Image Similarity Measurements Using Hmok-Simrank

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Abstract: Images in such social networks are also accompanied by annotations, comments, and other information, thus forming heterogeneous image-rich information networks. The concept of (heterogeneous) image-rich information network and the problem of how to perform information retrieval using a fast algorithm heterogeneous minimum order k-SimRank (HMok-SimRank) to compute link-based similarity in weighted heterogeneous information networks and an algorithm Integrated Weighted Similarity Learning (IWSL) designed for both link-based and content based similarities by considering the network structure and mutually reinforcing link similarity and feature weight learning. A new product search and recommendation system for e-commerce has been implemented based on our algorithm.

Keywords – image similarity, local and global feature learning, maintanence,quality.

I. INTRODUCTION

IMAGE RETRIEVAL

Network devices that originate, route and terminate the data are called network nodes. Nodes can include hosts such as servers and personal computers, as well as networking hardware. Two devices are said to be networked when a device is able to exchange information with another device.Social network one of the network millions of user connected with people .they are sharing the files with user. The physical layout of a network is usually somewhat less important than the topology by which network nodes are connected.

Conducting information retrieval in such large image rich information networks is a very useful but also very challenging task, because there exists a lot of information such as text, image feature, user, group, and most importantly the network structure. A firewall is a network device for controlling network security and access rules. Firewalls are typically configured to reject access requests from unrecognized sources while allowing actions from recognized ones. The vital role firewalls play in network security grows in parallel with the constant increase in cyber attacks.

PRODUCT SEARCH AND RECOMMENDATION SYSTEM

Electronic commerce, commonly known as e-commerce or e Commerce, is a type of industry where the buying and selling of products or services is conducted over electronic systems such as the Internet and other computer networks. Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle, although it may encompass a wider range of technologies such as e-mail, mobile devices, social media, and telephones as well.Electronic commerce is generally considered to be the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of business transactions. This is an effective and efficient way of communicating within an organization and one of the most effective and useful ways of conducting business.

II. PROPOSED ALGORITHM

The image similarity handles

1. Image Upload
2. Relevant data
3. Link based similarity
4. Images annotated by tag
5. Network clustering
6. Accurate image separation
7. Performance evaluation

Many images in such social networks are accompanied by information such as owner,consumer , producer, annotations, and comments.

Most commercial image search engines use textual similarity to return semantically relevant images and then use visual similarity to search for visually relevant images. The goal of image-search engines is to retrieve image results that are relevant to the query and diverse enough to cover variations of visual or semantic concepts. Traditional search engines find relevant images largely by matching the text query with image metadata (i.e., anchor text and surrounding text). Since text information is often limited and can be inaccurate, many top ranked images may be irrelevant to the query.

one of the most popular link-based algorithms for evaluating similarity between nodes in information networks. It computes node similarity based on the idea that "two nodes are similar if they are linked by similar nodes in the network." a simple mechanism to incorporate the advances made in using link and network analysis for Web document search into image search. Although no links explicitly exist in the image search.." Inspirit of PageRank,SimRank computes the similarity between each pair of nodes in an iterative fashion with a theoreticalguarantee of the convergence.

The tags (or groups) of an image are incomplete (0 or very few) and thus cannot fully describe its semantic meaning, the link-based similarity becomes less reliable. Similar images are likely to link to similar groups and tags and define the link-based semantic similarity between images.

CBIR Algorithm is used for separate the accurate image. It consists of a window which is encompassed over the image to order (rank) the pixels in the image area and then replace the central pixel with the determined values. The median filter replaces the value of a pixel by the median of the gray levels in the neighborhood of that pixel,then it provide the accurate image .

First, perform network clustering to partition the whole large network into small connected components as subnetworks ; Second, run the proposed algorithm on each subnetwork and third, when a new image come, update the subnetwork which the new image belongs to.

