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Multi-Attribute Tag Based Image Search by Social Re-ranking

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Abstract:- **Social media sharing websites like Flickr allow users to annotate images with free tags, which significantly contribute to the development of the web image re-trivial and organization. Tag-based image search is an important method to find images contributed by social users in such social websites. However, how to make the top ranked result relevant and with diversity is challenging. In this paper, we propose a social re-ranking system for tag-based image retrieval with the consideration of images relevance and diversity. We aim at re-ranking images according to their visual information, semantic information and social clues. The initial results include images contributed by different social users. Usually each user contributes several images. First we sort these images by inter-user re-ranking. Users that have higher contribution to the given query rank higher. Then we sequentially implement intra-user re-ranking on the ranked users image set, and only the most relevant image from each user's image set is selected.**

Keywords: *Database, Application mining, Image databases, Social and behavioral sciences, Economics, Psychology, Information Search and Retrieval Clustering*

I INTRODUCTION

Project idea:

In our paper social image websites such as Flickr allow users to annotate their images with a set of descriptors such as tags. Thus, the tag-based image search can be easily accomplished by using the tags as query terms. However, the weakly relevant tags, noisy tags and duplicated information make the search result unsatisfactory. Most of the literatures regarding the re-ranking of the tag-based image retrieval focus on tag processing, image relevance ranking and diversity enhancement of the retrieval results. The following parts present the existing works related to the above three aspects respectively.

A Tag Processing Strategy:

It has been long acknowledged that tag ranking and refinement play an important role in the re-ranking of tag-based image retrieval, for they lay a firm foundation the development of r e-ranking in tag based image retrieval (TBIR).

B Relevance Ranking Approach

To directly rank the raw photos without undergoing any intermediate tag processing, utilized an optimization framework to automatically rank images based on their relevance to a given tag. Visual consistency between images and semantic information of tags are both considered. Proposed a hyper graph learning approach, which aims to estimate the relevance of images. They investigate the bag-of-words and bag-of-visual words of images, which are extracted from both the visual and textual information of image. Proposed a Support Vector Machine classifier per query to learn relevance scores of its associated photos. Proposed a two-step similarity ranking scheme that aims to preserve both visual and semantic resemblance in the similarity ranking. In order to achieve this, a self-tune manifold ranking solution that focuses on the visual-based similarity ranking and a semantic-oriented similarity re-ranking method are included

C Diversity Enhancement

The relevance based image retrieval approaches can boost the performance; however the diversity performance of searching are often ignored. Many researchers dedicated their extensive efforts to solve this problem. Proposed a hierarchical clustering method to cluster the search results into different semantic clusters by using visual, textual and link analysis. Similarly, in, studied three visually diverse ranking methods to re-rank the image search results based on the visual characteristics of these images. Different from clustering, proposed a re-ranking method to meet users ambiguous needs by analyzing the topic richness.

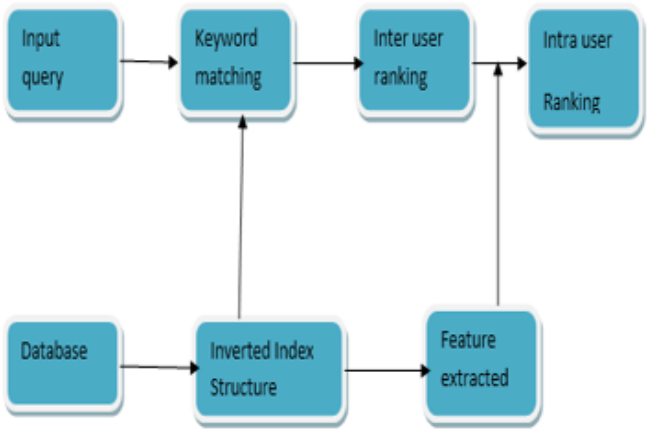


Figure 1: Project Idea

II LITERATURE SURVEY

Most of the work related to re-ranking focus on image relevance ranking, tag processing and diversity enhancement. Agrawal and Chaudhary proposed a relevance tag ranking

algorithm to rank tag automatically based on their relevance with image content. presented a tag relevance fusion method to solve limitations of a single measurement of tag relevance. Liu et al. utilized a unified optimization framework to automatically rank images according to their relevance query tag. It integrates both the visual consistency between images and the semantic correlation between keywords. In Y. GAO Et Al. proposes a tag based image search with visual text joint hyper graph learning. They investigate the bag-of-words and bag-of-visual words representation of images and accomplish the relevance estimation with this hyper graph learning approach. Also each visual word or textual generates a hyper edge in the constructed hyper graph. As explained by the L. Chen et al. in the image retrieval through improved relevance ranking, recent years have witnessed the success of search can be easily established by using the descriptors as index terms. Existing methods frequently return low quality results that are irrelevant. In this project we propose a relevance quality strategy considering both image quality and image relevance.

