, which is based on Time, Download and also View. We invoked ranking based on time count of each visit of the image. Image redundancy is still a problem area concerned. We proposed Image check algorithm, which is used to eliminate the redundancy of an image. In this image check algorithm, it compares the color value of every single expected and actual pixel and avoids the repetition of the same image. Therefore, it provide better and most engaging and diverse search results.

Index Terms- image check algorithm, image re-ranking, non redundant image, time based re-ranking.

I. INTRODUCTION

The sheer amount of Web pages and the exponential growth of the Web suggest that users are becoming more and more dependent on the search engines' ranking methods to discover information relevant to their needs. Typically, users expect to find such information in the top-ranked results, and more often than not they only look at the document snippets in the first few result pages and then they give up or reformulate the query. This can introduce a significant bias to their information finding process and calls for ranking methods that take into account not only the overall page quality and relevance to the query, but also the match with the users' real search intent when they formulate the query. Generally, most photo images stored on the Web have lots of tags added with user's subjective judgments not by the importance of them. So, in tagged Web image retrieval, they have become the cause of precision rate decrease on simple matching of tags to a given query. A common practice to improve search performance is to re-rank the visual documents returned from a search engine using a larger and richer set of features. The ultimate goal is to seek consensus from various features for reordering the documents and boosting the retrieval precision. In previous works for image search Re-ranking suffers from the unreliability of the assumptions under which the initial

text-based image search result is employed in the Re-ranking Process. The existing web image search engines, including Bing, Google, and Yahoo!, retrieve and rank images mostly based on the visit count of the images. Image redundancy is still a problem area concerned. Current ranking system provides doesn't exact search result because rank is based on visit count alone once person open the image if it even irrelevant visit count get incremented.

In this paper we propose a novel algorithm named ImageCheck algorithm. ImageCheck compares the color value of every single expected and actual pixel and also proposes a new ranking method named Meta ranker that take advantages on time download and also view. We invoked ranking based on time count of visit of the image, we employ a number of images from the initial search result as the prototypes that serve to visually represent the query and that are subsequently used to construct Meta ranker. By applying Meta ranker to an image from the initial result, re-ranking scores are generated, which are then aggregated using a linear model to produce the final relevance score and the new rank position for an image in the re-ranked search result.

II. RELATED WORK

In [17], Mayuri D. Joshi proposed a ranking method named active re-rankers gives a brief overview of various image retrieval and re-ranking techniques. Starting with the introduction to existing system the paper proceeds through the core architecture of image harvesting and retrieval system to the different Re-ranking techniques. Rasiwasia et al. [3] mapped visual features to a universal concept dictionary for image retrieval. Attributes [4] with semantic meanings were used for object detection [5], [6], [7], object recognition [8], [10], face recognition [9], [11], [12], image search [10], [13], [14], action recognition [15], and 3D object retrieval [16]. Lampert et al. [5] predefined a set of attributes on an animal database and detected target objects based on a combination of human-specified attributes instead of training images. Sharmanska et al. [6] augmented this representation with additional dimensions and allowed a smooth transition between zero-shot learning, unsupervised training and supervised training. Parikh and Grauman [9] proposed relative attributes to indicate the strength

of an attribute in an image with respect to other images. Parkash and Parikh [10] used attributes to guide active learning. In order to detect objects of many categories or even unseen categories, instead of building a new detector for each category, Farhadi et al. [7] learned part and attribute detectors which were shared across categories and modelled the correlation

In [1], Ting Yao proposed Multi-modal graph based and circular re-ranking techniques proposed in recent years capture more than one feature of image for more accurate re-ranking results. These methods do not always compete but can complement each other.

In [18], Liu *et al.* proposed a re-ranking paradigm by issuing query to multiple online search engines. Based on visual word representation, both salient and concurrent patterns are respectively mined to initialize a graph model for random walk based re-ranking.

Different from self- and crowd-re-ranking, example-based re-ranking relies on a few query examples provided by users for model learning. In [20], classifiers are learnt by treating query examples as positive training samples while randomly picking pseudo-negative samples from the bottom of initial ranked list. The classifiers which capture the visual distribution of positive and negative samples are then exploited for re-ranking. In another work by Liu *et al.* [19], query examples are utilized to identify relevant and irrelevant visual concepts, which are in turn employed to discover the rank relationship between any two documents using mutual information for correcting ranking of document pairs.

