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IMAGE ANALYSIS EXRTACTING FACE AND EYES

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ABSTRACT

Main aim of Image processing project is to modify images. Using this extracted information of the image we modify the images in the terms of increasing and decreasing the properties of the images like Gama, threshold values description, interpretation and understanding of the scene can be provided by the machine. The main is to use filters, modifiers, Adjusting Brightness, Image Properties, Adjusting Contrast, Gamma Correction, Cropping, Spatial Transformation, Color Management, Filtering in an image. The library has an overwhelming amount of functionality. The current version of library exposes a decent chunk of it, but being a first release, documentation is still sparse. Main point of image processing is to modify images into desired manner. This system allows users to take hard copy of the image using printer routines and provides option for users to store file into disk in different formats. In other words, image processing is called as altering and analyzing pictorial information of images. In our daily life we come across different type of image processing best example of image processing in our daily life is our brain sensing lot of images when we see images with eyes and processing is done is very less time.

1 INTRODUCTION

An image may be defined as a two-dimensional function, f (x, y), where x and y are spatial (plane) coordinates, and the amplitude off at any pair of coordinates (x, y) is called the intensity or gray level of the image at that point. When x, y, and the amplitude values of f are all finite, discrete quantities, we call the image a digital image. The field of digital image processing refers to processing digital images by means of a digital computer. Note that a digital image is composed of a finite number of elements, each of which has a particular location and value. These elements are referred to as picture elements, image elements, pels, and pixels. Pixel is the term most widely used to denote the elements of a digital image. Vision is the most advanced of our senses, so it is not surprising that images play the single most

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important role in human perception. However, unlike humans, who are limited to the visual band of the electromagnetic (EM) spectrum, imaging machines cover almost the entire EM spectrum, ranging from gamma to radio waves. They can operate on images generated by sources that humans are not accustomed to associating with images. These include ultrasound, electron microscopy, and computer-generated images. Thus, digital image processing encompasses a wide and varied field of applications.

With the increase of computer processing power, people use computer processing objects to slowly shift from characters to images. According to statistics, today's information, especially Internet information, transmits and stores more than 80% of the information. Compared with the information of the character type, the image information is much more complicated, so it is more complicated to process the characters on the computer than the image processing. Therefore, in order to make the use of image information safer and more convenient, it is particularly important to carry out related application research on image digital media. Digital media image processing technology mainly includes denoising, encryption, compression, storage, and many other aspects.

The purpose of image denoising is to remove the noise of the natural frequency in the image to achieve the characteristics of highlighting the meaning of the image itself. Because of the image acquisition, processing, etc., they will damage the original signal of the image. Noise is an important factor that interferes with the clarity of an image. This source of noise is varied and is mainly derived from the transmission process and the quantization process. According to the relationship between noise and signal, noise can be divided into additive noise, multiplicative noise, and quantization noise. In image noise removal, commonly used methods include a mean filter method, an adaptive Wiener filter method, a median filter, and a wavelet transform method. For example, the image denoising method performed by the neighborhood averaging method used in the literature [1,2,3] is a mean filtering method which is suitable for removing particle noise in an image obtained by scanning. The neighborhood averaging method strongly suppresses the noise and also causes the ambiguity due to the averaging. The degree of ambiguity is proportional to the radius of the field. The

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Wiener filter adjusts the output of the filter based on the local variance of the image. The Wiener filter has the best filtering effect on images with white noise. For example, in the literature [4, 5], this method is used for image denoising, and good denoising results are obtained. Median filtering is a commonly used nonlinear smoothing filter that is very effective in filtering out the salt and pepper noise of an image. The median filter can both remove noise and protect the edges of the image for a satisfactory recovery. In the actual operation process, the statistical characteristics of the image are not needed, which brings a lot of convenience. For example, the literature [6,7,8] is a successful case of image denoising using median filtering. Wavelet analysis is to denoise the image by using the wavelet's layering coefficient, so the image details can be well preserved, such as the literature [9, 10].

2 RELATED WORK

The first stage that we can think of in all stage of image processing and analysis is image binarization (i.e. to make binary image, the image should contain any two pixel values either 0 or 1 in contrast with gray images which can contains 255 pixel values for 8 bit image) which poses as one of the serious problem in applications like machine vision, pattern recognition, target tracking and image segmentation where the gray level information is required to reduce to bi-level information.

In order to extract the useful information from an image it needs to be divided into distinct components like foreground (where pixel value is '1') and background (where pixel value is '0') objects for further analysis where most often the gray level pixels of foreground components are quite different from that of background and in this context a very crucial and significant technique available in literature known as thresholding is applied which is the process of partitioning pixels in the images into object and background classes based upon the relationship between the gray level value of a pixel and the significant parameter threshold to separate the object from the background, finding the correct value of which to separate an image into desirable foreground and background remains a very crucial step in image processing domain [2]. Because of its efficient performance and simplicity in theory, thresholding

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techniques have been studied extensively and many thresholding methods have been published so far [4].

