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A Survey on Detection of Image Forgery using Copy Move Forgery Detection Technique

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ABSTRACT: Digital images play a very substantial role in various fields. Due to the wide variety of image editing it becomes easy to modify images, which afterward becomes difficult to use digital images in applications like medical imaging, digital forensics, scientific publications, etc. where their authenticity is judge. One of the mostly found types of image Forgery is Copy-Move forgery and Creation of Contrast Enhancement. This paper proposed Copy Move Forgery and Global Contrast Enhancement Detection method for detecting the Image Forgery. The proposed technique is robust against compressed images of all image formats. Image forensics is a fast growing research field and promises a convincing improvement in forgery detection.

KEYWORDS: Copy-Move Forgery Detection, duplicated region detection, Image forgery.

I. INTRODUCTION

Digital images in the current era play very important role in various fields. They are used in different applications in the area of military, news, medical diagnosis and media. Due to the development in technology of digital image, for example, cameras, software, and computers and the wide spread via the internet, digital image can be considered a premier source of information this time. With the enrichment of technology and availability of low-cost hardware and software editing tools, it is not crucial to change or forge the.

Digital image forgery and manipulation of digital images in many cases is to intentionally affect the awareness of the recipient. In this situation Digital image forgery detection plays an important role in image forensics to provide authenticity of the image. There are many detection techniques are classified into two approaches as:

a) Active Techniques

b) Passive Techniques.

Copy-Move Forgery Detection techniques have been classified mainly into two approaches:

1) Block based Methods

2) Key-Point based Methods

Similar feature vector are matched to detect the forgery region. In Key-point methods, image is not divided into Blocks. It is divided into key-points and there is no Feature vector are computed for region having high entropy and after that matching is performed to detect the forged region. Therefore First of all images given as input is converted into gray scale image and then the gray scale image is converted into overlapping blocks or key-points used for detecting forged region. Block based methods are able to detect forgery in flat regions. It can also handle multiple cloning. The block based methods are robust against JPEG compression and also to addition of noise it gives exact location of tampered region. Key-point methods are invariant to geometric transformation such as scaling and rotation.

II. LITERATURE SURVEY

In this chapter a brief overview of the problem of detecting influence aspects, on which objects are connected, and influence degree.

S. Bayram, I. Avcubas, B. Sankur, and N. Memon [1] proposed a technique for the detection of doctoring in digital image. Doctoring includes multiple steps i.e. a sequence of basic image-processing operations such as rotation, scaling,

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smoothing, contrast shift etc. The technique used could detect whether image manipulations occurred or not but it fails to determine which specific type of manipulation was enforced.

M. Stamm and K. Liu [2] proposed a blind forensic algorithm for identifying the practice of global contrast enhancement procedure on digital images. Proposed work is based on the fact that, gray level histogram of the unaltered images exhibit a smooth contour whereas, gray level histogram of contrast enhanced images shows unsmoothness (peak/gap artifacts). A different algorithm is presented to detect the histogram equalization which is also a type of contrast enhancement operation. This algorithm works by finding out the individual artifacts which are left by histogram equalization operation.

M. C. Stamm and K. J. R. Liu [3] proposed different methods not only for the detection of global and local contrast enhancement but also for identifying the use of histogram equalization and for the detection of the global inclusion of noise to an already JPEG-compressed image. The method proposed detects contrast enhancement in previously high quality JPEG compressed image. However, it fails to determine the contrast enhancement in previously middle/low quality JPEG compressed image. Also, a separate algorithm is proposed to detect the local contrast enhancement in single source enhanced cut-and-paste forged images.

[4] M. C. Stamm and K. J. R. Liu proposed different methods not only for the detection of global and local contrast enhancement but also for identifying the use of histogram equalization and for the detection of the global inclusion of noise to an already JPEG-compressed image. The method proposed detects contrast enhancement in previously high quality JPEG compressed image. However, it fails to determine the contrast enhancement in previously middle/low quality JPEG compressed image. Also, a separate algorithm is proposed to detect the local contrast enhancement in single source enhanced cut-and-paste forged images but, fails to detect the same in both source enhanced cut-and-paste forged images.

[5] Fridrich et al. proposed Different approaches use different transformations for this task. Some of them are well-known operations such as the raw pixel values and Discrete Cosine Transform (DCT).
and heterogeneous link information into a unified generative process. The topic level influence propagation method further propagates the influence along the links in the entire network. they have done extensive experiments on different types of heterogeneous networks, show some interesting cases and demonstrate that using influence can benefit the prediction performance greatly.