In short, while these approaches focus on the mining of recurrent patterns from different means, such as by random walk [21], external knowledge [19], and classifier learning [20], the interaction among modalities is not exploited for re-ranking. Our work in this paper contributes by studying not only mining patterns (or consensus) through random walk, but also how the consensus can be more reliably estimated by exploring modality interaction.

III. PROPOSED SYSTEM

We introduced a novel algorithm named, ImageCheck Algorithm and new ranking method named Meta ranker. This ImageCheck algorithm is used to eliminate the redundancy of an image; it compares the color value of every single expected and actual pixel and image size. The Meta ranker is used to re-rank the web search images based on the total time taken by the image, number of visits count and number of download counts.

A. ImageCheck Algorithm

This ImageCheck algorithm is used to eliminate the redundancy of an image; the working principle of an ImageCheck algorithm is- When the user uploads an image, the image data's like the color value of every single pixel and image size are pre-

processed and stored in a dataset, then images and datasets are stored in a database.

Each time when user tries to upload an image its compares the new image dataset with all dataset in database. If any one of the dataset matches with new image dataset, then the image is not allowed to store in database.

Algorithm: ImageCheck

```
1: upload image (i)
2: [img] ← fetch array (i size, pixel, color)
3: Check images in uploaded files
4: if i=0 then
5:     assign img_id []
6: allow upload and increment i
7: end if
8: While i>=i do
9:     Compare [img]
10:    If new-img_id [] ==img_id [] then
11:        Does not allow upload
12:    Else
13:        allow upload
14:        assign img_id []
15:        increment i
16:    end if
17: end while
18: end
```

In this algorithm, 'i' represent an image [img] represents the dataset. In First step when the user upload an image it fetch the image color value of every single pixel and size and stored in [img]. The Next step, if there is no image is present in the database then the default 'i' value is Zero. Then image is uploaded and assigned its image id []. Next time a new image is uploaded it compares the new image dataset with existing dataset by using image id. If both images are not same then the image is allowed to store in a database, else it will not allow to upload and shows an alert message.

B. The Meta Ranker method

The Meta ranker is used to re-rank the images based on

- Time count
- Visit count
- Download count

When the image is opened it starts to count the total time taken till the image is closed and also count the no of views and downloads of a particular image. The re-ranking is occurred based on total time taken, which image has higher time is displayed top of the search results. If more than an image have same time count then the visit count is considered and re-ranking

is occurred similarly when both the time and visit count same for more than one image then download count is taken and re-ranking done. Hence we get the relevant search results on the top list.

IV. RESULTS AND DISCUSSION

In this session we briefly discuss about to experiment result in fig(1) it shows the time variation of the existing and proposed search results. The red line indicate the proposed time based Re-ranking system Where as the blue line indicate the existing systems Where the search reranking is done by the visit count of an image.

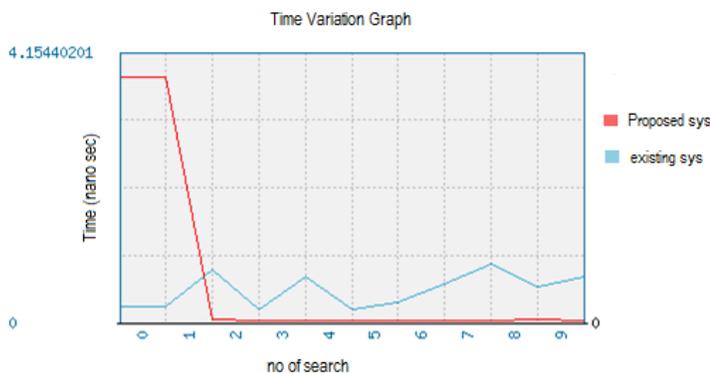


Fig 1: Time variation of the existing and proposed search results.

In Existing visit count based re-ranking system the result retrieval time varies each time the exact result retrieval time got increased Whereas In time based Re-ranking at initial search it took few nano seconds to retrieve the exact results but after re-ranking the standard time is maintained to retrieve the exact search results and also the results occurred within very few seconds.

V. CONCLUSION

Users expect to find necessary information in the top-ranked results. Current ranking system doesn't provides exact search result because rank is based on visit count alone, once person open the image if it even irrelevant visit count get incremented. In proposed model we use time based ranking it is basically how long user views the image will be taken for the ranking and also ranking based on no of visit for each image and download count of each image so that exact search result is retrieved and also eliminate image redundancy problem by ImageCheck algorithm.

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