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IMPROVED IMAGE SEARCHING USING USER INPUT IMAGE FUNDAMENTAL FEATURE TECHNIQUE

D. Saravanan

Faculty of Operations & IT, IFHE University, IBS Hyderabad, India. Email: sa_roin@yahoo.com

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ABSTRACT

Image processing plays a key role in every human's life today. The use of images has widely increased due to many factors, but technology makes it very easy to upload images from any corner of the world. Information is exchanged via images easily and effectively and is an important mode of communication today. Searching for images on the web has its own advantages as well as disadvantages. The latest technique involves searching the content by using traditional text retrieval, and it never gives any guarantee to find the required information. For searching image content today most of the researchers spend time for creating various indexes to bring the effective result. This research paper brings one image searching technique which uses image feature based searching with the help of image fundamental feature. The experimental results also confirmed that the proposed approach can always retrieve intended targets even with poor selection of initial query points.

Key words: Image processing, Image Retrieval, Image content, Pixels, Data Mining, Knowledge Extraction, Image Query, Image preprocessing.

INTRODUCTION

Content-based image retrieval (CBIR) and the query by image content (QBIC application of computer vision to the image retrieval problem, namely, the problem of searching large database of digital images. "Content-based" colors, shapes, textures (Salton et.al., 1998) or any other information that can be derived from the image itself without referring to. (Saravanan and Srinivasan 2013). That means that the search will examine the actual contents of the image. The term 'content' in this context to analyze image content and searches can be expensive to produce or work on such titles or Meta keywords, the ability to rely on (Oikonomopoulos et al., 2006). Each image is a color map that identifies a ratio of pixels in color similarity by computing retrieve images based on the image will reveal colors that humans possess certain values. Current research by region and by category of multi-colored parts of the spatial relationship of the color ratio is sought. Their study, based on the colors of images it does not depend on one of the most widely used techniques, the image size or orientation. Color and color histograms comparing searches generally, though not the only technique in practice is required (Saravanan and Srinivasan 2012).

EXISTING SYSTEM

The existing Image extraction using users query deal with a single query in a single retrieval session only.

There are no virtual features for session modification and maintenance

They are using short term cross session

In Short session, each image can contain only one virtual feature

The system cannot output the retrieval results to a given query based on a sufficiently large set of training data

The system has no knowledge about which database images are relevant and which are no relevant to a set of known labels, since we do not know the user's intention until the user starts the response iteration.

Disadvantage of Existing System:

1. Unrelated search results occurs
2. Responses are not used
3. No further improvement in Image retrieval

PROPOSED SYSTEM

- The proposed image fundamental feature based system differs from the existing technique by the way
- The user initializes a query session by submitting an image.
- The system then compares the query image to each image in the database and returns the r images that are the nearest neighbors to the query.
- If the user is not satisfied with the retrieved result, the user can activate an Retrieval Response process by identifying which retrieved images are relevant and which are not relevant.
- Based on the retrieved result users can give notification to the system which is relevant and which is not relevant this will store in virtual feature
- Virtual feature can adapt that reference with that image category for future effective retrievals

Advantages of Proposed System:

1. User Response is included
2. Reduces the unrelated searches
3. The images are searched using the image properties
4. Single Image can have multiple concepts

EXPERIMENTAL SETUP

Image Preprocessing: Content based image retrieval system has database for store images and virtual concepts (Barbu, et al., 2012). Before initializing image operation, we must upload images into database based on application. In this application admin have a responsebility to upload images into database. As admin process, he must login into system. After login process, he can view list of image which is available in database If he wants to upload image with corresponding index values he can upload new image into database (Saravanan and Srinivasan, 2011). This process output shown in the fig 4. The image preprocessing steps are shown below

fig 1. Extracted video segment images are taken as input, every input frame image values are extracted and stored in the database for user extraction operation. Any new image wants to add here image feature values are extracted and corresponding image as stored in the database.

