FINDING AND RECOGNISING THE SIMILAR IMAGES ON FACEBOOK AND WEB WITH THE HELP OF CBIR TECHNIQUE

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Abstract : Data are precious thing in digital world, because data play a main role in so many application like banking, serenity surveillances, authentication documents etc. Data can be audio, video, text and image. In these paper we take image document. In image, the works on forgery detection(slicing, cropping, moving etc.) using SIFT and Zernike movement algorithm will be carried out. Here SIFT is used for detecting feature value and Zernike movement is used for identifying specific region from Image.
***Keywords*: data, forgery, Zernike moment, SIFT, feature, detection.**

I. INTRODUCTION

This analysis identify gaps and the need for research in the area of finding and recognizing your images from media and be aware of our content. Image Processing is used to perform some set of operations on an image in order to get an enhanced image or extracting some useful information from the image.

The Image Processing done in three steps.

1. Importing image as input via image acquisition tools
2. Analyzing and manipulating the image
3. Exporting altered image or parameters related to image as output based on image analysis.

There are mainly two types of image processing. Analogue Image Processing and Digital Image Processing Analogue Image Processing is used for hard copies like as printouts and photographs. For this type of image processing image analyst use various types of visual techniques and fundamentals of interpretation. Digital Image Processing is used for manipulation of digital image by using computers. For this type of image processing image analyst used various types of digital techniques like as pre-processing, enhancement, display, information extraction etc.

Machine learning Algorithms is also used here to train the data. There are two types of Machine learning algorithms, supervised learning and unsupervised learning. Supervised learning is the Data mining task of inferring a function from labeled training data. The training data consist of a set of training examples. In supervised learning, each example is a pair consisting of an input object (typically a vector) and a desired output value (also called the supervisory signal). Unsupervised learning is the training of an artificial intelligence (AI) algorithm using information that is neither classified nor labelled and allowing the algorithm to act on that information without guidance.

The concept of CBIR Techniques is used to detect and classify copy, move, forgery content with high accuracy and time complexity. The two techniques in CBIR used are SIFT and ZERNIKE. The SIFT does the function of feature detection, feature description, feature matching. SIFT identifies the objects by sound, touching or image processing of movement of body or objects. In SIFT Identifying object by pixels is not very useful, so different lighting, different color, rotation, other perspectives are to be considered. In SIFT, feature is a point to describe object, corners, crossing of edges, region with constant properties and also interest points.[9] Zernike moments have mathematical properties, which make them ideal image features to be used as shape descriptors in shape classification problems. They have rotational invariant properties and could be made to be scale and translation all invariant as well. However, many factors need to be considered to apply Zernike Moments correctly. [10]

