A Survey on Social Image Re-ranking Scheme Using Image Annotation

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ABSTRACT: Image annotation has lots of research premium and multi-label learning is a powerful method for Image annotation. Step by step instructions to correlation among the hidden connection among label is an essential step for multi-label learning. Most existing multi-label learning techniques misuse the label relationship just in the output label space, leaving the relationship among label and features of images immaculate. Social media sharing websites like Flickr allow users to define images with free tags, which significantly contribute to the development of the web image retrieval and organization. Tag based image search is an important technique to find images contributed by social users in such social websites. However, how to make the top ranked result suitable and with diversity is challenging. In this work, we propose a social re-ranking system for tag-based image retrieval with the consideration of image's relevance and variance. We aim at re-ranking images according to their visual information, semantic information and social hints. Usually each user contributes several images. First we sort these images by user ranking based on view count of image. Users that have higher contribution to the given query rank higher. Then we sequentially implement user re-ranking on the ranked user's image set, and only the most related image from each user's image set is selected and duplicate images will be removed.

KEYWORDS: Image Annotation, Image ranking, Image Re-ranking, Social Clues, Social Media,Tag-based Image Retrieval, Image search, Feature Extraction

I. INTRODUCTION

1.1 Background

Image annotation is a promising research topic and is still an important open problem in multimediaand computer vision fields, which has attracted much researcher's interest. The objectiveof image annotation is to automatically annotate an image with appropriate keywords, i.e.,labels, which reflect visual content in the image. Automatic image annotation is a key steptowards semantic keyword based image retrieval, which is considered to be a convenient andeasy way for retrieving images on the web. It plays an important role in bridging the semanticgap between low-level features used to represent images and high-level semantic labels usedto describe image content. With the increasing number of images in social network and on thesharing websites (Face book, Flicker, and YouTube, etc.), there is a huge demand for automaticimage annotation.

Thus, a fundamental problem in the re-ranking of the tag-based social image retrieval ishow to reliably solve these problems. As far as the tag mismatch problem is concerned, tagrefinement, tag relevance ranking and image relevance ranking approach have been dedicatedto overcome these problems. As for the query ambiguity problem, an effective approach is toprovide diverse retrieval results that cover multiple topics underlying a query. Currently, imageclustering and duplicate removal are the major approaches in settling the diversity problem.However, the essence of social images is ignored. The social images uploaded and tagged byusers are user-oriented. These user-oriented images which share the same user and tagged withsame query are always taken in a fixed time interval at a specific spot. It is well-known

that,images taken in the same time interval and fixed spot are fairly similar. To diversify the topranked search results, its better to re-rank the results by removing the duplicate images fromthe same user.

1.2 Motivation

Social image websites such as Flickr allow users to search their images with a set of descriptors such as tags. System systematically fuses the visual information, social user's information and image view times to boost the diversity performance of the search result. This proposes the user -ranking method and user re-ranking method to achieve a good trade-off between the diversity and relevance performance. These methods not only reserve the relevant images, but also effectively eliminate the similar images from the user in the ranked results.

II. LITERATURE SURVEY

Xueming Qian, Xian-Sheng Hua, Yuan Yan Tang, Tao Mei, "Social Image Tagging With Diverse Semantics". IEEE TRANSACTIONS ON CYBERNETICS.
Points: This work is to improve textual-based image retrieval because the top-ranked tags are highly relevant to the image and have large semantic compensation.
Deepshikha Mishra, Uday Prtap Singh, Vineet Richhariya, "Tag Relevance for Social Image Retrieval in Accordance with Neighbor Voting Algorithm". IJCSNS International Journal of Computer Science and Network Security, VOL.14 No.7, July 2014.
Points: 1. the proposed algorithm does not require any model training for any visual concept; it is efficient in handling large scale image data sets.2. The proposed algorithm predicts more relevant tags even when the visual search is unsatisfactory.
Meng Wang, Kuiyuan Yang, Xian-Sheng Hua, Hong-Jiang Zhang, "Towards a Relevant and Diverse Search of Social Images". IEEE TRANSACTIONS ON MULTIMEDIA, VOL. 12, NO. 8, DECEMBER 2010.
Points: 1. this works shown that the diversity of search results can be enhanced while maintaining a comparable level of relevance.2. Effectiveness.
Xueming Qian, Dan Lu, Xiaoxiao Liu, "Tag Based Image Search by Social Re-ranking", IEEE transactions on multimedia, MM-006206
Points: 1. Proposed method is effective and time-saving.2. This social re-ranking method is effective and efficient.
Jiaming Zhang, Shuhui Wang, Qingming Huang, "Location-Based Parallel Tag Completion for Geo-tagged Social Image Retrieval".
Points:1. the learned tag sub-matrix of each POI reflects the major trend of users' tagging results with respect to different POIs and users.
2. This parallel learning process provides strong support for processing large scale online image database.
3. Achieves better accuracy for automatic image annotation.
4. Enhances the computational efficiency.
Shuhui Jiang, Xueming Qian, Jialie Shen, "Author Topic Model-Based Collaborative Filtering for Personalized POI Recommendations". IEEE TRANSACTIONS ON MULTIMEDIA, VOL. 17, NO. 6, JUNE 2015
Points: In this work, user preference topics, such as cultural, cityscape, or landmark, are extracted from the geo-tag constrained textual description of photos via the author topic model instead of only from the geo-tags (GPS locations).
Xiyu Yang, Xueming Qian, Yao Xue, "Scalable Mobile Image Retrieval by Exploring Contextual Saliency". IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 24, NO. 6, JUNE 2015
Points: This approach requires less bandwidth and has better retrieval performance.
Jun Yu, Dacheng Tao, Meng Wang, Member, Yong Rui, Fellow, "Learning to Rank Using User Clicks and Visual Features for Image Retrieval". IEEE TRANSACTIONS ON CYBERNETICS, VOL. 45, NO. 4, APRIL 2015.
Points: 1. above proposed model is more robust and accurate ranking model.2. In this model, the noises in click features will be removed by the visual content.