III. SYSTEM MODEL

Following Figure. 1 is the detailed system architecture of Global Contrast Enhancement Detection for image imitation through the Copy-Move Forgery.

In Proposed System, First of all Image is given as an input. In Second stage, Histogram of an input is calculated and its respective Graphical representation is visualized. In next stage Contrast enhancement is detected using the peak/gap artifacts that appear in the digital images. But, In case of post processing operation such as JPEG compression, peak/gap artifacts get fails to detect the contrast enhancement in modified images.

Image enhancement is among the simplest and most appearing areas of digital image processing. Basically, the idea behind enhancement techniques is to bring out detail that is hidden, or simply to highlight certain features of interest in an image. A familiar example of enhancement is when we increase the contrast of an image because it looks better. It is very important to keep in mind that enhancement is very subjective area of image processing. The Principle objective of enhancement is to process an image so that the result is more suitable than the original image for a specific application.

The commonly used techniques for image enhancement are removal of noise, edge enhancement and contrast enhancement. Contrast enhancement is one of the most popular and important techniques for image enhancement.

In this technique, contrast of and image is improved to make the image better for human vision. One of the most common contrast enhancement methods is histogram equalization. The techniques which are widely used for image enhancement are global enhancement techniques and local enhancement techniques.

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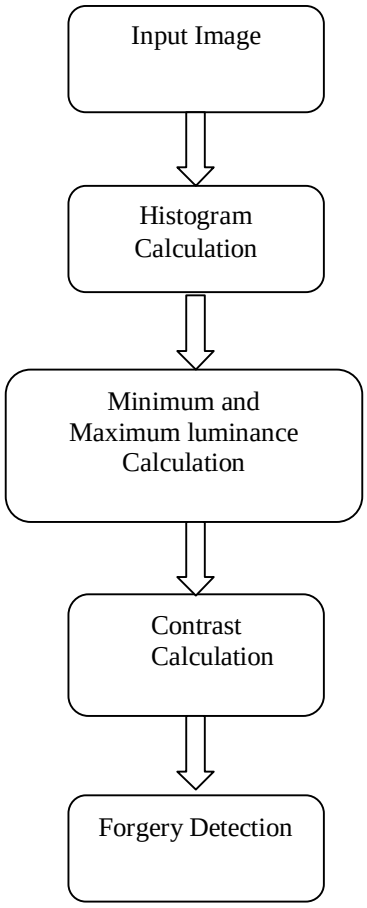

Figure1: Architecture Diagram Image of Forgery Detection

Global techniques are fast and simple, and are suitable for overall enhancement of the image. So, a new algorithm has been proposed to detect the contrast enhancement not only in uncompressed but also in JPEG compressed images.

IV. CONCLUSION

Copy-Move forgery in digital images is more prevalent during the past decades and this emphasizes the need for developing efficient algorithms that can efficiently handle these types of forgeries. Copy-Move forgery uses a part of an image to conceal another part of the same image. Taking advantage of similar texture characteristic in the same image, especially after some image processing, forged images are difficult to be identified visually. Compared with other forgery technologies, although it is very easy to manipulate, it also has its own shortage: correlation between copied part and pasted part. Based on such fact, we propose an effective and robust method based on feature matching to detect Copy-Move forgery in different kinds of digital images. The technique is used to detect manipulation within same source image and also from different source image for all types of Compressed and Uncompressed image.

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REFERENCES

[1] S. Bayram, I. Avcubas, B. Sankur, and N. Memon, "Image manipulation detection," J. Electron. Imag. vol. 15, no. 4, pp. 04110201–04110217,2006.
[2] M. Stamm and K. R. Liu, "Blind forensics of contrast enhancement in digital images," 15th IEEE International Conference on Image Processing, 2008. ICIP 2008, Oct. 2008, pp. 3112–3115.
[3] M. C. Stamm and K. J. R. Liu, "Forensic detection of image manipulation using statistical intrinsic fingerprints," IEEE Trans. Inf. Forensics Security, vol. 5, no. 3, pp. 492–506, Sep. 2010.
[4] M. C. Stamm and K. J. R. Liu, Forensic detection of image manipulation using statistical intrinsic fingerprints, IEEE Trans. Inf. Forensics Security, vol. 5, no. 3, pp. 492506, Sep. 2010.
[5] J. Fridrich, D. Soukal, and J. Lukas, Detection of copy-move forgery in digital images, in Digital Forensic Research Workshop (DFRWS),