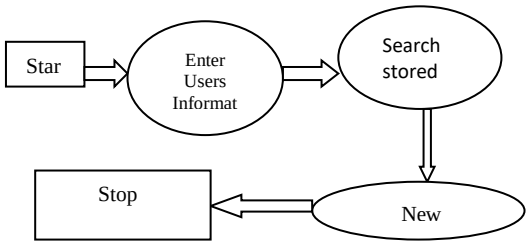

Fig 1. Imager preprocessing Step

Image search process: When we try to extract the target image by using image searching technique. This process consist*ing of various sub task they are*

Query Image: *In the search session, first we will upload into system, in this time histogram calculation and image vector calculation made automatically (Saravanan and Srinivasan, 2010). Uploaded images are store in the Data base for further process. Images are stored in the data based by using image histogram value, it reduces the user searching time and occupy the less memory space. Due to this process, the efficiency improved (Saravanan and Srinivasan, 2013). Every user input trained images this process are automated and resultant histogram values are stored in the database for further extraction process. This process output are shown in fig 5-11.*

Pseudo code for image comparison string constr = "server=.; database=content; uid=sa";
SqlConnection con = new Sql Connection (constr);
con. Open ();
string str1 = "insert into vfcon (vfpicture) values ('" + bm + "') ";
Sql Command cmd = new Sql Command (str1, con);
Execute Non-Query (); Sql Command cmd1 = new Sql Command ("select count (*) from vfcon", con);
ch = Convert.ToInt32(cmd1.ExecuteScalar()); con. Close (); return ch;

Creation of Index for stored images: When we query image into system it will process with database images when query image or database image doesn't have virtual processing but it has indexing. Based on Indexing and image processing, it will display result. Improve the query processing images are indexed, it reduces the users burden and improve the searching time.

Creation of fundamental feature for indexed Images:

This process will retrieve images using image processing and virtual feature. In this module, we will retrieve images and calculate their image vector and get their image vector in temporary storage and we will short listed closest images from that place and we will arrange and retrieved images using virtual feature. This process further shown in the following diagram. Here process started with image stored feature value (Jiang YG SUPER, 2012) Based on users input image query, system finds match and return as output for user input. Here user can future select most relevant image as user input response operation. Users response image stored further in the database. Next any user image input given information are searched in this database to produce most effective result.

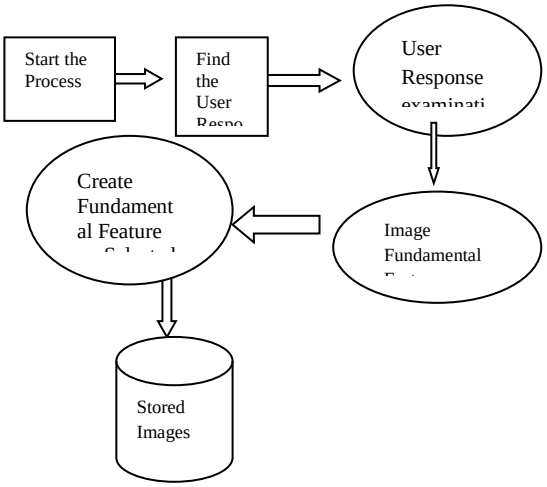

Fig 2. Image Fundamental feature Creation

IMAGE RETERIVAL USING IMAGE FUNDAMENTAL PROCESS

Image Fundamental feature is the core concept of this work. When a user gives, response will store in database for future retrieval. If user quired image into system, will display closest images with respect to Image processing calculation with indexing If user identified relevant pictures in that results (T. Quack ,2006). It will store for fundamental feature. The process performed in two step process they are

Fundamental feature creatio: When the user give relevant feedback to retrieved images, if those images haven't relationship or empty as virtual feature, it will create new virtual feature concept(Junsong Yuan et al., 2011).

