

Study of Binary Image and Rectifying Results from Grey Scale Images in Image processing

Vijay Kumar Meena

Lecturer (Computer Science & Engg.)

Rajesh Pilot Govt. Polytechnic College, Dausa (Raj.)

vijaymeena57@rediffmail.com

Abstract: - Image is made by number of pixels, each pixels assigns a single analog value these value creates an image. If image is converted into a digital signal each analog pixel will convert into a digital binary form and this type of an image is known as a binary image. Image possesses different major parameters like color and monochrome (sometimes also known as black & white image or property). Image is processed and executed by an image processing techniques. So image processing is the major part of signal processing. Gray scale conversion is also a vital part of image processing. RGB or color information has a 3 dimensional property which makes signal processing so much bulky and heavy to remove this drawbacks gray scale conversion is necessary. So in this paper we will discuss about binary images and how they are used in image processing.

Keywords: Image Processing, Binary Image, Monochrome, Image, Matlab.

I. INTRODUCTION

We know that the image is a visual representation of any object or we can say that the image or picture is created, copied and stored in a electronics form. Mathematically image is the form of two dimensional signal define by $f(x,y)$. Where f is the intensity property like brightness and contrast.

Color information is made by RGB color format. Human has an ability to describe any type of colors and also identify colors but machine has no capacity to do those things like humans. In Digital image processing we not only process the analog signal but also a digital signal like medical applications, aviation system and complex images of satellites. So we need that type of system who can identify the gray scale information and then convert into a digital form. A binary image is a digital image that has only two possible values for each pixel. Typically the two colors used for a binary image are black and white though any two colors can be used.

The color used for the object(s) in the image is the foreground color while the rest of the image is the background color and Image Binarization is a fundamental research theme in image processing and an important preprocessing method in image recognition and edge/boundary detection. It is very difficult to select the corresponding threshold for each image in different application domains. [3].

Image is made by number of pixels, each pixels assigns a single analog value these value creates an image. If image is converted into a digital signal each analog pixel will convert into a digital binary form and this type of an image is known as a binary image.