A dedicated custom hardware on FPGA can process image in real time with fairly lower processing cost and power compared to software. Field Programmable Gate Arrays (FPGAs) can be used to speed up image processing applications. An application implemented on an FPGA can be one to two orders of magnitude faster than the same application implemented in software where parallel computation of hardware should be one of the important merits of hardware platform.

In this paper we have designed and implemented an adaptive thresholding as a function of the image pixel intensities. Finding an optimal threshold value leading to an effective binarized image requires skill as the choice of the method must be done judiciously. After an initial pre-processing of the image the thresholding has been applied where the threshold value is dependent on the nature of the image which becomes a very dominant factor at the end.

In this paper we have designed and implemented an adaptive thresholding as a function of the image pixel intensities. Finding an optimal threshold value leading to an effective binarized image requires skill as the choice of the method must be done judiciously. After an initial pre-processing of the image the thresholding has been applied where the threshold value is dependent on the nature of the image which becomes a very dominant factor at the extracting as a result of segmentation. Secondly paper [8] shows only behavioral simulation and left the hardware implementation part as a future scope whereas we are successfully overcoming both the above issues.

3 METHODOLOGIES

Problem Analysis

The image source is a digital image from a camera equipped cell phone. The image is of VGA resolution (640 × 480) and provided as a compressed 8-bit RGB JPEG file. The compression ratio is approximately 18:1. This resolution is comparatively low but it is of course definately adequate to sample and extract the data from the markers under the right conditions. Of more importance are the conditions under which the

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image is obtained. Specifically, the camera is most likely to be handheld, leading to a degree of motion blur, and to be positioned somewhat haphazardly, leading to arbitrary transformations in angle, translation and perspective. Retrieval of a query image from a large image archive is an important application in image processing. The advent of large multimedia collection and digital libraries has led to an important requirement for development of search tools for indexing and retrieving information from them. A number of good search engines are available today for retrieving the text in machine readable form, but there are not many fast tools to retrieve intensity and color images. The traditional approaches to searching and indexing images are slow and expensive. Thus there is urgent need for development of algorithms for retrieving the image using the embedded content in them.

Detection of Method:

The development of the algorithm is based on the idea that the guide bar pair is the key element that can be used to identify marker candidates in an image. Once potential guide bar pairs are identified the incorrect candidates can be filtered out by looking at other characteristics of the marker. This primarily includes finding the three corner guide elements in sensible locations relative to the guide bar pair. In addition, for any marker that is sampled the correct guide 'data' can be compared against what is expected to further remove false positives.

Automatic Visual Inspection System Automated visual inspection systems are essential to improve the productivity and the quality of the product in manufacturing and allied industries [2]. We briefly present few visual inspection systems here. • Automatic inspection of incandescent lamp filaments: An interesting application of automatic visual inspection involves inspection of the bulb manufacturing process. Often the filament of the bulbs get fused after short duration due to erroneous geometry **Evaluation the Images:**

Process the image in order to correct them with the processing techniques and make image better than the previous versions.

Let us go through the Index Terms used in Image Processing. a.)

Image Restoration.

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b.) Color Image Processing:

c.) Wavelets:

d.) Compression:

e.) Morphological Processing:

f.) Image Segmentation:

Edge Detection Algorithm

The local intensity of the target in the image represents that the edge detection method, background area, etc. change greatly. It serves as a basis for image analysis, such as image fragmentation and texture characteristics. The first step is edge detection, which is by the sharpness strength of continuity. The image intensity sequence can be divided as follows. The grayscale pixel value of the image link is different, and the image intensity returns to the starting point after maintaining a small change. The images obtained using various detection methods have a high edge detection effect and can suppress noise. Image processing methods usually use general edge detection methods. Is by the sharpness strength of continuity. The image intensity sequence can be divided as follows. The grayscale pixel value of the image link is different, and the image intensity returns to the starting point after maintaining a small change. The images obtained using various detection methods have a high edge detection effect and can suppress noise. Image processing methods usually use general edge detection methods.

