

Multiple exposure fusion for high dynamic range image acquisition

ABSTRACT:

A multiple exposure fusion to enhance the dynamic range of an image is proposed. The construction of high dynamic range images (HDRI) is performed by combining multiple images taken with different exposures and estimating the irradiance value for each pixel. This is a common process for HDRI acquisition. During this process, displacements of the images caused by object movements often yield motion blur and ghosting artifacts. To address the problem, this paper presents an efficient and accurate multiple exposure fusion technique for the HDRI acquisition. Our method estimates displacements, occlusion and saturated regions simultaneously by using MAP(Maximum a Posteriori) estimation, and constructs motion blur free HDRIs. We also propose a new weighting scheme for the multiple image fusion. We demonstrate that our HDRI acquisition algorithm is accurate even for images with large motion.

Existing System:

In case of the existing system we need to take a lot of image to make a 3D Sean. And also took a lot of time to create the 3D Sean. And also we cannot estimate the time in which the Sean can be created. In order to obtain a better resolution, a technique based on the combination of gray code and phase shifting is often used. The main drawback of this is that we need a lot of image to achieve that. And so look forward to advanced system. Through which we can make the process quicker.

Proposed System:

In case of the proposed system we over come the problem in the existing system. And also we propose a structured pattern in order to manage the image from a computer.

We are getting the image in a matrix, converting to grayscale. Using encoded pattern project, we getting the combination of image from the matrix and adding new pixel colors according to the encoded one, with out using any similar images.

Hardware Requirements & Software Requirements:

Hardware Requirements

- SYSTEM : Pentium IV 2.4 GHz
- HARD DISK : 40 GB
- FLOPPY DRIVE : 1.44 MB
- MONITOR : 15 VGA colour
- MOUSE : Logitech.
- RAM : 256 MB
- KEYBOARD : 110 keys enhanced.

Software Requirements

- Operating system :- Windows XP Professional
- Front End :- Microsoft Visual Studio .Net 2005
- Coding Language :- C# 2.0

Modules

- Load Image/Save Image
- Image processing techniques
- Image Resize
- 3-Data acquisition

Module Description

Load Image/Save Image

Loading the particular image for the image processing, in the particular bitmap. This is by opening the dialog box and selecting the particular image file. After alteration, can save the particular image.

Image processing techniques

Various processing techniques are included in the project (invert, grayscale, brightness, contrast, gamma and color).

Image Resize

In this module, resizing the image in zoom in and zoom out. Resizing is a technique in image processing and here, added as a module, and sizing is by percentage.

3D-Data acquisition

This is the main module in this project. First, converts to binary image (gray scale), passes color to the matrix and converts to 3D by the combination colors of image.

REFERENCE:

Takao Jinno, Masahiro Okuda, "Multiple exposure fusion for high dynamic range image acquisition", **IEEE 2011**.