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Automatic 3D Video Conversion by Depth Estimation and Color Segmentation

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Abstract:

Most of the TV manufacturers have discharged 3D TVs at intervals the summer of 2010 victimization protected methodology. 3D video applications became customary in our existence, notably reception amusement. Through additional and extra 3D video unit being created, 3D video information unit still not created enough to satisfy the end of the day 3Dvideo market. There is a rising demand on new techniques for automatically dynamical second video content to stereoscopic 3D video displays. The color region segmentation provides sensible region boundary data that's used to mix with diagram based intensity map on behalf of eradicate the method impact and sensible depth rate all conferred region. The experimental results show that this theme will do relatively high quality 3D stereoscopic video output.

Key words: Depth from movement, 3D-TV, Stereo, Color phase

1. Introduction

In 2010, 3DTV is spacious plan to be the one in all huge thoughts and lots of well-known TV brands like Sony and Samsung were discharged 3d TV assortment of victimization shutter-glasses primarily based 3d flat panel demonstrate technique. This exploitation of 3DTV is another revolution at intervals the history of Data leakages are one of the biggest issues in most of the institutions and industries. Though there is different encryption algorithm designed for data security, there is a big issue of integrity among the users. It is hard for any system administrator to track the data leaker among the system users[3]. It creates a lot of ethical problems in the Working environment. After the data is distributed among the agents, we may find those data that are found in the hands of some third parties. Our goal is to identify the person by whom the data have been leaked. Here we designed a method for estimating the “guilt” among the agents. In this paper certain logical concepts have been presented to enhance the better working of the proposed model (identifying the leaker) using the existing algorithm.

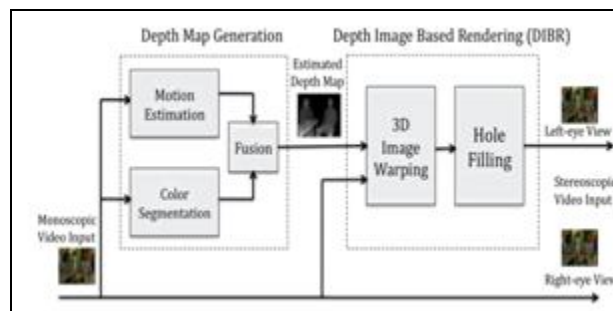


Figure 1: System Architecture

2. 2D-to-3D Conversion System Structure

A broadly enabled technologies such as firewalls, encryption, access control, identity management, machine learning context based detectors and others have already been implemented for providing protection against various data leakage threat.

Traditionally the data leakage is detected using Watermarking [5] [6] [8].

Watermarking is an image or pattern where a unique code is inserted in a each copies and distributed to the users [4]. If those copies are found with an unauthorized person then the leaker can be identified easily.

2.1. Problem Definition

- To detect whether the data has been leaked by agents.
- To prevent the leakage

E.g. In a hospital the patient records can be given with the actual data along with some fake data is added and distributed [8]. Such fake data appears realistic to the agents [2]. If the fake data was leaked, then the distributor can easily identify which agent was guilty[2][9]. In the same way an organization might have a relationship with some other organization that needs agent details. So that the data must be shared with other companies [7]. This goal helps to detect by which agent the data has been leaked.

2.2. Disadvantage of watermarking are

- It is time consuming,
- Limited digital protection,
- It can be easily hacked.

3. Depth Map Generation

To generate the left-eye browse, the key processes unit involved:

One is depth map generation and another one DIBR as shown in Fig.0020By considering the above goal in our mind in this section we develop a model to find the guilty party among the agents. In this approach we present an algorithm which is used to identify the data leaker [3]. This is implemented by using client server method. The server is a computer or a computer program that manages access to a centralized resources or services in the network. A process that shares resources between client processes is called a server. For example file sharing. Here the server is a computer that controls and manages a database for sharing files. The server's function is to manipulate the data through its network. As shown in fig.1. A single system is assumed to be a server and all the client system data are frequently updated in the server database.Our goal is to detect by which agent the data has been leaked. The proposed approach is to detect the data leakage and the guilty agent who leaked the data. This could be done by implementing an algorithm, which is used to send an alert message to a mobile device when the data has been leaked. The algorithm which keeps track of the number of count the data has been sent.

When the count exceeds for more than once, the alert message is received to the mobile device.

3.1. Block matching based totally Depth Map Estimation

Usually depth map is 8-bit grey scale image as shown in Figure. In networking the following servers are used such as application , sound , database, communication , file , name , stand alone , game , proxy server . But in our approach we are going to use an application server. An application server is developed to run a software application, here we develop an application by using algorithms for identifying the leakage of data. Data is collected from all the sources and updated in the server database.(sql 2008 database is used)

Generally in android mobiles SQLite database is used as the server. In this server only less data can be stored in the database. To overcome the less storage space , SQL 2008 is used . In SQL 2008 all system data can be stored in its database. It is flexible since the connection between mobile and server is easier. SQL 2008 server is comparatively secured and the storage space is more .The server database keeps track of the data that is being used by the agents. The system number and the agent details are created in the form of table and stored in the database. The multiple agents access the data simultaneously which has been allocated to them, is continuously updated in the database.