Advantages are

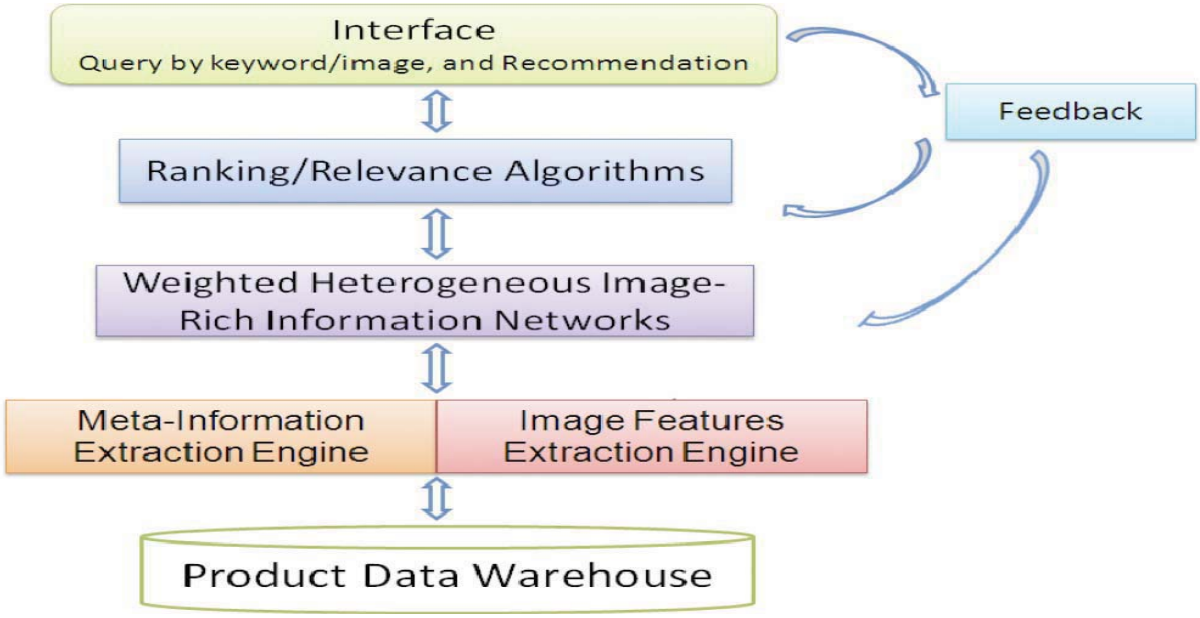
- Time Efficiency
- User can click on an image to find similar images according to the scores also computed by SimLearn
- Good performance of Sim-Learn to find similar images, tags and groups.
- Instead of directly using the feature vector to compute similarity, in recent years have demonstrated, both empirically and theoretically, that a learned metric can significantly improve the performance of classification and clustering.