Figure.1 Original Image

Figure.2 Forgery Image of Image 1

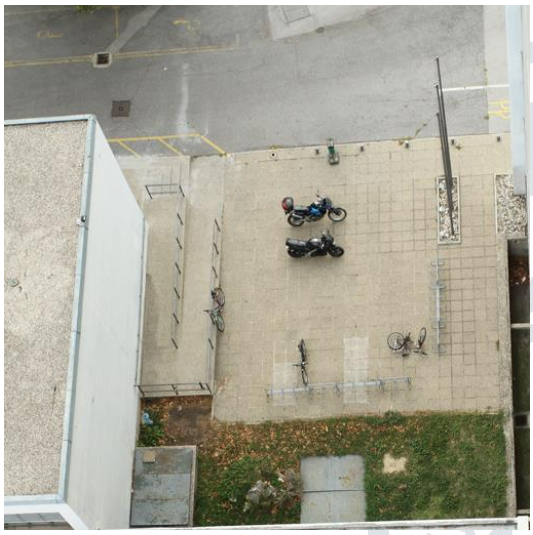

Figure.3 Original Image

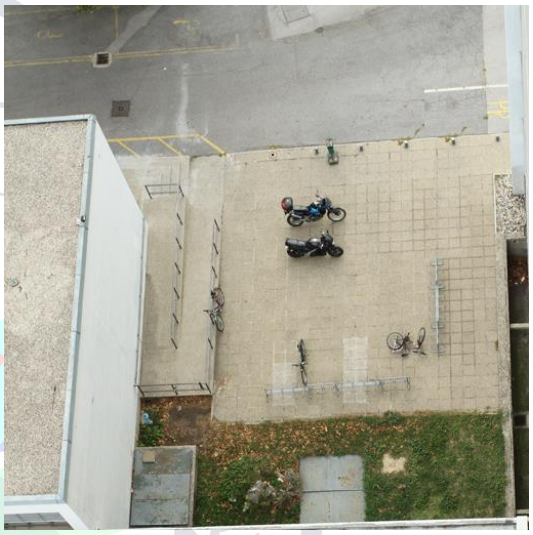

Figure.4 Forgery Image of Image

II. LITERATURE REVIEW:

1. A Prominent Object Region Detection Based Approach for CBIR Application

In this paper, Jitesh Pradhan, Arup Kumar Pal, Haider Banka has recorded that the performance of image retrieval has been increased significantly for object based and less rotationally invariant images. Main disadvantage of this proposed approach is that it will not work significantly for those images which does not contain some visually salient objects and also sensitive to rotation. But by incorporating color and texture features along with this method will overcome those problems because the color features are rotational, positional, and scale invariant image features. The performance of this approach can be further enhanced by fusing shape, texture and color features together along with GBVS map. Since many times it happens that the image contains scattered objects and for that case object detection alone is not sufficient for good CBIR results and need to consider the actual low level image feature which can identify the image. These low level image features are color, shape and texture features and by considering all these features, the proposed approach will be more effective and less sensitive to the spatial structures of the image. This approach will work better for other categories of images also if some histogram color features or transform domain texture features will be incorporated with object based feature.

2. An Improved Method For Copy-move Forgery Detection In Digital Forensic

In this paper, Sreelakshmy I J and Jesna Anver has shown that using adaptive overlapped segmentation and feature-point matching copy-move forgeries can be detected effectively. The Adaptive Overlapped Segmentation algorithm is to divide the image into non-overlapping and irregular segments adaptively. This will enhance the accuracy of the forgery detection results. Then, in each segments, the feature points are extracted using SURF algorithm it will reduce the computational cost. And the extracted features are matched with one another to locate suspected forgery regions. Afterwards, merged regions are generated and then morphological operation is applied to it to generate the detected forgery regions. This scheme will give forgery detection results faster with a better accuracy under various conditions, such as geometric transforms and JPEG compression compared to the existing systems.

3. Image Forgery Detection Using Adaptive Over-Segmentation and Feature Point Matching

In this paper, Chi-Man Pun, have proposed a novel copy-move forgery detection scheme using adaptive over-segmentation and feature-point matching. The Adaptive Over-Segmentation algorithm is proposed to segment the host image into non-overlapping and irregular blocks adaptively according to the given host images; using this approach, for each image, it can determine an appropriate block initial size to enhance the accuracy of the forgery detection results and, at the same time, reduce the computational expenses. Then, in each block, the feature points are extracted as block features, and the Block Feature Matching algorithm is proposed, with which the block features are matched with one another to locate the labeled feature points; this procedure can approximately indicate the suspected forgery regions. Subsequently, to detect the more accurate forgery regions, we propose the Forgery Region Extraction algorithm, in which the labeled feature points are replaced with small superpixels as feature blocks, and the neighboring feature blocks with local color features that are similar to the feature blocks are merged to generate the merged regions. Next, the morphological operation is applied to the merged regions to generate the detected forgery regions. Future work could focus on applying the proposed forgery detection scheme based on adaptive over-segmentation and feature-point matching on other types of forgery, such as splicing or other types of media, for example, video and audio.

4. Copy–Move Forgery Detection Exploiting Statistical Image Features

In this paper, Rahul Dixit, Ruchira Naskar and Aditi Sahoo proposed method operates by splitting an image into fixed size overlapping blocks, in its frequency domain, and considering statistical features, mean and variance, of each individual block. The proposed methodology performance is evaluated by using matrices DA and FPR. According to the experimental results observed that the presented method's performances is raised. This experimental results also prove that the presented technique exceed the existing techniques with reference to detection accuracy and false positive rate. Future work of this research includes the association of copy-scale-move and copy-rotate-move duplicated image areas.

III. COMPARATIVE TABLE:

Title	Methods	Weakness	Future Work
[1] A Prominent Object Region Detection Based Approach for CBIR Application	CBIR Technique	It will not work significantly for images which does not contain some visually salient objects and also sensitive to rotation.	This approach will work better for other categories of images also if some histogram color features or transform domain texture features will be incorporated with object based feature.
[2] An Improved Method For Copy-move Forgery Detection In Digital Forensic	Forgery-region Extraction, SURF algorithm	SIFT method is not efficient with the small duplicated regions. SIFT Algorithm can not detect flat forged regions	This approach will work better for other categories in extracting images of forgery
[3] Image Forgery Detection Using Adaptive Over-Segmentation and Feature Point Matching	Forgery Region Extraction algorithm	The size of the host images increases, the matching computation of the overlapping blocks will be much more expensive.	Future work could focus on applying the proposed forgery detection scheme based on adaptive over-segmentation and feature-point matching on other types of forgery, such as splicing or other types of media, for example, video and audio.
[4] Copy–Move Forgery Detection Exploiting Statistical Image Features	Discrete Wavelet Transform, Forgery Detection technique	Efficiency was found to be about not much accurate	Future work of this research includes the association of copy-scale-move and copy-rotate-move duplicated image areas.