4.RESULTS

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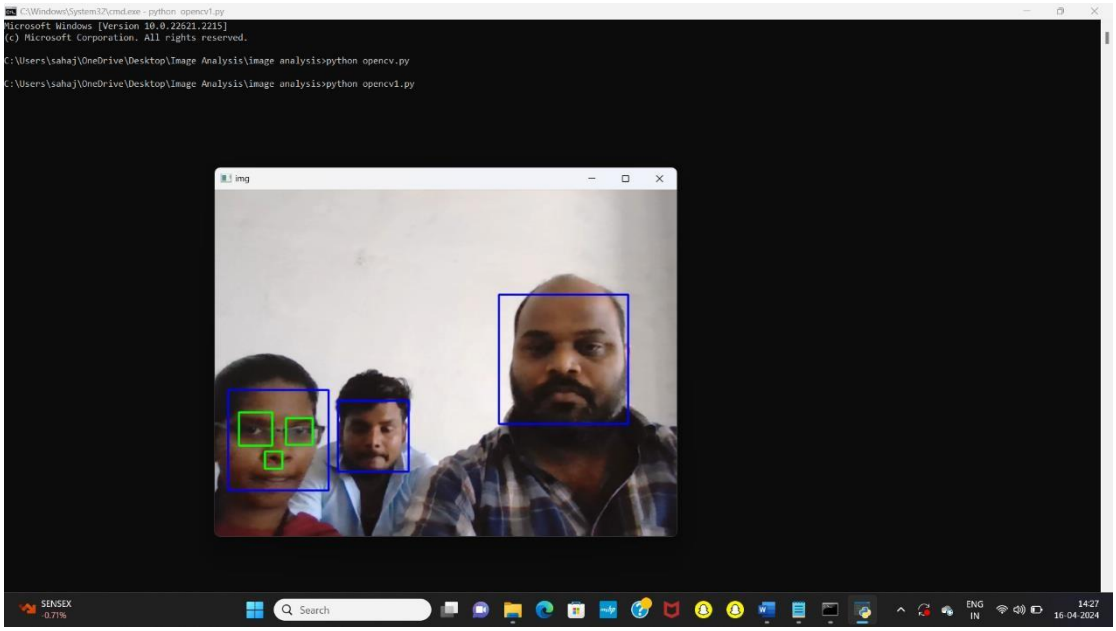

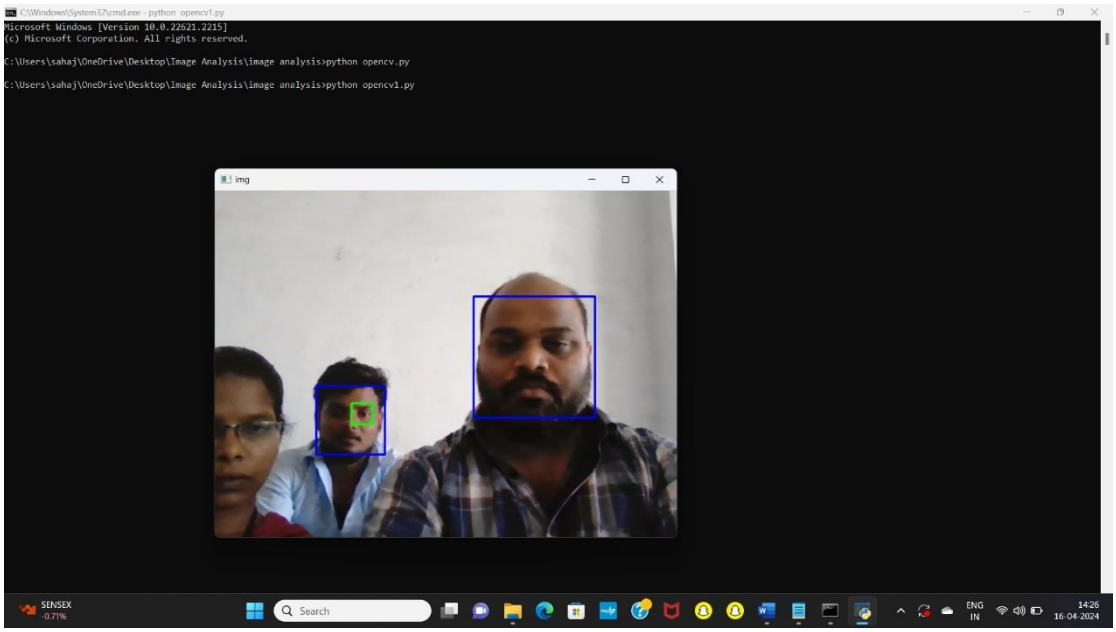

5 CONCLUSION

Here throughout this paper we briefly discussed the work that has been carried out on image processing domain particularly by emphasizing its implementation on hardware

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device and also transmission of image data through a secured way. This paper will encourage the further initiatives to be taken for implementation of work in such domain.

In the paper the time complexity of the whole thresholding method and limitation of image data to be stored in the FPGA board are few limitation that has to be taken care, we stared working on basic filtering mechanism, digital image water marking and some other issues related to image security and in near future we could propose some innovative idea related.

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