III. Experiment and Result

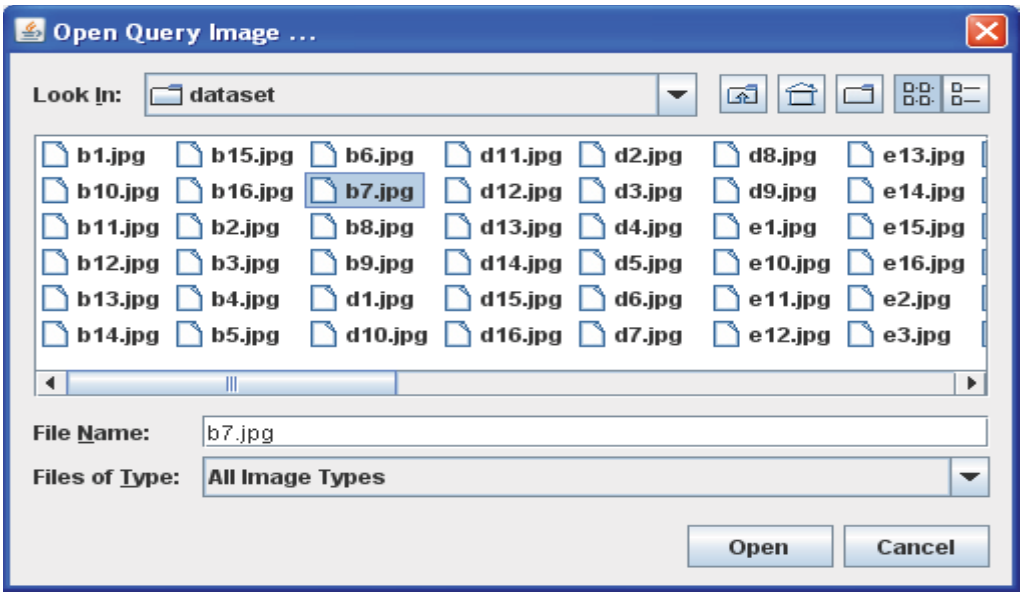
A fast algorithm heterogeneous minimum order k-SimRank (HMok-SimRank) to compute link-based similarity in weighted heterogeneous information network. Propose algorithm IWSL to provide a novel way of integrating both link and content information.

IWSL performs content and link reinforcement style learning with either global or local feature weight learning.A product recommendation system has been implemented for ecommerce to find both visually and semantically relevant products modeled in an image-rich information network.
Mok-SimRank can be extended to work for a weighted heterogeneous information network, which contains multiple types of nodes Integrated learning similarity algorithm IWSL to provide a novel way of integrating both link and content information. IWSL performs content and link reinforcement style learning with either global or local feature weight learning. Based on the proposed algorithm, a new product recommendation system has been implemented for ecommerce to find both visually and semantically relevant products modeled in an image-rich information Network.

