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Design of High Secure Image Encoding Using Manchester

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ABSTRACT—The research community in the last few years from the field of approximate computing has received significant attention, particularly in the context of different signal processing. Image and video compression algorithms such as JPEG, MPEG and so on, which can be exploited to realize highly power-efficient implementations of these algorithms. However, existing approximate architectures typically fix the level of hardware approximations statically and are not adaptive to input data. This project addresses this issue by proposing a reconfigurable approximate for MPEG encoders that optimizes power consumption with the aim of maintaining a particular peak signal-to-noise ratio threshold for any video. I design reconfigurable adder/ subtract blocks, and subsequently integrate these blocks in the different levels all the video in to images these images are convert to digital form and then compress the image.

INTRODUCTION

Introducing a limited amount of computingimprecision in image and video processing algorithmsoften results in a negligible amount of perceptible visual change in the output, which makes these algorithms asideal candidates for the use of approximate computingarchitectures. Approximate Computing architectures exploit the fact that a small relaxation in output correctness can resultin significantly simpler and lower power implementations.However, most approximate hardware architectures proposedso far suffer from the limitation that, for widely varyinginput parameters, it becomes very hard to provide a qualitybound on the output, and in some cases, the output qualitymay be severely degraded. The main reason for this outputquality fluctuation is that the degree of approximation (DA)in the hardware architecture is fixed statically and cannotbe customized for different inputs. One possible remedyis to adopt a conservative approach and use a very lowDA in the hardware so that the output accuracy is notdrastically affected. However, such a conservative approachwill, as expected, drastically impact the power savings aswell.

FM0 Encoder andManchester Encoder

The literature [4] proposes VLSI architecture ofManchester encoder for optical communications. The literature [6] develops a high-speedVLSI architecture almost fully reused with Manchester andMiller encodings for radio frequency identification (RFID)applications. The literature [7] also proposes a Manchester encoding architecturefor the finite statemachine (FSM) of Manchester code, and is realized intofield-programmable gate array (FPGA) prototyping system.The maximum operation frequency of this design. The similar design methodology is further appliedto individually construct FM0 and Miller encoders.

PROPOSED SYSTEM

Raw image files are sometimes called digital negatives, as they fulfill the same role as negatives in film photography: that is, the negative is not directly usable as an image, but has all of the information needed to create an image.

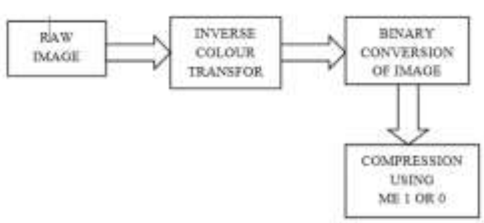

FIG.1 BLOCK DIAGRAM

Likewise, the process of converting a raw image file into a viewable format is sometimes called developing a raw image, by analogy with the film development process used to convert photographic film into viewable prints. The selection of the final choice of image rendering is part of the process of white balancing and color grading.

Like a photographic negative, a raw digital image may have a wider dynamic range or color gamut than the eventual final image format, and it preserves most of the information of the captured image. The purpose of raw image formats is to save, with minimum loss of information, data obtained from the sensor, and the conditions surrounding the capturing of the image (the metadata).Raw image formats are intended to capture as closely as possible (i.e. at the best of the specific sensor's performance) the radiometric characteristics of the scene, that is, physical information about the light intensity and color of the scene.

A color transfer function describes the relationship between the input and the output colors of a device. Computing this function is difficult when devices do not follow traditionally coveted properties like channel independency or color constancy, as is the case with most commodity capture and display devices (like projectors, cameras and printers). In this paper we present a novel representation for the color transfer function of any device.

We demonstrate this method's generality by using it for color management on a variety of input and output devices. Our method shows significant improvement in the appearance of seamlessness when used in the particularly demanding application of color matching across multi-projector displays or multi-camera systems. Finally we demonstrate that our color transformation method can be performed efficiently using a real-time GPU implementation.

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.[1] In the document-scanning industry, this is often referred to as "bi-tonal".

Binary images are also called bi-level or two-level. This means that each pixel is stored as a single bit—i.e., a 0 or 1. Thenames blackandwhite, B&W, monochrome or monochromatic are often used for this concept, but may also designate any images that have only one sample per pixel, such as grayscale images. In Photoshop parlance, a binary image is the same as an image in "Bitmap" mode. Binary images often arise in digital image processing as masks or as the result of certain operations such as segmentation, thresholding, anddithering. Some input/output devices, such as laser printers, fax machines, and bi-level computer displays, can only handle bi-level images.

In telecommunication and data storage, Manchester coding (also known as phase encoding, or PE) is a line code in which the encoding of each data bit is either low then high, or high then low, of equal time. It therefore has no DC bias, and is self-clocking, which means that it may be inductively or capacitive coupled, and that a clock signal can be recovered from the encoded data. As a result, electrical connections using a Manchester code are easily isolated using a network isolator—a simple one-to-one isolation.

In the Manchester encoding shown, a logic 0 is indicated by a 0 to 1 transition at the centre of the bit and a logic 1 is indicated by a 1 to 0 transition at the centre of the bit. Note that signal transitions do not always occur at the 'bit boundaries' (the division between one bit and another), but that there is always a transition at the centre of each bit.

RESULTS:

FIG: 2 COLOUR IMAGE

The above image (Fig.2) is to be sent to another person. If this is the case, then we need to change the image into black and white image as in Fig.3.

Fig.3 Black and white

This black and white image is further converts to 0, 1 format as it is in the Fig.4.

Fig.4. binary data

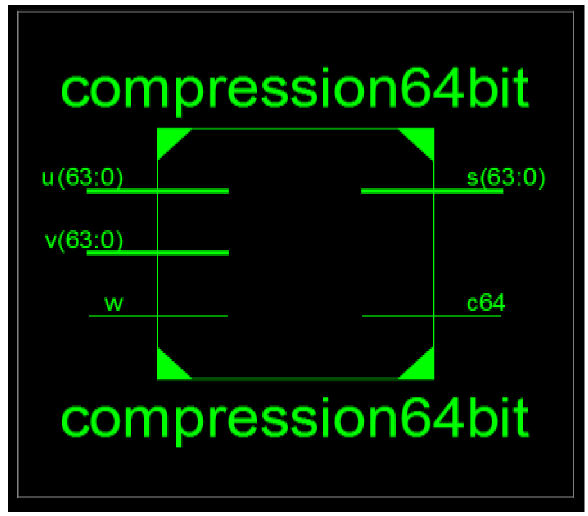

Fig.5 RTL

The above figure shows the RTL Schematic diagram and the output of compressed data is shown in below figure**.**

Fig 6 Output

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CONCLUSION:

This new and advanced proposed system tells us the about the transformation of the image from one device to another device. Suppose I want to send a color image from Tx to Rx, then I have to consume more data. To deduce the data, I want to change the image by following steps. By using this technique, the color image will be transformed into black and white image and then it will be transformed into 0, 1 binary form by compressing the data. Then with the help of compression technique data iscompressed without loss of data. So, finally the colour image is converted to binary data with the help of matlab and the binary data is compressed by using Xilinx 14.7.

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