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Image Enhancement using Texture Synthesis

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Abstract: The main goal in image enhancement is to specify a images more bright therefore the image can be easily understood a pixel in an image and can be easily clarify. In image enhancement the texture synthesis can be used to filling the holes in an images and used to improve the image by using various application. Texture synthesis is the algorithmically process to constructing a large digital image from a small digital sample image. Image can be enhance by different techniques like histogram and different filters to enhancing an image. It can enhance by using contrast by and resolution feature.

Keywords: Photography, image processing, enhancement image by using texture.

I. INTRODUCTION

TEXTURE SYNTHESIS

Texture synthesis is the procedure of algorithmically designing a large digital image from a small digital sample image by holding benefit of its structural content. It can be used to fill in holes in images, create large non-repetitive background images and expand small pictures [9]. The images are of low contrast or are noisy. Therefore the image can be very tough to define a picture. these difficulties can be define as if we have an input low quality image and the output high quality image for particular applications can be improved. As we all know that image enhancement has used in many field like medical imaging, nature, photography. Main aim is to improve the image by different method like filter process, analysis, detection and recognition. Patch-based texture synthesis creates a new texture by copying and stitching in sum textures at different offsets. These algorithms set out to be more effective and faster than pixel-based texture synthesis methods. In digital image processing the images consists of photo elements called pixels and thesis photo pixel has its own color. Digital images are capable for transmitting the information. During last few years, researchers have `generated proven technology for enlarging images. The primary challenge was that directly expanding the digital image to create a blocky result. The digital image obtain only a small function is represents. Texture has been described by five different properties: coarseness, contrast, directional, line and roughness. Each digital image composed of a finite number of parts each of which has several place and value. These parts are referred to as picture elements, image element and pixel.

• The texture in the input image is distorted by the perspective view.
• The surface is the example may have a one sided outline as occluded areas need to be ignored. In other words, the pixels is set on which we have main information is sparse.
• The texture gives a different detail in different parts of the image. A good example of this is a wall photograph.
• We have no explanation knowledge of the surface geometry. We need to define pixel neighbourhoods in order to perform efficient image of texture. [8]

A reversible steganography algorithm using synthesis of texture. It given an original tool of texture, our scheme can produce a large stego synthetic texture concealing ulterior messages. The steganography into a patch-based conventional texture synthesis provides reversibility to give the original tool texture to the stego synthetic textures, creating possible a second round of texture synthesis if needed. By using the two techniques we have process, our algorithm can produce visually plausible stego synthetic textures. If the given ulterior messages consisting of bit zero or one have an uneven appearance of Probabilities.[2].In texture synthesis first read the image.To create a texture use wiener to create a texture image. The value will depend on the quantity of gray levels present in the image. The function filter returns an array where each output pixel contains the pixel value of the neighborhood around the pixel in the input image formed a point-spread function

- Point spread function corresponding to the motion which is linear across 31 pixels, at a given angle of 11 degrees (THETA=11).
- To clear the blur image filter can be used..
- The Wiener restoration filter is equivalent to an inverse filter. This filter can be very sensitive to noise in the given input image, as the next image shows.
- Use noise is equal to 0.0009.

The noise was amplified by the inverse filter to such that the image shape is visible. The algorithm of inverse filter, comeback deblurred image. Image can be a number of dimensional array. Point-spread function (PSF) with which was convolved. NSR is the ratio of the additive noise. NSR can be a spectral-domain array of the same size as Specifying zero for the NSR is equivalent to creating an ideal inverse filter.

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Figure1.1

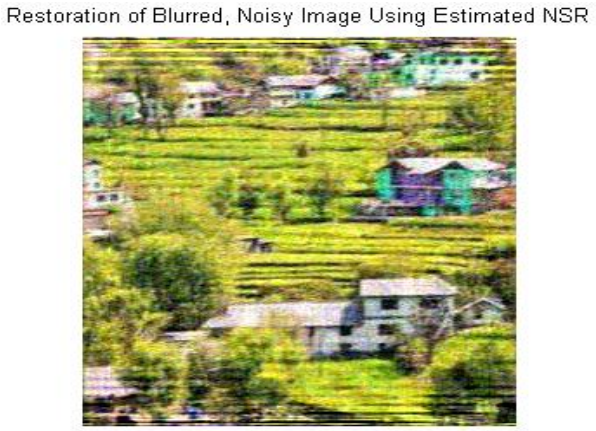

Figure1.2

Weiner deconvolution filter uses the ratio of power in the noise to the power contain in the signal. The noise to signal is the power ratio that could be an array or a scalar of the equal size as image. The noise was amplified by the inverse filter to such that the image shape is visible. The Wiener filter algorithm, returning deblurred image. Image can be an N-dimensional array. PSF is the point-spread function with which was convolved. NSR is the power ratio which can added a noise. NSR can be a spectral-domain array of the same size as Specifying 0 for the noise to signal ratio is equivalent to creating an inverse filter which is ideal in nature. Weiner deconvolution filter uses the ratio of power contained in the noise to the power in the signal.

Where NSR is the noise-to-signal power ratio. NSR could be a scalar or an array of the same size as image. The images are sheeted with the texture, perspective and scene geometry introduce distortions, and the texture is not uniform sampled during the catch process. This cracks many of the conclusion used for synthesis. In photograph the process of pixel to pixel in form of synthesized texture, by picking existing pixels with similar neighbor hoods in a irregular fashion. The performance of the algorithm well but it is very slow because the filling the image texture being done pixel by pixel. The texture syntheses based in painting perform well in approximating textures.