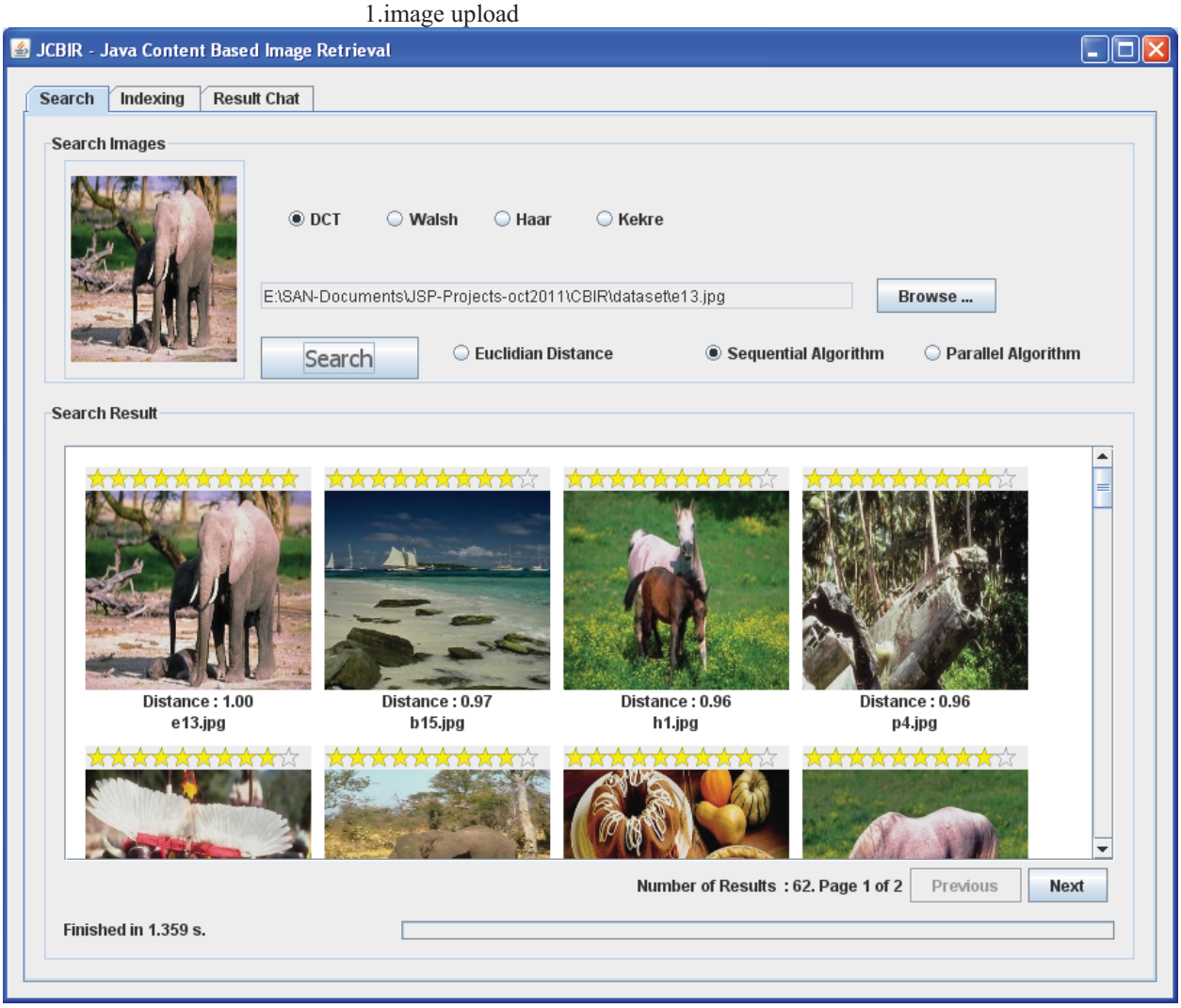
ARCHITECTURE DIAGRAM



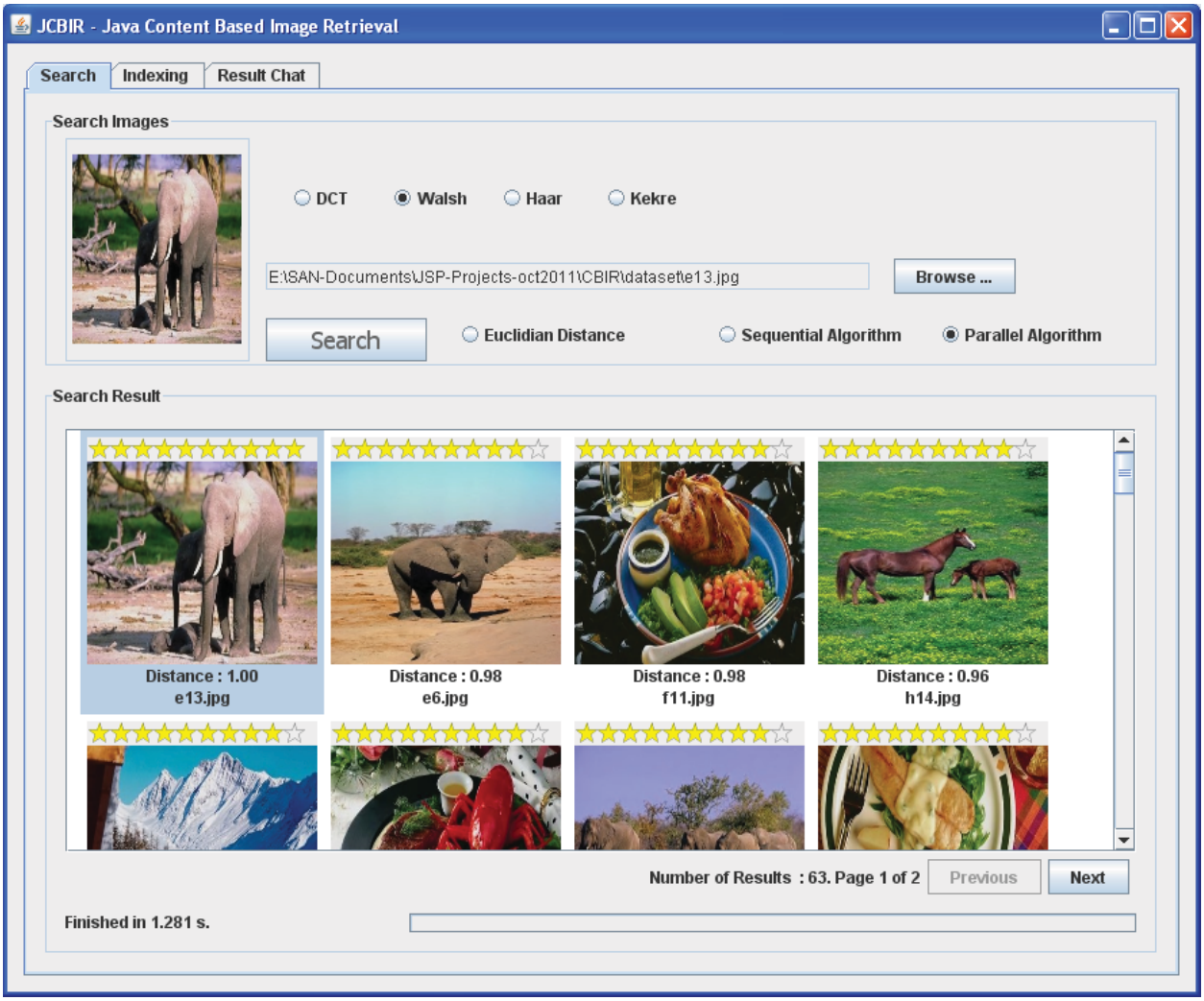
The bottom layer contains the product data warehouse which includes product images and related product information. The second layer performs meta information extraction and image feature extraction. The third layer builds a weighted heterogeneous image-rich information network. The fourth layer performs information network analysis based ranking to find relevant results for a query. The top layer contains a user-friendly Interface, which interacts with users, responds to their requests, and collects feedback. A central problem in image recognition and computer vision is determining the distance between images. Among all the image metrics, Euclidean distance is the most commonly used due to its simplicity.