Virtual feature Updation: When a user gives response based on retrieved results if those images have relationship. It will update virtual feature. Based on input image, similar images are retrieved, send to the user as output. Process started with image input feature value, based on input, image feature values are extracted and this value compare with existing image feature values. If values are similar corresponding images are returned. This process shown in the fig 14-15.

Pseudo code for crating IFF
for (int i = 0; i < calc. Length; i++)
{if (vfr[i]! = null) {string [] split = null;
string words1 = vfr[i]; char delimStr1 = ',';
split = words1.Split(delimStr1);
if (b < split. Length)
{b = split. Length;}
for (int a = 0; a < split. Length; a++)
{if (split[a]! = "") {val [i, a] = Convert. ToInt32 (split [a]);

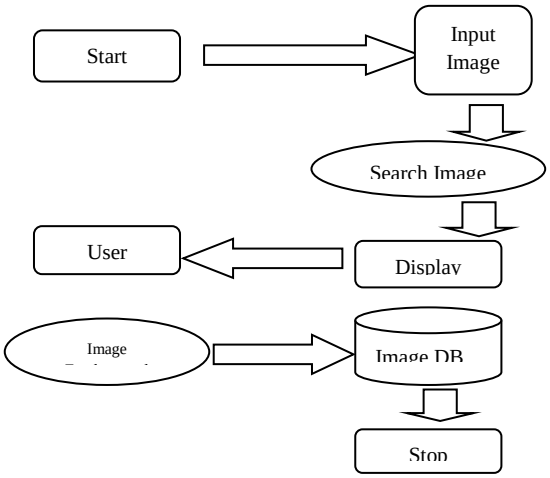

Fig 3: Image Retrieval Process flow Diagram

EXPERIMENTAL OUTPUT

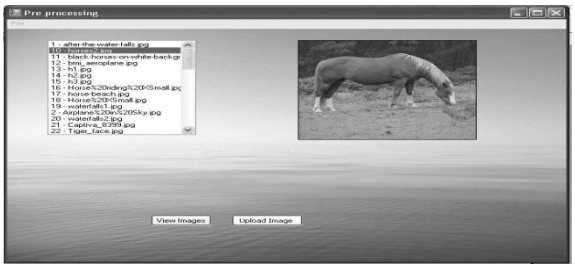

Fig 4.Image Uploading Process