First a relevance based ranking approach is used to automatically rank images as indicated by their significance to the query tag, which figures the relevance score by using the visual similarity of images and semantic consistency of tags. Then, the quality scores are added to the candidate ranking list to achieve the relevance quality based positioning. Relevance based retrieval process improves the relevance performances. But the diversity performance of searching is often ignored. Tag queries are commonly short size and ambiguous .Diversifying search result is a solution in the absence of further learning about the user's goal. However not all queries are consistently ambiguous and hence various diversification techniques might be recommended. A ranking procedure called adaptive diverse relevance ranking [6] which predicts an effective trade-off between relevance score and diversity score based on the query.

III PROPOSED SYSTEM

The layout of the model is given below. It consists of two main parts that are online and offline as shown in Fig.2.The offline part has two sections.1) Inverted index structure creation for the image dataset.2) Feature extraction. The online section includes 3 steps.1) keyword matching.2) Inter-user re-ranking.3) intra-user re-ranking.

A. Offline

The inverted index structure for the collected image set is constructed to increase retrieval speed that is to improve the searching process. In feature extraction, we extract views, visual and semantic feature of images. View feature refers to likes of an image. This click count helps to improve the relevance performance of image search results. Semantic feature indicate the occurrence word set in image tagging.

Inverted index algorithm is given below.

1) Form the main list L= {((tags), (image), (user1)),((tags),(image),(user2))……}

2) Extract tags from list L

3) Create a new record for tags

4) Avoid duplication of tags

5) Extract first item and find its corresponding image and use

6) Create index list.

B. Online

First step in online part is keyword matching process. An input query for example a meaningful keyword like bird is given. . Then with the help of keyword matching system will return matched data. The data retrieved is gone through image re-ranking. Inter user ranking rank the images based on given query. Users that have higher uploaded images to given query rank higher. Then we successively apply intra-user re-ranking on the ranked user's image set. Then most significant image from every user's image collection is selected.

IV RESULT

In order to demonstrate the effectiveness of the social re-ranking (denoted by SR) approach, we conduct experiments on our crawled Flickr images by utilizing the following 20 tags as queries: airplane, beach, Beijing, bird, blue, buildings, Christmas, cityscape, forest, reflection, garden, girl, honeybee, insect, lotus, ocean orange, sea, sky, and zebra.

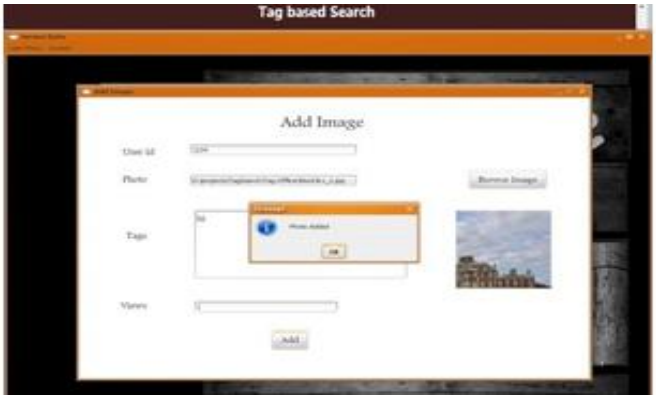
OFFLINE:

USER LOGIN

USER REGISTRATION

TAG BASED IMAGE SEARCH

ADD IMAGE TO DATASET



VIEW IMAGE ADD

ONLINE:

ONLINE REGISTRATION

ONLINE LOGIN

TAG BASED IMAGE SEARCH

ONLINE IMAGES SEARCH RESULT

V CONCLUSION AND FUTURE SCOPE

In this Project, we propose a social re-ranking method for tag-based image re- trivial. In this social re-ranking method, inter-user re-ranking and intra-user re- ranking are carried out to obtain the retrieved results. In order to enhance the diversity performance, user information is firstly introduced into our proposed approach and obtains satisfactory results. Besides, views of social image is also firstly fused into a traditional regularization framework to enhance the relevance performance of retrieved results. However, in the inter-user ranking process only user's contribution is considered and the similarity among users is ignored. In addition to this, many information in Flickr dataset are still ignored, such as title information, time stamp and so on. For future work, we will investigate the similarity among user groups in Flickr dataset. Therefore, we can fuse these relationships to enhance the diversity performance of

image ranking

However, we consider the community similarity in the inter community ranking process while the topic similarity of representative images is ignored. In addition, much information in social media image set, such as Flickr dataset are still unutilized, such as title, time stamp and so on. For future work, we will investigate the similarity among representative images. Besides, we may fuse these relationships to enhance the diversity performance of image ranking system.

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