Table -1: Comparative Table

IV. SYSTEM FLOW DIAGRAM:

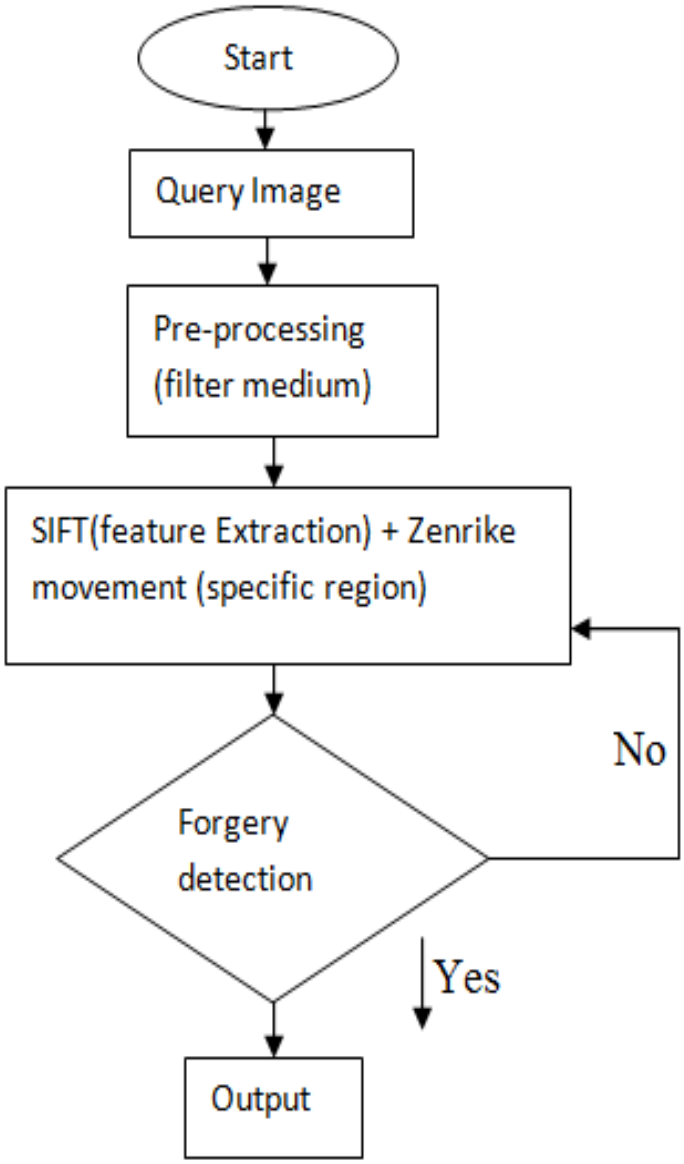

Fig. 5 System Flow Diagram

Explaination of system flow

Step 1 Start the system by entering the image. Step 2: Select the Area of the Query Image. Step 3: The pre processing of the images will be done in this step with the help of filter medium. Step 4: Feature Extraction using SIFT will be done And then Specific region with the help of Zenrike movement will be extracted. Step 5: After selecting the features, classification will be performed by using ANN with Spiking Neural Network. Step 6: Artificial Neural Networks (ANN) are statistical learning algorithms which is one of the most effective ways for performing pattern recognition and data classification, They consist of interconnected neurons where each unit takes an input, applies a function to it and then passes the output. Step 7: Classify the output.

IV. EXPERIMENTAL RESULTS

Example 1.

