

# IMAGE PROCESSING -MANIPULATION OF DIGITAL IMAGES

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**Abstract** - Digital camera controlled program is a broad area of research. Vision based approaches deserves special attention, inexpensive and powerful. However, problems such as illumination and noise are overcome. A kind of associative memory with high dimensional binary vectors is used, which also exhibits behaviors in many aspects similar to those of the human brain. This paper analyses the impact of using different image processing techniques on the images using histogram equalization and smoothing using Gaussian filter. The result shows that equalization and smoothing have a positive effect on the performance of the system .

**Key Words:** Image Processing, Meta-Data, Smoothing, Existing System, Proposed System.

## 1. INTRODUCTION

Image processing is to convert an image into different digital form and perform some operations on it, in order to get an information from it and enhanced on it. It is a type of signal waves in which input is image, like frame of video and output may be image or characteristics associated with that image. Usually Image Processing system includes treating images as 2D(Dimensions) signals while applying already set signal processing methods to them..It is among rapidly growing technologies today, with the improvement of digital filtering. Image Processing forms core research area within engineering and computer science disciplines too. Image processing basically includes the following three steps.

- Digital photography.
- Analyzing the image, manipulation of image, compression of image.
- Output is based on image analysis.

The algorithm looks for changes in Iso and speed, and aperture then Mathematically calculates exposure changes of two pictures.

It writes .xmp files.

This make best use in lighting condition such as time-lapse a Time-Phase change Environment.

There is flickering on auto mode when you did not use this technique.

## 2. ARCHITECTURE OF SYSTEM



Fig 1:Architecture of System

In the System architecture the Process of Images include Pre-processing, feature extraction and then manually we can changes the images with it's properties such as Iso, Expeture, Aperture.etc

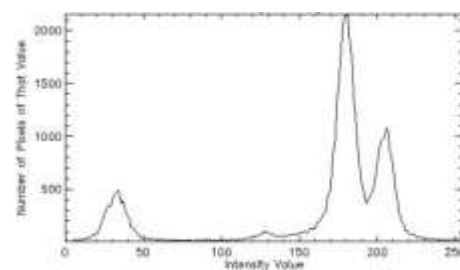


Fig 2:Actual Histogram of Images.

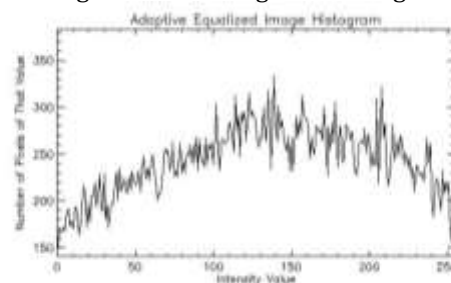


Fig 3:Smooth Equilized Histogram.

## 3. PROPOSED SYSTEM

Extremely Cost-Effective System for Professional Videographers to Tune/Ramp their Content

A System to correct the Flicker's or a Long Timelapse captured by a Digital Camera

$$G(x,y) = \frac{1}{2pa^2} e^{-\frac{x^2+y^2}{2s^2}}$$

Usage of Meta Data to Alter the Histogram of Image Result into Image Equilization and Smoothing using Guassian Equation.

#### 4. METHODS

i. Aperture=log  $\frac{\text{current Aperture}}{\text{next Aperture}}$   
 $\frac{\log \sqrt{2}}$

ii. Iso=log  $\frac{\text{current Iso}}{\text{next Iso}}$   
 $\frac{\log 2}{\log 2}$

iii. Shutter speed=log  $\frac{\text{current speed}}{\text{next speed}}$   
 $\frac{\log 2}{\log 2}$

#### 5. LITERATURE SURVEY

Many of the techniques of digital image processing, or digital picture processing as it often was called, were developed in the 1960s at the JPL, Massachusetts Institute(MIT), Bell Laboratories, Maryland University. A few researches such as application to satellite images, wire-photo standards conversion, medical imaging, videophone, character recognition, and photograph enhancement were also carried out.

Here the use of digital image processing techniques for electronic speckle pattern interferometry. A digital TV-image processing system with a large frame memory allows them to perform precise and flexible operations such as

subtraction, summation, and level slicing. Digital image processing techniques made it easy compared with analog techniques to generate high contrast fringes.

The algorithm simply looks for changes in shutter speed, aperture, and iso, then mathematically calculates the exposure offset required to match the difference between a change in two pictures, evenly applies the exposure change across leading images, and writes new exposure to the RAW (.xmp) files. This allows photoshop due to my calculations without any issue, and use the ramped values. This makes best use in difficult lighting conditions such as a timelapse of a sunrise, where you can change the exposure at sunrise.

#### 5. CONCLUSION

By Using Image Processing we can improve the quality of images. It can find out the difflection in images easily.

The performance of the system is improved by processing the images using a Gaussian filter and histogram equalization. Contrast normalization usually produces bad results.

#### 6. FUTURE SCOPE

- i. Atmospheric effects can be corrected.
- ii. Can acquire Sufficient accuracy for Post-Preprocessing
- iii. Saves Human Efforts to manually configure in specific time spans

Capable of Dodging visual limitations caused by Weather.

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