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"SURVEY ON DIFFERENT TYPES OF CONTENT BASED IMAGE RETRIEVAL SYSTEM"

Ashwini Somnathe
Assistant Professor, Rayat Shikshan Santha's Karmaveer Bhaurao Patil College Vashi, Navi Mumbai.

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ABSTRACT

Content based image retrieval (CBIR)has been an most active research topic in a last decade. So many researcher focus on the shifted from designing complicated low level feature extraction algorithms to reducing 'semantic gap' between visual features and richness of the human semantics ,for improving the retrieval accuracy of CBIR systems,. In this review, we present an overview of advances made in Content Based Image Retrieval CBIR System. This review is aimed at providing readers with the succinct, yet adequate the compendium of progresses made in CBIR system. Expectantly , this effort will be stimulate the further interest aimed at pursuit of more advanced algorithms as well as experimental validations for the available technologies and the extensions to the other domains.

INTRODUCTION

With rapid development of multimedia also as network technology, people can access large number of multimedia information. For the people that want to form the complete use of the multimedia information resources, primary question is how to the query multimedia information of interest. Text query are often applied to the multimedia information retrieval, but it's been inherent deficiencies. One side, text annotation of the multimedia information will spend lot of manpower also as resources and it's inefficient. On other side, annotated text is typically the person's perception of the multimedia information. it's subject to the impact of individual difference and state of the human also as environment, and therefore the described results could also be more one-sided. additionally, it's clearly incomplete to explain content-rich multimedia information with a little amount of text. Content Based Image Retrieval techniques appeared in 1990s. It solves above problems well. It

uses low level features like color, texture and therefore the shape to the describe image content, and breaks through limitation of traditional text query technique.

CBIR system are often implemented supported single feature. Single image feature describes the content of an image from a selected angle. it's going to be suitable for a few images, but it also could also be difficult to explain other images. Moreover, describing an image with single feature is additionally incomplete. Representing a picture with multi-features from multi-angles is expected to attain better results. Information is multisource, and knowledge fusion approach is diverse. the matter how the way to organize multi-source information during a suitable way to achieve the intended results attracts extensive attention from the researchers during this field.

LITERATURE SURVEY

(Ritendra Datta et. al. 2008) Information fusion are often carried out in feature level Information fusion in feature level has the advantage in few extent. The reason their as different features reflect several characteristics of image, if those of features are the integrated reasonably, and results will both reserve discriminate information of multifeature and the eliminate interference resulted from difference of multifeature.

(B.G. Prasad et al. 2004) proposed the method to retrieve images by region matching using a combined feature index supported the color, shape, and site within framework of MPEG-7. The dominant regions within each image are indexed using integrated color, shape, and location features.

(Young Deok Chun et al. 2008) proposed content based image retrieval method supported an efficient combination of multi resolution color and texture features. Color autocorrelograms of the hue and saturation component images in HSV color space are taken as color features. BDIP and the BVLC moments of worth component image are adopted as texture features. the colour and texture features are extracted in multiresolution wavelet domain and combined.

(Tai X. Y. et al. 2008) proposed new image feature called color texture correlogram which is that extension of color correlogram. the feel feature extracted by the feel spectrum algorithm is that the combined with the colour feature vector, then the calculate spatial correlation of color-texture feature vector.

(Hui Yu et al. 2002) accepted a local Fourier transform as the texture representation the scheme and so then the derive eight characteristic maps for describing different aspects of co-occurrence relations of the image pixels in each channel of the colour space. Then they calculate the first and therefore the second moments of these maps because the representation of natural color image pixel distribution, resulting in 48-dimensional feature vector. The new low level feature is named as color texture moments (CTM), which can even be considered the actual extension to paint moments in eight aspects through the eight orthogonal templates.

The Information fusion can also be carried out in the decision making level. Image retrievals based on the different features are accomplished respectively, and then the similarity score came from these results are then fused according to the some rules, the better result will be returned.

(Anil K. Jain et al. ,2002) combined results of the shape based retrieval and the color based retrieval by the combining associated similarity values with the

appropriate weights.

(Xiuqi Li et al., 2002) the proposed a new approach to image retrieval using the color, texture as well as spatial information. The Color homo-gram filter, wavelet texture filter, as well as spatial filter are used in sequence to the eliminate images that are dissimilar to the query image in the color, texture, and the spatial information from search ranges respectively. The final query ranking is based on total normalized distance in the color, texture, and the spatial information of all the images passing three filters.

(Ilya Markov et al. 2008) proposed technique to combine image similarity measures which takes in to account the particular query image. They introduced the mixed metrics obtained from the color and the texture metrics by using their weighted linear combination.

(M. Jovic et al. ,2008) proposed an image similarity method based on a fusion of similarity scores of feature similarity the ranking lists. It takes an advantage of the combining similarity value scores of all feature types representing of a image content by the means of the different integration algorithms when the computing image similarity.

The main question Arises is, which features are suitable for which task in image retrieval?

