A Novel Method for Different Noise Image Format by Restoring the Images from Image Processing

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Abstract— A good efficient method of high resolution image tone mapping is proposed here, filter is proposed for edge-preserving decomposition of an image. Compare to other filter it is different from previous filters in its locally adaptive property. The filtered image contains local means everywhere and preserves local salient edges. Comparisons are made between our filtered result and the results of three other methods. A detailed analysis is also made on the behavior of the filter. Multi scale decomposition with this filter is proposed for manipulating a high dynamic range image; the multi scale decomposition with the filter addresses four assumptions: every scale's salient edges are relatively large gradients in a local window; and all of the nonzero gradient information belongs to the detail layer. An effective function is also proposed for compressing the detail layers. The reproduced image gives a good visualization. Experimental results on real images demonstrate that our algorithm is especially effective at preserving or enhancing local details.

Index Terms— filter, image processing, image tone mapping, multi scale decomposition.

1 INTRODUCTION

Image processing is computer imaging where application involves a human being in the visual loop. In other words the image is to be examined and acted upon by people. The major topics within the field of image processing include:
1. Image restoration.
2. Image enhancement.
3. Image compression..
* Vision allows humans to perceive and understand the world surrounding us.
* Computer vision aims to duplicate the effect of human vision by electronically perceiving and understanding an image.
* Giving computers the ability to see is not an easy task - we live in a three dimensional (3D) world, and when computers try to analyze objects in 3D space, available visual sensors (e.g., TV cameras) usually give two dimensional (2D) images, and this projection to a lower number of dimensions incurs an enormous loss of information.

ABOUT MEDICINAL PLANTS

Use of plants as a source of medicine has been an ancient practice and is an important component of the health care system in India. In the Indian systems of medicine, most practitioners formulate and dispense their own recipes; hence this requires proper documentation and research. In west also the use of herbal medicines is growing with approximately 40 per cent of population reporting use of herb to treat medical diseases within the past year. General Public, academic and government interest in traditional medicines is growing rapidly due to the increase side effects of the adverse drug reactions and cost factor of the modern system of medicine.

Ayurvedic form of medicine is believed to be existent in India for thousands of years. It employs various techniques and things to provide healing or relief to the ailing patients. One of the things that ayurveda uses is medications of plant origin.

II.RELATED WORK

In [1] a review article on today, advancement in microelectronic technologies, high definition displays (HD), high quality digital imaging systems redefining our world of vision. Microsoft and HP developed RGB color space which covers approximately 35% of CIE color gamut to communicate well via different displays, digital imaging systems, internet etc. Subsequently Color Match RGB, Adobe RGB, Apple RGB, wide gamut RGBs etc. had evolved to meet technical and professional need. Commonly used imaging systems use a three band color encoding scheme or triplets to represent human visual system. The Red Green Blue (RGB) response highly dependent on the optical filters or sensors characteristics, lighting environment and many a parameters of image capturing devices. Until now their device independent standardization, theoretical conversion error, colorimetric characterization by empirical modeling, validations and most importantly reproducibility provide only mediocre colorimetric accuracy.

In [2] a study of this paper proposes a two-phase scheme for removing salt-and-pepper impulse noise. In the first phase, an

adaptive median filter is used to identify pixels which are likely to be contaminated by noise (noise candidates). In the second phase, the image is restored using a specialized regularization method that applies only to those selected noise candidates. In terms of edge preservation and noise suppression, our restored images show a significant improvement compared to those restored by using just nonlinear filters or regularization methods only. Our scheme can remove salt-and-pepper-noise with a noise level as high as 90%.

In [3] a study of noise suppression from images is one of the most important concerns in digital image processing. Impulsive noise is one such noise, which may corrupt images during their acquisition or transmission or storage etc. Removing noise from any processed image is very important noise should be removed in such a way that important information of image should be preserved. For removing salt and pepper noise from corrupted image we are using so many algorithms. In this paper we propose two phase scheme for removing salt and pepper noise and edge preservation; in the first phase Adaptive median filter is used to detect corrupted pixel and preserving the edges. In the second phase Non-Local Means algorithm is used in order to have better quality of reconstitution. The proposed algorithm works well in removing salt and pepper noise at high density and preserving edges smoothly and fine detail of image compare to others. Obtained results show that the implementation of this proposal gives considerable noise suppression, even with high noise densities.

PROBLEM SPECIFICATION

The main objectives of the present study is to make a detailed analysis of the Indian Medicinal leaves in particular Betel Leaf by using the techniques of image processing methodologies .One sample taken and the experiments are conducted.

III METHODOLOGY

The main goal of preprocessing is to identify the leaf in an image and discarding all other information other than the leaf shape.