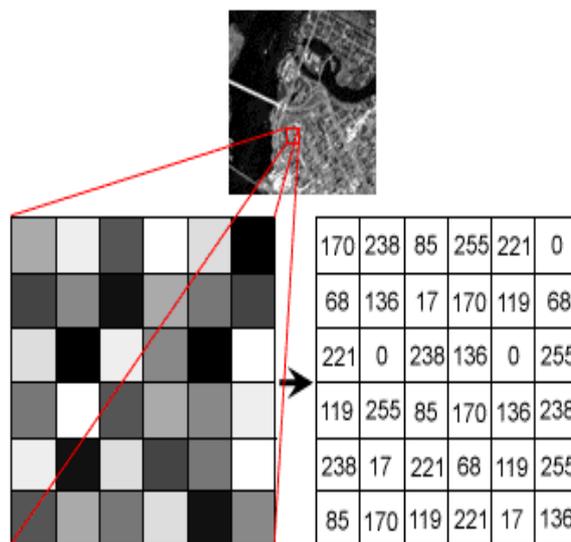


Fig. 1 Image with analog pixel values

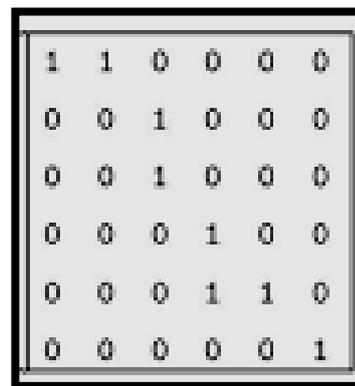


Fig.2 Image with Digit pixels value of fig.1

II. LITERATURE REVIEW

In2010, Tarun Kumar, Karun Kumar proposed system

The use of color in image processing is motivated by two principal factors; First color is a powerful descriptor that often simplifies object identification and extraction from a scene. Second, human can discern thousands of color shades and intensities, compared to about only two dozen shades of gray. In RGB model, each color appears in its primary spectral components of red, green and blue. This model is based on Cartesian coordinate system. Images represented in RGB color model consist of three component images. One for each primary, when fed into an RGB monitor, these three images combines on the phosphor screen to produce a composite color image. The number of bits used to represent each pixel in RGB space is called the pixel depth. Consider an RGB image in which each of the red, green and blue images is an 8-bit image. Under these conditions each RGB color pixel is said to have a depth of 24 bit. MATLAB 7.0 2007b was used for the implementation of all results.

III. PROPOSED TECHNIQUE

In this technique we proposed a system; we know that the Image is made by number of pixels and different major parameters like color and monochrome (sometimes also known as black & white image or property). Image is processed and executed by an image processing techniques. So image processing is the major part of signal processing. Gray scale conversion is also a vital part of image processing. RGB or color information has a 3 dimensional property which makes signal processing so much bulky and heavy to remove this drawbacks gray scale conversion is necessary.

Grayscale images are the those images where color information is missing and all color information is converted into gray scale format.

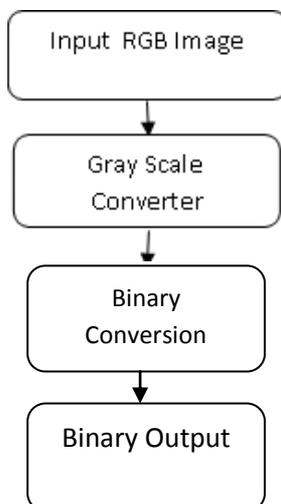


Fig: Gray Scale image converter

Grayscale images are distinct from one-bit bi-tonal black-and-white images, which in the context of computer imaging are images with only the two colors, black, and white .Grayscale images have many shades of gray in between. Image is made by number of pixels, each pixels assigns a single analog value these value creates an image. If image is converted into a digital signal each analog pixel will convert into a digital binary form and this type of an image is known as a binary image.

After grayscale conversion image is converted into binary form where each pixels of an image is assigned into a 0 and 1 binary form. Matlab supports large amount of image formats i.e jpg, tif, bitmap, png, gif etc.



(a) original Image



(b) Gray Scale Image

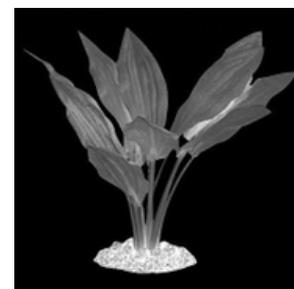


Fig.3 Conversion of RGB to Binary image



(a) original Image



(b) Gray Scale Image



(c) Conversion of Gray scale image to Binary

Fig.4 RGB to Binary Conversion

IV. MATLAB CODES FOR GRAY SCALE CONVERSION

```
I = rgb2gray(RGB);  
gray = rgb2gray(map);  
binary = im2bw(gray);  
imshow(binary);
```

V. CONCLUSION

In this paper we have discussed about the binary images. Image is made by number of pixels, each pixels assigns a single analog value these value creates an image. If image is converted into a digital signal each analog pixel will convert into a digital binary form and this type of an image is known as a binary image. Image is made by number of pixels and different major parameters like color and monochrome (sometimes also known as black & white image or property). Image is processed and executed by an image processing techniques. So image processing is the major part of signal processing. Gray scale conversion is also a vital

part of image processing. RGB or color information has a 3 dimensional property which makes signal processing so much bulky and heavy to remove this drawbacks gray scale conversion is necessary. Using these above written technique we can able to convert any color image into digital image.

References

- [1] **Tarun Kumar, Karun Kumar** "A Theory Based on Conversion of RGB image to Gray image"2010
- [2] MATLAB and Simulink for Technical Computing, URL: <http://www.mathworks.com>, July 2010.
- [3] Wikipedia.com