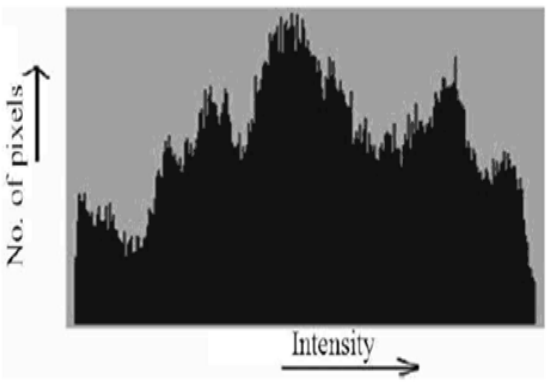

Fig 5. Image Histogram Creation

Fig 6. Image uploaded

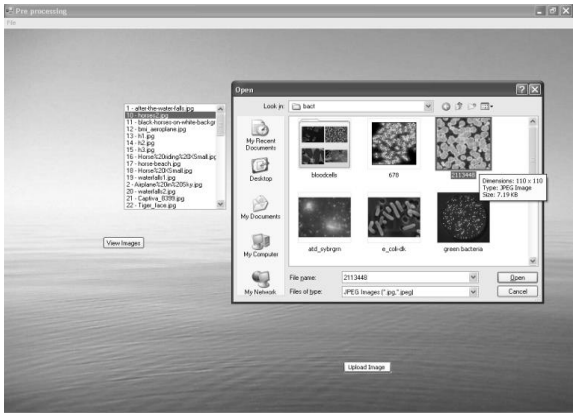

Fig 7. Storing various images in Data based

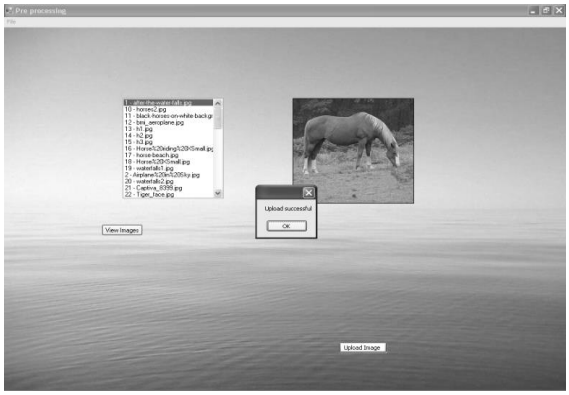

Fig 8. Image Feature Creation

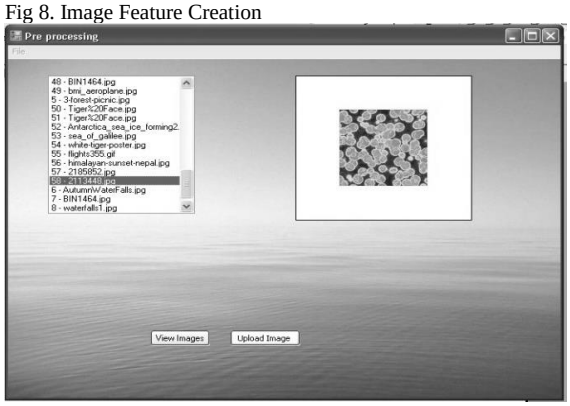

Fig 9.Image Upload Prcoess

Fig 10. Image features extracted

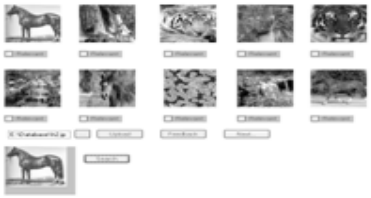

Fig11. Images are stored in the Data base using Image histogram technique

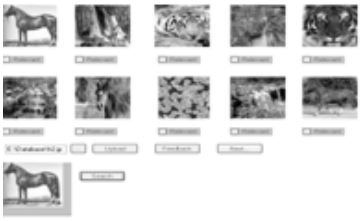

Fig 12 . Image searching process by using image input

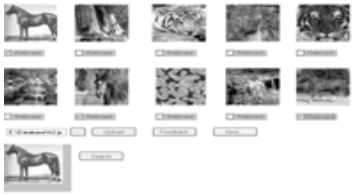

Fig 13: Creation of Image Fundamental response

Fig.14. Screen shows successful creation of Image Fundamental Response based on input image

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Fig 15: Image Searching output with improved Image Fundamental Response technique

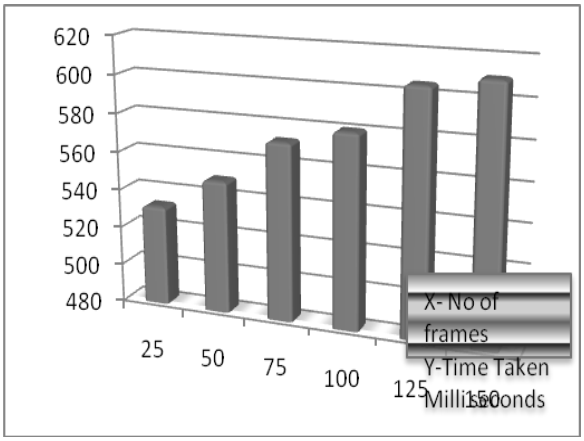

Fig 16.Imager extraction performance graph Time Vs Frames.