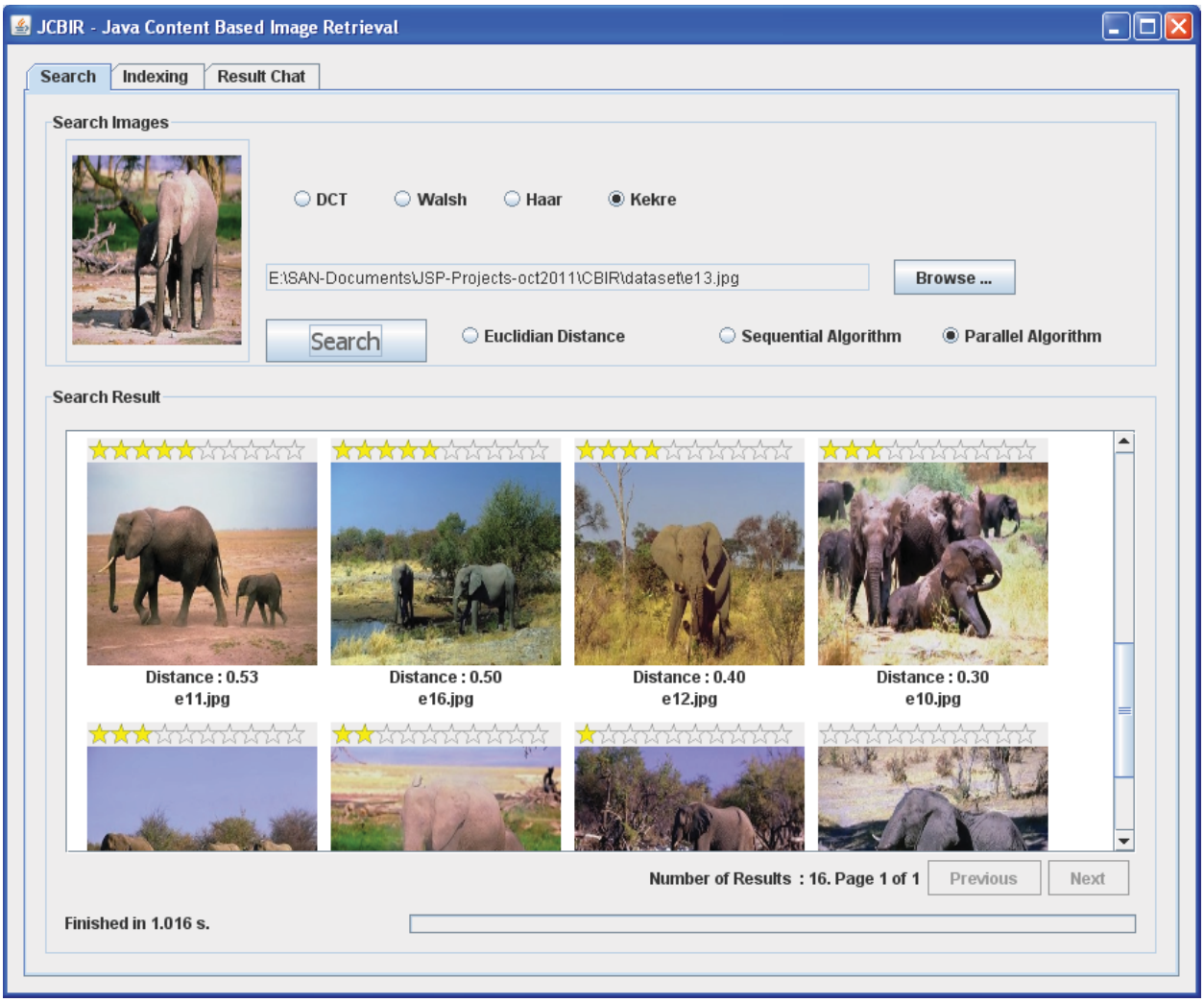
1.image upload



2.Relevant images in digital color transmission method



3.Relevant images in walsh method



4. Accurate image separation with Ratings

PERFORMANCE EVALUATION

A new product search and recommendation system to find both visually similar and semantically relevant products based on our algorithm. To accurately study the performance of Rank subject to practical constraints and devised two evaluation strategies. Together, they offer a comprehensive comparison of two ranking algorithms, especially with respect to how the rankings will be used in practice.

IV.CONCLUSION

The Rank algorithm presents a simple mechanism to incorporate the advances made in using link and network analysis for Web document search into image search. Although no links explicitly exist in the image search graph, demonstrated an effective method to infer a graph in which the images could be embedded. The result was an approach that was able to outperform the default Google ranking on the vast majority of queries tried, while maintaining reasonable computational efficiency for largescale deployment. Importantly, the ability to reduce the number of irrelevant images shown is extremely important not only for the task of image ranking for image retrieval applications but also for applications in which only a tiny set of images must be selected from a very large set of candidates.

Interestingly, by replacing user-created hyperlinks with automatically inferred "visual hyperlinks," Rank seems to deviate from a crucial source of information that makes PageRank successful: the large number of manually created links on a diverse set of pages.

First, by making Rank query dependent (by selecting the initial set of images from search engine answers), human knowledge, in terms of linking relevant images to Web pages, is directly introduced into the system. Second, implicitly rely on the intelligence of crowds: The image similarity graph is generated based on the common features between images. Those images that capture the common themes from many of the other images are those that will have higher relevancy

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