(Ying Liua, et. al .2007) Their is clear search is that the colour histograms, often cited because the baseline in CBIR, clearly are the reasonably good baseline for the overall color photographs. Nevertheless, this approaches using the local image descriptors out perform the color histograms within the various tasks but usually at a price of much higher computational costs. If a images are from the restricted domain, as they are in the IRMA and in t ZuBuD task, other methods must be considered as a baseline. It should be noted that for specialized tasks, such as finding images that show certain objects, better methods exist today that can learn models of particular objects from a set of training data. However, these approaches are computationally far more expensive and always require relatively large amounts of training data. The databases chosen are representative for four different tasks in which CBIR plays an important role. Another conclusion we have drawn from the work done by researchers is that the intuitive assumption that classification of images and CBIR are strongly connected is justified. Both tasks are strongly related to the concept of similarity which can be measured best if suitable features are available. Ying Lu et. al., have evaluated this assumption quantitatively by considering four different domains and analyzing the classification error rate for classification and the mean average precision for CBIR. It was very clearly shown that the features that perform well for the classification also perform well for CBIR and the vice versa. Such strong connection allows to take the advantage of information obtained in either classification or CBIR for other the respective task. The CBIR has drawn substantial the research attention in last decade. CBIR usually indexes images by low-level visual features which, though they cannot completely characterize semantic content, are easier to integrate into mathematical formulations.

(Xiang-Yang Wang et.al ,2012) A CBIR method was proposed by which uses the combination of pseudo-Zernike chromaticity distribution moments and rotation-scale invariant steerable pyramid texture descriptor. Experimental results showed

that the proposed method yielded higher retrieval accuracy than the other conventional methods with no greater feature vector dimension. In addition, the proposed method almost always showed performance gain in of average normal precision, and average normal recall over the other methods. The performance of the proposed image retrieval degrade when applied in a real world scenario, this is because the similarity measure calculated using pair-wise comparisons for both color and texture descriptors could be a bottle-neck.

(Fei Yan et. al. ,2017) present an summary of the advances made in the quantum image processing (QIP) comprising of image representations, operations realizable on them, and therefore the likely protocols and the algorithms for his or her applications. Mostly , they focus on the recent progresses on quantum image processing (QIP) based security technologies including the quantum watermarking, quantum image encryption, as well as quantum image steganography. They aimed toward providing succinct, yet adequate compendium of a progresses made with in the quantum image processing(QIP) sub-area. Expectantly , this effort stimulate the further interest aimed toward pursuit of some more advanced algorithms as well as experimental validations for available technologies as well as extensions to other the domains.

(Yinghui Gao et. al. ,2013) states, combining quantum mechanics with image processing is an important and effective approach to address the high real-time computational requirements of classical image processing. The novel enhanced quantum representation (NEQR) for digital images has been proposed to improve FRQI, which is the latest and best existing quantum image model. NEQR model uses the qubit sequence to store gray scale information of all pixels in image for first time, instead of the probability amplitude of a single qubit, as in FRQI. NEQR uses a qubit sequence to store gray-scale information, NEQR needs an extra q−1 qubits (2q being the number of gray-scale values in the image) for storage compared to FRQI. However, it is very valuable for NEQR to make this tradeoff between a little extra quantum storage and a significant performance improvement in quantum image processing. Quantum image processing is still in its infancy, most studies based on the existing quantum image models can focus only on certain simple geometric and color operations. The new NEQR quantum image-representation model proposed in this paper constitutes a significant improvement in some aspects over existing quantum image models, and this will motivate the authors to explore further this novel quantum image model. Whether it is suitable to use NEQR to perform complex image processing such as quantum pattern recognition and quantum image matching will be the topic of future research on quantum image processing.

Quantum image processing is an interdisciplinary research field that combines quantum computation with digital image processing. In this research field, quantum image storage and retrieval, and quantum image processing algorithm design are two important branches. Similar to using the bit sequence to store an image in the classical computers, quantum computers can also use the quantum bit sequence to store an image.

(XingAo Liu, Ri-Gui Zhou ,2019), proposed two algorithms to store and retrieve a color image using quantum mechanics. In the first algorithm, each pixel's color is represented an angle rather than the color subscript of the color queue. In the

second algorithm, each pixel's color is divided into three channels: R, G and B, and each channel is represented by an angle. By the discussion, compared with the Li et al.'s algorithm, the first algorithm has the advantage in the speed of retrieval, the total number of qubits and the total number of measurements, as well as second algorithm has advantage in accuracy of retrieval. Thus, based on the requirements, the suitable storage algorithms can be chosen.

(Li et al. ,2013). proposed quantum image compression algorithm based on the proposed quantum image representation. The quantum image compression algorithm is also applicable to the quantum color image representation proposed.

CONCLUSIONS

The approach of the paper to proposed an image retrieval method based multi feature similarity score fusion. For the query image, multiple similarity scores lists supported the different features are obtained. Then using the genetic algorithm, multi feature similarity scores are fused, and the better image retrieval results are gained. during this paper, once we evaluated fitness of an individual, we considered only occurrence frequencies of image in retrieval result, as well as not the situation of the image in retrieval result. However, location of an image in the retrieval result reflects directly similarity of it and the query image. So, this factor must be taken under the consideration when evaluating a fitness of an individual, which is the additionally our future work.

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