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IMAGE ENHANCEMENT USING CROSS BILATERAL FILTER BASED ON PIXEL SIGNIFICANCE

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Abstract: Digital images are often used in several domains. Large amount of data is necessary to represent the digital images so the transmission and storage of such images are time- consuming and infeasible. Hence the information in the images is compressed by extracting only the visible elements. Normally the image compression technique can reduce the storage and transmission costs. During image compression, the size of a graphics file is reduced in bytes without disturbing the quality of the image beyond an acceptable level. Several methods such as Discrete Cosine Transform (DCT), DWT, etc. are used for compressing the images. But, these methods contain some blocking artifacts. In order to overcome this difficulty and to compress the image efficiently, a combination of DCT and fractal image compression techniques is proposed. DCT is employed to compress the color image while the fractal image compression is employed to evade the repetitive compressions of analogous blocks. Analogous blocks are found by using the Euclidean distance measure. Here, the given image is encoded by means of Huffman encoding technique. The implementation result shows the effectiveness of the proposed scheme in compressing the color image. Also, a comparative analysis is performed to prove that our system is competent to compress the images in terms of Peak Signal to Noise Ratio (PSNR), Structural Similarity Index (SSIM) and Universal Image Quality Index (UIQI) measurements. We introduce a new way to use fractal coding for image compression, based on the parallel use of a fractal encoder and a DCT encoder. The two encoders are given the complementary roles to capture the information of edge and smooth variation, and the information of detail respectively. We show the advantage of using this hybrid coding scheme over the use of a fractal encoder alone, or a DCT encoder alone. This coding scheme is also the occasion to demonstrate a new concept of coding by nonlinear feature separation based on regular and uniform algorithms, suitable for real-time VLSI implementation

INTRODUCTION

Changing the intensity values of pixels is a common way to improve images. Most image processing software tools provide several options for altering the appearance of an image by transforming the pixels with a single function that maps an input grey value to a new output value. It takes images of regions and applies a different mapping function to each one. Because it is common to stretch the grey values of an image that is too dark onto the full set of grey values available, remapping the grey values is often referred to as stretching. shows an image whose intensity values square measure stretched per four completely different mapping functions. the automated detection of Region of Interests (ROI) is a vigorous analysis space within the style of machine vision systems. Text embedded in pictures contains giant quantities of helpful linguistics data which might be accustomed totally perceive pictures. Text seems in pictures either within the style of documents like scanned CD/book covers or video pictures. Video text will loosely be classified into 2 categories: overlay text and scene text. Overlay text refers to those characters generated by graphic titling machines and superimposed on video frames/images, like video captions, whereas scene text happens naturally as a vicinity of scene, like text in data boards/signs, nameplates, food containers, etc. Automatic detection and\ extraction of text in pictures have been employed in several applications. Document text localization will be employed in the applications of page segmentation, document retrieving, address block location, etc. Content-based image/video classification is one amongst the standard applications of overlay text localization. Scene text extraction will be employed in mobile mechanism navigation to discover text-based landmarks, vehicle license detection/recognition, object identification, etc. resource for this analysis is provided by the Natural Sciences and Engineering analysis Council (NSERC), IRIS Precarn and also the University of Western Ontario. we have a tendency to ar trying into algorithms that may perform general purpose text localization. However, thanks to the variability of font size, style, orientation, alignment further because the complexness of the background, coming up with a strong general algorithmic rule, which may effectively discover and extract text from each sorts of pictures, is packed with challenges.

PURPOSE

"The concept of hiding information in other content has existed for centuries; the formal study of information hiding is called steganography." Steganography allows a sender to embed a hidden file or message inside a cover file. A cover file is simply a file that is used to embed hidden data into. This cover file may be a graphics image, an audio file (such as a WAV or MP3 file), or even a binary executable. Steganography is intended to take cryptography to the next level by attempting to prevent the impression of the existence of any sensitive data. Steganography's main goal is to avoid detection; to deny the existence of sensitive data inside the cover file. "In steganographic applications there are two levels of security. The first is not allowing an observer to detect the presence of a secret message. The other is not allowing the attacker to read the original plain message after detecting the presence of secret information."

OBJECTIVE AND SCOPE

The main objective of this work is to improve quality of the Stego image and provide security to the secret image by RSA encryption with bit shift method. The algorithm is The quality of the image is analyzed on the basis of PSNR and MSE values. The quality of the image must not be distorted after hiding the data in it so that the presence of the image is not recognized to human eye. For this to be achieved PSNR of the stego image to cover image must be high and the MSE must be low.

CONCLUSIONS

As steganography is concerned with security purpose and it is consider as a fascinating scientific area .The proposed algorithm pre processes the data before hiding it behind the cover image. The compression step involved in the algorithm reduces the size of text and thus allows more data to be hidden behind the same image. So, using compression more data can be hidden behind the same image. The skin area and the edge pixels are evaluated and secret data which is encrypted with RSA algorithm is embedded into specific area .As data is embedded in certain region rather than Digital images are much.

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