Figure1. Forgery Image

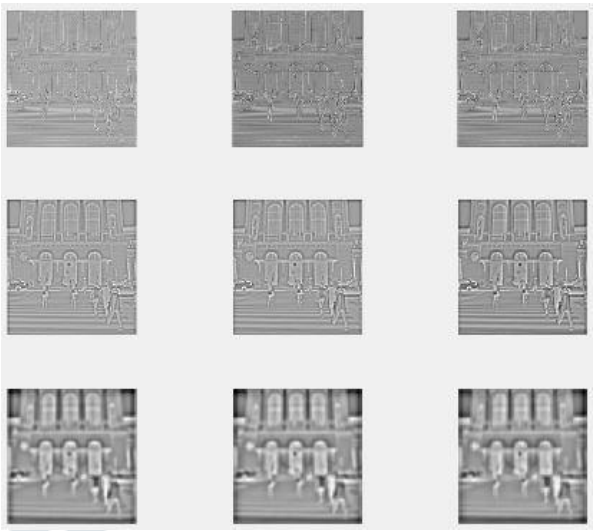

Figure2. Blur Images

Figure3. Gray Image

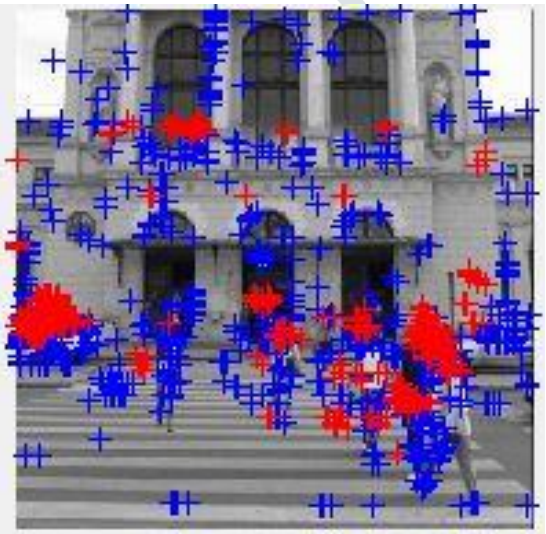

Figure4. SIFT+PZM Image

Example 2.

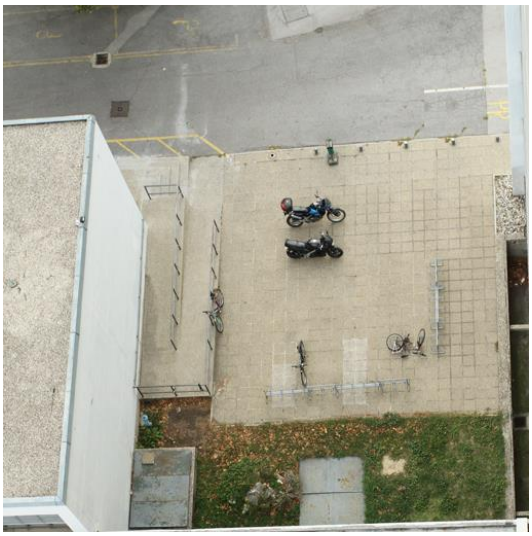

Figure1. Forgery Image

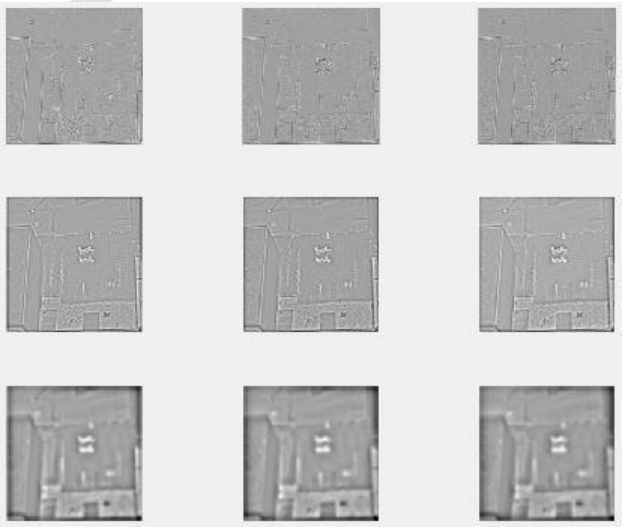

Figure2. Blur Images

Figure3. Gray Image

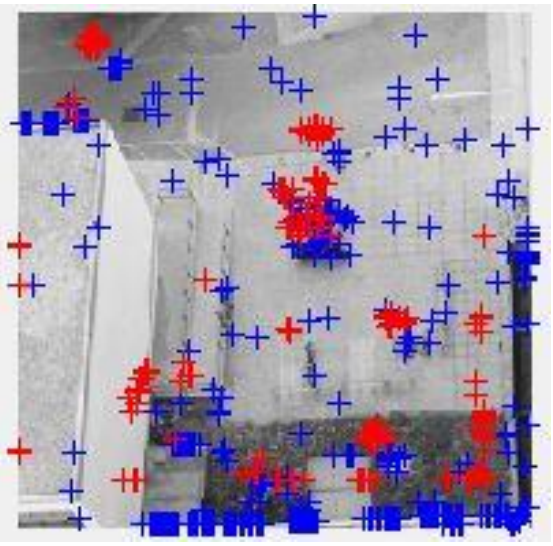

Figure4. SIFT+PZM Image

IV. CONCLUSION:

In this paper, the description of system analysis and implementation show the classification of copy, move, forgery content with high accuracy and minimum time complexity. To overcome the research gap in current technology, proposed method works on hybrid CBIR Techniques using SIFT method and ZERNIKE feature extraction approach. With the help of this proposed work, system will detect the forgery images very efficiently and accurately.

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