International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056
Volume: 03 Issue: 05 | May-2016 www.irjet.net p-ISSN: 2395-0072

Automatic 2D-to-3D Image and Video change

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Abstract - The available of 3D content of the 2D part is still dwarfed despite of the significant growth in last few years. To close the gap, there are some methods proposed to convert an 2-D image in 3-D image as well as for video conversion. Specifically, images captured by normal cameras, where no depth was ever provided, but now it is been widely experienced. A sense of depth are been used in lots of applications, like training simulations, gaming, scientific model exploration, and in cinemas. Many applications uses a sense of depth to get a sense of authencity, and thus the users can truly appreciate the contents that they are viewing. In the modern generation 3D supportive hardware is increased but the interest for 3D contents that are available is not matching. They are still known by its 2D counterpart hence there is a wide need of 3D contents. While converting 2D-to-3D contents or video's conversion depth estimation is a key step and a bit challenging process. There are various parameters that should be taken care of like, structure from motion, defocus, perspective geometry, etc. Till now various methods and algorithm have been proposed to close the gap between one or many parameters.

Key Words: **2D-*3D,Images,Video,depth,motion, algorithm***

1.INTRODUCTION

Now the 3D capable hardware such as 3D TVs, gaming relieve, 3D cameras, 3D projectors and smart phones and many other application are widely been increased. These 3D media gives feeling of abs option and more life like viewer experience. But the 3D content availability is not matching with the production rate. There are two methods for generating 3D images. First is to capture directly multi view method and second is to take 2D conventional flick and convert it into 3D image. Multi view method gives best results but it is difficult and expensive as it requires specialized high resolution cameras and other costly accessories as well as production system should be strong . The another method is difficult but cheap compared to the multi view method. By using this two methods a large amount of 2D data can be converted in 3D contents .

The main purpose of 3D process is to built the depth which is known as a depth map. Depth map is represented as gray level images in which pixel's brightness specifies the pixel's distance from the viewer in the original picture. Here we develop as well as compare three different automatic depth methods: local method, global method, edge information based method. Local and global methods are used for learning the conversion for example " big data " principle of machine learning. These method is applied for whimsical scenes and manual interference is not needed. First method is by learning 2D to 3D conversion of a point transformation that relate local image or video attributes , like colour, location, and motion at each pixel to a corresponding scene-depth at that pixel. The second method is a global method which estimates the global depth map of a query image directly from 3D image repository. Older versions of learning-based approach to 2D-to-3D image conversion, was either tested on only a single dataset or suffered from high computational complexity. Hence to avoid the real time difficulty of storing the repository in local and global methods, the third method focused on generating depth directly from the query image without using large repositories and demonstrate the improved quality depth map produced by the edge information based method relative to state of the art, local and global method.

2. LITERATURE REVIEW

The most recent undertakings in converting video footage and image to their stereoscopic or multitier counter parts for displaying on 3D visualization technology. Viewing 3D content, at home, cinema, or in scientific and industrial environments, it has become more popular over the last few years. Specifically, the sense of depth in a scene captured by normal cameras, where virtually no depth was provided, is now been experienced. At the user end the information to enhance their viewing experience, by newly available depth perception, so that they can truly interact within the environment. a depth is also used in many applications, ranging from training simulations,

gaming, scientific model research, and in cinema. The depth can increase the quality of pixels. All these applications can use a depth to get a sense of reality, and thus the users can appreciate the content that they are viewing. We have concentrated on the various recent methods to achieve this goal over the last few years, as research into this area has surfaced in higher volumes in this period. As previously mentioned, convert from 2D to 3D is further divided into two major categories that are motion and analyzing scene features. But in previous methods the image quality was not so good and it used to take a lot of time to give the output . Now a days there are different algorithms and methods which are widely used for conversion of 2d image and video to 3D.

3. EXISTING SYSTEM

The Motion estimation is used to determine the depth or disparity of the scene. There are two mechanism the first mechanism is the object closer to camera move's faster. And the other mechanism is object that is far from the camera move's slower. In these feature color information is directly determining depth maps from monocular video sequence. Each intensity belongs roughly to the same kind of objects and the same depth value.