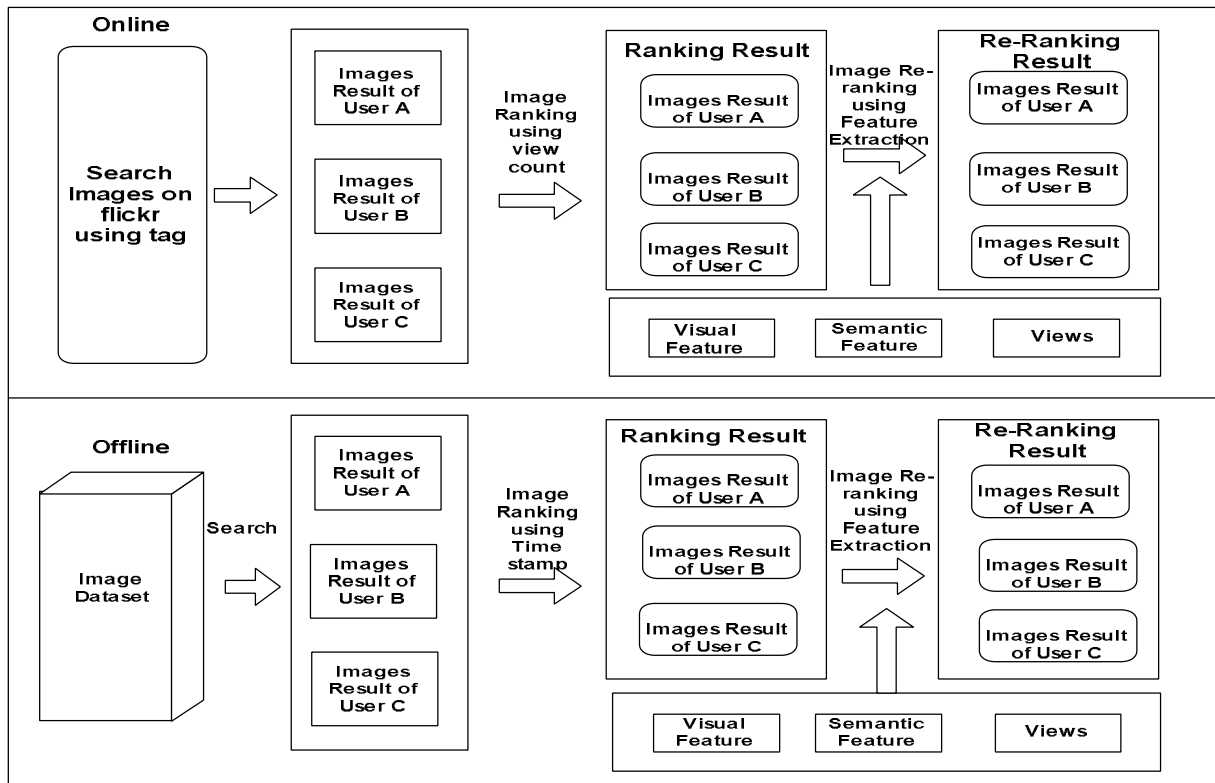## III. PROPOSED APPROACH

Fig.01 System Architecture

System overview-

Proposed system will provide image search top result data. We propose a social re-ranking algorithm which user information is firstly introduced into the traditional ranking method considering the semantics, social clues and visual information of images. This paper proposes a new image search system that also extends the user profile with user's offline dataset and user's contribution.

In proposed social re-ranking algorithm, firstly rank the images by view count and then to re-ranking that the url of images in specific folder and achieve the feature extraction goal and removing duplication by one by one feature matching.

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In offline part, the searching of image using name and also tags.

Advantages-
1.   Implement a searching based system.
2.   Reduce the sending large no. of http request to server.
3.   Getting user expected result.
4.   Remove image duplication

IV. CONCLUSION

In this work, we propose a social re-ranking approach for tag-based (image annotations) image retrieval. In this social re-ranking technique, ranking and re-ranking are carried out to obtain the retrieved results. Firstly rank the images by view count using flickr API on online and by timestamp on offline dataset.Also, re-rank using image feature extractions to remove the duplicate images to achieve uniqueness.In addition to this, much information in Flickr dataset are still ignored, such as title information, time stamp, so will work on this for ranking.

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