**Tag Based Image Search by Social Re-ranking**

**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 retrieval 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 image’s 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 user’s image set, and only the most relevant image from each user’s image set is selected. These selected images compose the final retrieved results. We build an inverted index structure for the social image dataset to accelerate the searching process. Experimental results on Flickr dataset show that our social re-ranking method is effective and efficient.

**EXISTING SYSTEM:**

* Lee and Neve proposed to learn the relevance of tags by visually weighted neighbor voting, a variant of the popular baseline neighbor voting algorithm.
* Agrawal and Chaudhary proposed a relevance tag ranking algorithm, which can automatically rank tags according to their relevance with the image content. A modified probabilistic relevance estimation method is proposed by taking the size factor of objects into account and random walk based refinement is utilized.
* Li et al. presented a tag fusion method for tag relevance estimation to solve the limitations of a single measurement on tag relevance. Besides, early and late fusion schemes for a neighbor voting based tag relevance estimator are conducted.
* Zhu et al. proposed an adaptive teleportation random walk model on the voting graph which is constructed based on the images relationship to estimate the tag relevance.
* Sun et al. proposed a tag clarity score measurement approach to evaluate the correctness of a tag in describing the visual content of its annotated images.

**DISADVANTAGES OF EXISTING SYSTEM:**

* Tag mismatch. Social tagging requires all the users in the social network to label their uploaded images with their own keywords and share with others. Different from ontology based image annotation, there is no predefined ontology or taxonomy in social image tagging. Every user has own habit to tag images. Even for the same image, tags contributed by different users will be of great difference. Thus, the same image can be interpreted in several ways with several different tags according to the background behind the image. Thus, many seemingly irrelevant tags are introduced.
* Query ambiguity. Users cannot precisely describe their request with single words and tag suggestion system always recommend words that are highly correlated to the existing tag set, thus add little information to a users’ contribution. Besides, polysemy and synonyms are the other causes of the query ambiguity.

**PROPOSED SYSTEM:**

* 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. The contributions of this paper can be described as follows:
* We propose a tag-based image search approach with social re-ranking. We systematically fuse the visual information, social user’s information and image view times to boost the diversity performance of the search result.
* We propose the inter-user re-ranking method and intra-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 same user in the ranked results.
* In the intra-user re-ranking process, we fuse the visual, semantic and views information into a regularization framework to learn the relevance score of every image in each user’s image set. To speed up the learning speed, we use the co-occurrence word set of the given query to estimate the semantic relevance matrix.

**ADVANTAGES OF PROPOSED SYSTEM:**

* In order to improve the robustness of the algorithm to obtain the co-occurrence word set with respect to the given query, a new self-adaptive algorithm is introduced in this paper, in which relative frequency of each tag about the given query is required and a self-adaptive parameter is decided by this relative frequency.
* In the intra-user re-ranking process, we take the views into consideration to learn the relevance score of each image. In order to achieve this, a new iterative algorithm to obtain the relevance score is proposed.
* This system is more considerate when compared to existing systems.
* Discussions about weight selection and image features in the regularization framework are complemented. Through this discussion, we find that our performance doesn’t rely on the adjustment of parameters and feature selection. It’s robust and relatively stable. Besides, in order to find an optimal number of representative images which are selected from each user’s image set, many new comparison experiments and comprehensive discussions are added.

**SYSTEM ARCHITECTURE:**



**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Pentium Dual Core.
* Hard Disk : 120 GB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 1GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 7.
* Coding Language : JAVA/J2EE
* Tool : Netbeans 7.2.1
* Database : MYSQL

**REFERENCE:**

Xueming Qian, *Member, IEEE*, Dan Lu, and Xiaoxiao Liu, “Tag Based Image Search by Social Re-ranking”, **IEEE TRANSACTIONS ON MULTIMEDIA, 2016.**