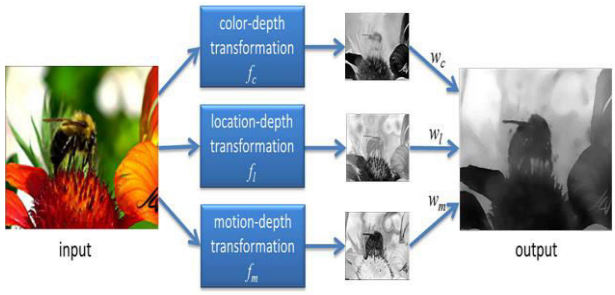
4.PROPOSED SYSTEM

The procedure of depth map creation is important. This algorithm thus mainly determines the depth map creation method. As the procedure of filtering and DIBR, we adopt methods. An input of 2D video stream consists of a multiple video snap and each video snap includes a sequence of frames taken from a single camera. As the camera moves a little within a video shot, the global depth slope is changed slightly and it can be shared by frames in the same video snap to reduce the computational complexity and promote the material of smoothness of the depth maps with little extra inaccuracy. We have developed two types of methods. The first method is learning of a point mapping from local image and video attributes, such as color, position and, in the case of video motion at each pixel, to scene-depth at that pixel using a reversion type idea. The second method is a globally estimating the depth map of a query image directly from a repository of 3D images. We demonstrate both the efficiency and the computational efficiency of our methods.

4.1 Advantages :

- Increase computational efficiency.
- It is very useful in online process.
- 3D has enormously advantages which are specially seen in movies.

4.2 Architecture :



- Colour-depth transformation :

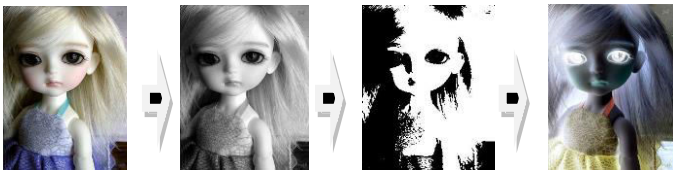
3D images and video are include the use of multiple color views and depth maps associated to each view. The depth maps should be adopted to the characteristics of depth maps: smooth region and sharp edges. Depth map segmentation is used to locate the main discontinuities in depth. The resulting partition is improved by fusion colour partition. The color partition can be segmented in the decoder without introducing any extra cost.

- Location- Depth Transformation :

The location depth to a uniformly distorted image can correctly transformation. Which maps variables(e.g. pixel intensity value located) because scaling varies with depth in such way. The camera coordinates system positioned and oriented relative to the coordinate system. So each point of position in the first view is transformed to its coordinates.

- Motion-Depth Transformation :

Motion blurred images have been used for depth estimation. Motion computation and stereo depth perception are closely related. Depth effect and motion transformation it shows that the human visual system does not always possible.



Original Image Gray-Scale Image Black-Scale Image 3D Image

5. ALGORITHM :

1. Gray Scale Algorithm :

Gray-scale or grey scale digital image is an image in which the value of each pixel is a single sample, that is, it carries only intensity information. Images of this sort, also known as black-and-white, are composed exclusively of shades of gray, varying from black at the weakest intensity to white at the strongest. Gray-scale images are distinct from one-bit-bi-tonal black-and-white images, which in the context of computer imagine are images with only two colour, black and white. It also called as binary images.

2. Black Scale Algorithm :

The proposed algorithm address two important issues in solving large black scale. Thus if we have black pixel on a white background it will vanish. The algorithm first scales the images to 8 times its original size with a modified scale.

3. Colour-depth Transformation :

It is one of the algorithm which is used to 2D images and videos convert into 3D. Colour depth denotes how many bit are stored colour information in the image pixels. The total number of colour that a given system in able to generate or manage. The limited selection of colour that can display simultaneously on the whole screen, selected coloured or picked colours, individuals images and images colours.

