Entropy Optimization for Image Retrieval

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ABSTRACT

Recent studies shows that there are several information retrieval are being developed. Earlier the main focus was text retrieval. Information retrieval (IR) concerned with the searching and retrieving of knowledge-based information from database. In this paper, we represent the various models and techniques for information retrieval. This paper focuses some of the most related image retrieval techniques.

Keywords : Search And Retrieval, Dictionary Learning, BOW, Entropy Optimization, Image Retrieval.

I. INTRODUCTION

Information retrieval (IR) is the task of retrieving objects, like images, from a database where the user's information need. Research focused mostly on text retrieval ,now in image retrieval, and video retrieval , since the availability of digital technology led to a great increase of multimedia data Image retrieval is the most studied and challenging aspect of multimedia information retrieval.

For image category classification Bag of words process is used,it is by extracting feature of images.Bag of words is a model that is used in natural language processing and information retrieval.The BoW model takes each image as a document ,it contains a number of different "visual" words.The features can be extracted by some clustering algorithms.From this bag of words(BOW) codebook is generated

In BOW features are calculated in terms of frequency.Most popular ways to normalize the frequencies is to weight a term by inverse of document frequency(tf-idf).For classification purpose class label of a document is taken.Entropy is a key measure in Information retrieval,it quantifies the amount of uncertainty in values or the outcome of random process.Entropy refers to the disorder . The state-of-the art methods, b) reduce the storage requirements and query time by using smaller dictionaries, and c) transfer the learned knowledge to previously unseen classes without retraining.

The EO-BoW, which optimizes a retrieval-oriented objective function. We demonstrated the ability of the proposed method to improve the retrieval performance using two image datasets, a collection of time-series datasets, a text dataset and a video dataset.

II. METHODS AND MATERIAL

Entropy optimization by bag of words, in this method bag of words alone cannot be used, it can be used for extracting a feature vector from each word of a text document .For optimizing the Entropy is opted ,inoder to maximize the relevant information[1].It is a effective retrieval dictionary learning method to improve retrieval precision beyond other methods and can reduce storage space and time .Without training learned dictionary can be transfered.By using entropy codebook can be optimized.By this method images can be retrieved and can be used in other retrieval.

Spatial Pyramid Matching for categorization,in this paper the semantic category of the image is resolved by spatial pyramid matching method.It a method for effective scene categorization[2].It produce high accuracy on large database. Build pyramid in image space, quantize feature space is the approach used. Find maximum-weight matching (weight is inversely proportional to distance). Global spatial regularities (natural scene statistics) help even in databases with high geometric variability.

Max margin multiple dictionary learnig,the ignorance to supervisory information is due to the histogram representations of images over the learned dictionary may not be optimal for a classification task. For that, a highly y better choice is to incorporate class labels into the dictionary construction .Structural information and visual pattern are taken for multiple high dimensional space.For feature vectors SIFT and LBP are excrated.For clustering k-means algorithm for learnig codebook.Max margin[3] is for learning all patches into different clusters for image classification.

Optimizing Visual Vocabularies Using Soft Assignment Entropies [4],the large database for state of art ,retrieval of image is based on quanatizing descriptor.In the soft assignment techniques highly similar matching images are taken. Here ground truth correspondences are used to obtain visual words. For optimization of the vocabulary, minimizing the entropies of soft assignment of points.K-split is the clustering algorithm used,k-split can be compared with k-means. It is tested with real time data for positive rate and for better results.

Evaluating Bag-of-Visual-Words in scene [5] an image can be described by bag of visual words and this can be used for classification purpose in image data.This is regarded with dimension, selection, and weighting of visual words.Here for text categorization weights,stop word removal,feature selection representations are used. TRECVID and PASCAL collections are used for this study,this provide for desiging visual words.Performance can be increased.

Feature Quantization is widely used image retrieval component. By quantizing local features into visual words,where feature will match each other and obtain the same word ID. Similarity is measured with corresponding visual word histograms. Here local feature variations and traditional quantizaton are not used for distribution of matched features. A computationally efficient optimization scheme for large scale vocabulary training is used for feature distribution. The entropy optimized[6] vocabulary performs better than unsupervised quantization methods in terms of recall and precision for feature matching.

Actions from movies is a paper that deals with recognition of natural actions from the movie.This a challenging area for past several years.Here alternative methods for action retrieval from script is evaluated. A method for video classification[7] that builds and extends several recent ideas including local space-time features, space-time pyramids and multichannel non-linear SVMs.The method is to improve the state of art in a KTH dataset.The method is applied to learn and classify the actions.

Bag of feature(BoF) approache is for vision task,image classification,video search,texture search,it is based on orderless collection of local image descriptor.Image classification and retrieval[8] is on to BoF image representations, describes critical design choices, and surveys the BoF literature. Emphasis is placed on recent techniques that mitigate quantization errors, improve feature detection, and speed up image retrieval. At the same time, unresolved issues and fundamental challenges are raised. Among the unresolved issues are determining the best techniques for sampling images, describing local image features, and evaluating system performance. Among the more fundamental challenges are how and whether BoF methods can contribute to localizing objects in complex images, or to associating high-level semantics with natural images. This survey should be useful both for introducing new investigators to the field and for providing existing researchers with a consolidated reference to related work.

Image Retrieval based on Bag-of-Words model[9] , article gives a survey for bag-of-words (BoW) or bag-of-features model in image retrieval system. In recent years, large-scale image retrieval shows significant potential in both industry applications and research problems. As local descriptors like SIFT demonstrate great discriminative power in solving vision problems like object recognition, image classification and annotation, more and more state-of-the-art large scale image retrieval systems are trying to rely on them. A common way to achieve this is first quantizing local descriptors into visual words, and then applying scalable textual indexing and retrieval schemes. This model as bag-of-words or bag-of-features model.

In World Wide Web as web pages and documents, it is increased by huge amount of data so the problem persist for searching a particular document. There are various document image retrieval image methods are available

such as classification, clustering and graph techniques are designed to detect the problems in document image retrieval system. This research is concerned with study and analysis of focusing document image retrieval and logo matching in journal database. There are various national and international journals are available in online to representing their logo in document. Retrieval framework is effective not only in improving retrieval performance in a given query session, but also utilizes the knowledge learnt from previous queries to reduce the number of iterations in following queries. The methods and techniques for document image retrieval analysis, logo[10] matching and survey includes the current state of research problems in information retrieval, document image retrieval, relevance feedback and logo based text retrieval.

III. CONCLUSION

This papers deals with the image feature text retrieval. The image text retrieval process is represented by Bag of Words model. The relevance of this literature study is to make awareness about the state of development of text retrieval techniques. This paper not arguing that here is a perfect collection of all the methods in image text retrieval due to the exponential growth of experiments in information retrieval.

IV. ACKNOWLEDGMENT

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