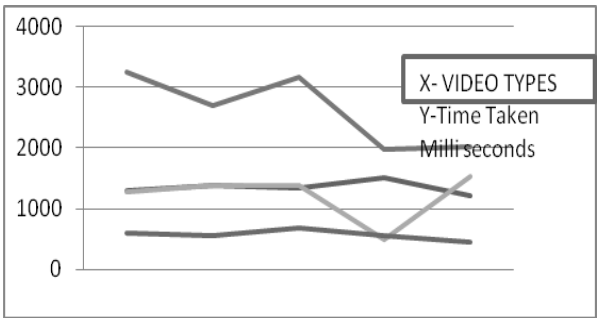

Fig 17. Performance Graph Indexing Vs Frames.

CONCLUSION AND FEATURE ENHANCEMENT: Image retrieval based on the user input query is not an easy task. Number of researcher contributed different technique for effective retrieval process. This paper brings one of such technique for image retrieval using image feature. Experiments prove that the proposed technique brigs effective result compare to the existing techniques. Every application has its own merits and demerits. The proposed technique has covered almost all the requirements. Further requirements and improvements can easily be done since the coding is mainly structured or modular in nature. Changing the existing modules or adding new modules can append improvements. Further enhancements can be made to the application, so that the search results functions very attractive and useful manner than the present one. The process future extended with other image feature values, and one or more feature values may be added to get her. It improves the searching time and also give more output for given input.

REFERENCES

Barbu, A., Bridge, A., Coroian, D., Dickinson, S., Mussman, S., Narayanaswamy, S., Salvi, D., Schmidt, L., Shangguan, J., Siskind, J.M., Waggoner, J.,Wang, S.,Wei, J., Yin, Y., Zhang, Z., Large-scale automatic labeling of video events with verbs based on event-participant interaction. In: arXiv:1204.361 6v1 (2012).

Jiang. Y.G., SUPER: Towards real-time event recognition in nternet videos, Proceedings of ACM International conference on multimedia retrieval (2012).

Junsong Yuan, Jamie Shotton, Andrew Fitzgibbon, Mat Cook, Toby Sharp, Mark Finocchio, Richard Moore, Alex Kipman, Andrew blake, Discovery of Collocation Patterns: from Visual Words to Visual Phrases, IEEE International Conference on Computer Vision and Pattern Recognition (2011)

Oikonomopoulos, A., I. Patras, M. Pantic, Spatio-temporal salient points for visual recognition of human actions, Trans. Syst. Man Cybern. B (2006).

Quack, T., V. Ferrari, L.V. Gool, Video mining with frequent itemset configurations, in: CIVR, (2006.)

Salton, G., C. Buckley, Term-weighting approaches in automatic text retrieval. Inf. Process. Manag. Pp. 513– 523(1998)

Saravanan, D., A. Ramesh Kumar, Content Based Image Retrieval using Color Histogram. International Journal of Computer Science and Information Technology 4(2): 242-245 (2013).

Saravanan, D., S. Srinivasan, A proposed new Algorithm for analysis for analysis of Hierarchical clustering in video Data mining. International Journal of Data Mining and knowledge Engineering 3(9): 569-572 (2011).

Saravanan, D., S. Srinivasan, Indexing and Accessing Video Frames by Histogram Approach, Proceeding of International Conference on RSTSCC, Pp. 196-199 (2010).

Saravanan, D., S.Srinivasan, Matrix Based Indexing Technique for video data. Journal of Computer Science 9(5): 534-542(2013).

Saravanan, D., S.Srinivasan, Video image retrieval using data mining Techniques. Journal of Computer Applications 5(1): 39-42 (2012).

Saravanan, D., V.Somasundaram, Matrix Based Sequential Indexing Technique for Video Data Mining. Journal of Theoretical and Applied Information Technology 67(3): 725-731 (2014)

Siskind, J.M., J. Waggoner, S. Wang, J. Wei, Y. Yin, Z. Zhang, Large-scale automatic labeling of video events with verbs based on event-participant interaction. In: arXiv:1204.3616v1 (2012).