6. RESULT ANALYSIS

- There are following are service provider :

1. login(User id and Password)
2. Browsing the Image.
3. Upload the Images.
4. Then original images can be converted into Gray-scale images.
5. Then next gray-scale images converted into Black-scale images.
6. Lastly Black-scale image converted into 3D images.

Following shows that the result :

7. GRAPHICAL ANALYSIS OF RESULT

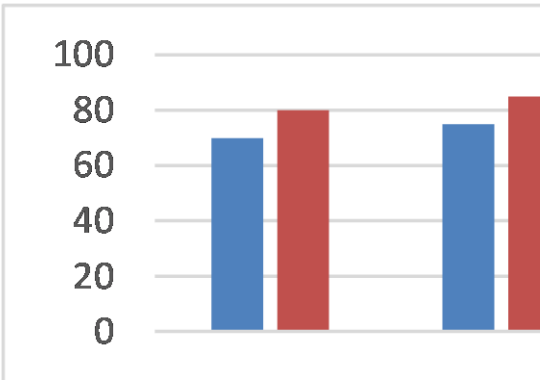
Result analysis 1:

a. Tabular representation

	Existing System	Proposed System
Color Depth	70%	80%
Location Depth	80%	85%
Motion Depth	60%	70%

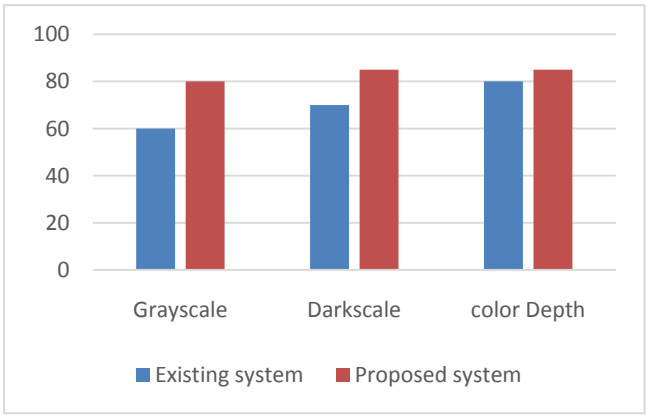
Result analysis 1:

a. Tabular representation



	Existing System	Proposed System
Gray-scale	60%	80%
Dark-scale	70%	85%
Color depth	80%	85%

a. Graphical representation



8. CONCLUSIONS

In this paper, we discussed the most recent conversion methods of 2D to 3D image and or video. There is not fixed steps for doing conversion but taking image or video frames distinct features it is done. Hence 2D to 3D conversion broadly sub divided like depth using motion, depth using visual saliency, depth using perspective geometry etc. Depth using motion is mostly suitable for video conversion. The methods using perspective are more suitable for image conversion. We have covered most of them here. As there is urgent need of 3D contents, using this methods it is possible to close gap between 2D and 3D. The automatic and semi-automatic methods are implement . In automatic method , no human interfere occur but semi-automatic method involve human as well as machine interfere. The algorithm such as gray scale, black scale and colour depth transformation implement to improve the quality of image and video. Though these methods give good results, still there is room for improvement in future. The discussed methods here are computer vision algorithms, so hardware implementation of them to reduce design metrics and for real time application can be considered as future scope.

8. ACKNOWLEDGEMENT

This work is supported by JSPM‟s Jayawantrao Sawant College of Engineering, Pune Maharashtra. First and foremost, we would like to thank our guide Prof. A.H. Hattarge. Providing us with their invaluable support, motivation, suggestion and guidance throughout the course of the paper. We would like to express our gratitude towards Prof. A. S. Devare whose support and consideration has been a valuable asset during course of this paper. We convey our gratitude to our respected HEAD OF DEPARTMENT, Prof. H. A. Hingoliwala for his motivations and guidance throughout the work. And, last but not least we would like to thank Principal Dr. M. G. Jadhav for directly and indirectly help us for this work.

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