II. DEFRENT TECNIQUE

Special domain and frequency domain

In image enhancement different image enhancement method like special domain and frequency domain method but the more emphasis is given on spatial domain method. By put all these methods, the original images give a perfect resulted into enhanced, reduced noise images and in another form to remove image from the original image. Using these methods, the digression can be eliminated from the image. Some usually requisition of negative image are in medical images as it enhances white areas that are suppressed by black regions.[2] In this paper image is enhance by wiener filter process. The 0.0009 noise to be used to find a texture of image by using a given blurred image.

The listed below in the given are given the different techniques to enhance the image:

Techniques
Special domain
Frequency domain

Spatial domain enhancement techniques or methods.

- Spatial domain methods are conduct the image itself and are based on the pixels of an image.
- The method can be formulated as q(n,m) = y[f(n,m)], where q is the output, f is the input image and y is an method on f defined over some neighbourhood of (n,m).
- According to the operations on the image pixels, it can be further divided in two categories: Point method and spatial method (including linear and non-linear methods).

Frequency domain enhancement methods or techniques:

- These technique enhance an image f(n,m) by convoluting the image with a linear, position invariant ways.
- The two dimensional convolution is implement in frequency domain with DFT.

Frequency domain methods are usually performed for the influence of the image of the orthogonal transform by preference than the image itself .According to the non-identical frequency contents, non-identical frequency domain techniques are applied for the processing of the image. The main idea behind the frequency domain method for image enhancement is of creating a 2-Dimensional discrete unitary transform of an image.

Image enhancement method are divided into spatial domain and frequency domain. It is decided that the frequency domain method are better than the spatial domain method. There is different image enhancement techniques is given on spatial domain method. After studied techniques, the original images are fine resulted into enhanced and to reduced noise images and other hindrances are also removed by give a original image.

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Using these method, the mortification can be eliminated by the image. Some certain applications of negative image are in medical images as it enhances white areas that are suppressed by black regions.

The problem of increasing contrast of images and spans a wide range of applications, ranging from better visual quality of photographs find with poor illumination. Taking a picture in an excessively bright environment gives the captured image low contrasted. To enhance image contrast, Histogram Modification is used to recognize as the ancestor of plentiful contrast enhancement algorithms. This HM approach find that the histogram of the image and assigns a broader range of gray values to these gray levels with larger counts.

The histogram modification problem can be achieved as follows, to compute a transformation function T, if PSF of the input image and PSF of the desired image are given, to modify gray values of the input image find the PSF. The first step in this process is to select the given PDF for a given image form a function which both of image and the task at hand. For example, the most ordinary histogram technique, histogram equalization tends to reconstruct the gray levels in such a way that there is a uniform construct of gray levels in the output range. The given histogram is less skewed toward the low gray values, it is not equally distributed due to the small number of gray levels (256 levels) available in this image. The number of possible gray levels, i.e. pixel depth, the modified histogram tends more toward flat shape, increases, [8].

IV. CONCLUSION

It can be concluded from the results shown in the previous chapter that the solution to the texture synthesis by photography image texture management is a good solution. Moreover, the given system is even more accurate than the previous system. The accuracy of the proposed system is analysed to be 98%. The median entropy filter has done a good job in image enhancement. Accurate edge detection is a trivial part of successful implementation of technique. As depicted by the results, it can be said that, the noise was amplified by the inverse filter to such that the image shape is visible. The Wiener filter algorithm, returning deblurred image. Image can be an N-dimensional array. PSF is the point-spread function with which was convolved. NSR is the noise-to-signal power ratio of the additive Noise. Due to this find a clear image for a given previous image

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REFERENCES

[1] Varun Kumar C and Malathy V "Image Processing Based Wound Assessment System for Patients with Diabetes Using Six Classification Algorithms" International conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) 2016.

[2] Supreet Kaur*, Jasmeen Kaur" Review of Image Enhancement Techniques for Digital Images" International Journal of Advanced Research in Computer Science and Software Engineering in 2016.

[3] Kuo-Chen Wu and Chung-Ming Wang Steganography Using Reversible Texture Synthesis" IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 24, NO. 1, JANUARY 2015".

[4] Varun Kumar C and Malathy V Image Processing Based for removing large objects from digital photographs in" International conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) [2013].

[5] Ankit Shah1, Parth Bhatt2, Prof. Kirit J. Modi Image Enhancement Techniques by Texture Synthesis "International Journal of Emerging Technology and Advanced Engineering, Volume 2, Issue 1, January 2012.

[6] V. Janarthanan and G. Jananii,,using modified directional median filter in digital image in 2012.

[7] K. Sangeetha, Dr. P. Sengottuvelan, E. Balamurugan. combining structure in painting method and texture synthesis technique in a decomposition framework in 2011.

[8] K. Arulmozhi1, S. Arumuga Perumal2, K. Kannan3, S. Bharathi4, Contrast Improvement of Radiographic Images in Spatial Domain by Edge Preserving Filters "IJCSNS International Journal of Computer Science and Network Security, VOL.10 No.2, February 2010.

[9] C. Eisenacher1,2 and S. Lefebvre 2 and M. Stamminger 1 Texture Synthesis From Photographs "EUROGRAPHICS 2008 / G. Drettakis and R. Scopigno Volume 27 in 2008.

[10] Buckley K.M, Adelson L.K. and Agazio J.G., 'Reducing the risks of wound consultation: Adding digital images to verbal reports', Woun Ostomy Continence Nurs 2009.

[11] Rees R.S. and Bashshur N. (2007), 'The effects of Tele wound management on use of service and financial outcomes', Telemed. J. E.Health, vol.13, No.6, pp.663-674.