In Order to make detailed analysis of the Betel Leaf and also to predict the RGB color combination and performed using ImageJ 1.48 version tool.

True Color or RGB: Each pixel has a particular color; that color is described by the amount of red, green and blue in it. If each of these components has a range 0–255, this gives a total of 256 different possible colors. Such an image is a "stack" of three matrices; representing the red, green and blue values for each pixel. This means that for every pixel there correspond 3 values.

ALGORITHM

Step 1: Read the image

Step 2: Taking different image format pictures.

Step 3: Set the measurement for each RGB images

Step 4: Convert the RGB pixels to 255 bit

Step 5: Apply the noise for different image

Step 6: Apply the salt and pepper to noise

Step 7: Results for converting the different pixels can Be found for the image

IV.EXPERIMENTS AND RESULTS

The experiments are conducted on the data using ImageJ 1.48 version. The results are presented from Table 1 to Table 4 and also Figure1a to Figure 4b.

Table 1

Methods. BMP	Smooth	Sharpen	Mean	Std Dev	Int. Density	Raw Density
Existing Method	0.029	0.059	211.7	59.3	12707782	12707782
Proposed Methods	0.021	0.38	207.7	66.831	124666	12466634

Table 2

Methods. GIF	Smooth	Sharpen	Mean	Std Dev	Int. Density	Raw Density
Existing Method	0.015	0.018	210.8	58.34	12648603	12648608
Proposed Methods	0.015	0.019	211.7	62.046	2184285	2184285

Table 3

Methods. JPEG	Smooth	Sharpen	Mean	Std Dev	Int. Density	Raw Density
Existing Method	0.109	0.014	143.539	85.64	193478	193478
Proposed Methods	0.108	0.013	211.7	62.046	2184285	2184285

Table 4

Methods. PNG	Smooth	Shar-pen	Mean	Std Dev	Int. Density	Raw Density
Existing Method	0.013	0.012	145.539	85.64	203478	203478
Proposed Methods	0.015	0.013	155.7	62.046	2184285	2184285

Normal betel leaf.BMP

Figure 1a
Salt and Pepper.BMP

Figure 1b
Normal betel leaf.GIF

Figure 2a

Salt and Pepper.GIF

Figure 2b

Normal betel leaf.JPEG

Figure 3a

Salt and Pepper.JPEG

Figure 3b

Normal betel leaf.PNG

Figure 4a

Salt and Pepper.PNG

Figure 4b

Salt-and-pepper noise is a form of noise sometimes seen on images. It presents itself as sparsely occurring white and black pixels. An effective noise reduction method for this type of noise is a median filter or a morphological filter.

Salt-and-Pepper Noise The purpose of this challenge is to illustrate that spectral filtering method may not always be successful when the noise in the image is highly non-Gaussian. We consider salt-and-pepper noise, for which a certain amount of the pixels in the image are either black or white (hence the name of the noise). Salt-and-pepper noise can, e.g., be used to model defects in the CCD or in the transmission of the image.

V CONCLUSION

The recent effective algorithms the results are compared. The process is very efficient for its linear asymptotic time complexity of the image size. We have arbitrarily assumed a linear function between the input and the filtered output in a local window in the filter designing, and then averaged all the out-

put values globally. The linear operations may be a cause of artifacts in results, since they may unsuitably reduce the gradients. It can be seen from that the details near an edge are preserved, which should be smoothed. This may be another source of artifacts near edges. A nonlinear function may be a prospect for avoiding these disadvantages.

The different results shows that our algorithm is good at compressing the high dynamic range while preserving local tiny details and the global view is appealing.

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REFERENCES

[1] Asimananda Khandual, George Baciu,Nibedita Rout "Colorimetric Processing of Digital Color Image!",International Journal of Advanced Research in Computer Science and Software Engineering, Volume 3, Issue 7,July 2013 ISSN: 2277 128X

[2] Raymond H. Chan, Chung-Wa Ho, and Mila Nikolova "Salt-and-Pepper Noise Removal by Median-Type Noise Detectors and Detail-Preserving Regularization",IEEE transactions on Image Processing, Volume l. 14, no. 10, October 2005 PP:1479-1485.

[3] Mohd Dilshad Ansari, Garima Singh. Arjun Singh, Ashwani Kumar, " An Efficient Salt and Pepper noise Removal and Edge preserving Scheme for Image Restoration", Mohd Dilshad Ansari et al, Int.J.Computer Technology & Applications, Volume 3 (5), 1848-1854, ISSN: 2229-6093,

[4] R. C. Gonzalez, R. E. Woods, "Digital Image Processing", Prentice Hall.