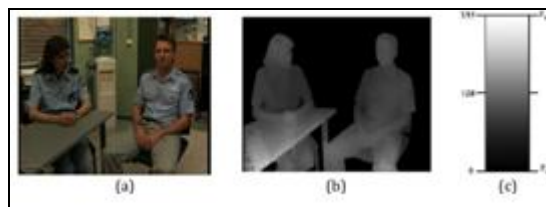


Figure 2: (a) A frame of a video, (b) The depth map, (c) depth values

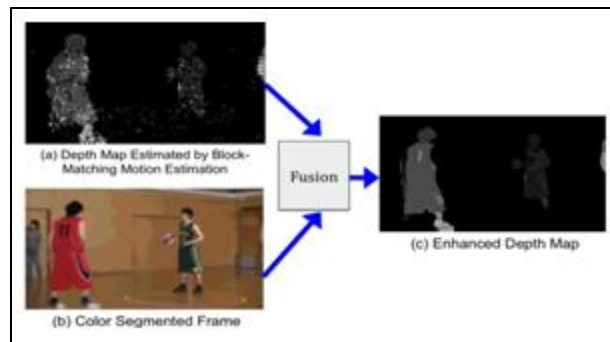


Figure 3: Depth map improvement by Fusion

3.2. Color Segmentation

The second drawback of the block-based depth estimation technique is that the generated motion fields usually suffer from basic steps impact on the boundary of the things or regions as shown in Fig. Each agent is provided with a unique id and password to verify whether they are an authenticated person or not. When an agent signs in into their user account, the agent gets the access of the data which has been allocated to them. This is done to ensure the level of authorization. By this process the data is secured from the third party.

3.2.1. Detection Strategies

- The algorithm keeps track of the number of count the data has been sent.
- When the count exceeds for more than once, the alert message is received to the mobile device.

3.3. Fusion

To enhance the block-based totally depth map as shown at intervals the Fig. 3(a), it's to integrate it shown in Fig. Here there are two people who play a vital role one is administrator and another one is agents. The administrator login into their id to perform the following functions such as who takes control of all other agents, who approves the user privileges of other agents, distributes the data among the agents, edit and delete the dataset, stores the data, encrypt and decrypt the data. When an agent login into their account, the admin checks for the privileges and then the following functions can be performed by the agents such as register for the user privileges, access the data, store the data, sends the report to the admin, encrypt and decrypt the data. Check for agent's authentication. If the agent user id and password is valid, the agent can access the data. Else the access to the data is denied to identify the data leakage. Check the sent data count. If the count is greater than one then it is immediately updated in the database and the data is lost in the agent system. The guilty agents' details are received from the server database. Finally an alert message is sent to the administrator mobile.

4. Depth Image Primarily Based Rendering

To get the stereoscopic 3D video, DIBR is utilized to synthesis the left-eye browse record supported the derived depth map and video input as shown in Fig. 1. The DIBR rule consists of 2 processes: (1) 3D Image deformation and (2) space-filling.

4.1. Hole Filling

The square is calculated primarily based upon a pair of major problems Guilty agent is an agent who violates the rules and tries to leak the sensitive data to the third party[2][10]. The guilty agent could be identified by using an algorithm. Here the agent can send the data only to the administrator. The algorithm keeps the track of the number of times the data has been sent. The data sent from the agents system is continuously recorded in the server database. If it exceeds the count, the data will be lost in the agent system. Since the count is increased, an alert message is sent to the mobile through the server. By this approach the guilty agent can be identified by the administrator.

- By using the traditional watermarking (which is easy to hack).The data leakage could not be contained and the guilty agent is unidentified.
- As per the proposed system the guilty agent can be easily identified by an alert message to the mobile from the system server.
- The algorithm that has been presented implements a variety of detection strategies that can improve the administrator chances of identifying a leaker.



Figure 4: left eye read

Figure 5: Enlarged left-eye read image with distortion

Figure 6: 3D video in anaglyph format

5. Experimental Result

Java database connectivity (JBDC) defines the way in which the client access the data in the database. JTDS-1.2.5.jar is a jar file that provides a link between the mobile and the server on the linux platform. A web kit is used to connect the server to the browser. It consists of PHP language at the front end and database MYSQL at the back end. MSMTP is an SMTP client which is used to support the send mails.

6. Conclusion

This paper presents a strong methodology to convert a 2D-to-3D As seen earlier the data leakage is the biggest issues in most of the institutions & industries. To overcome this issue traditional methods like watermarking (which is easy to hack) and different encryption algorithm are used. In spite of using all these methods for protecting the data, the data leakage could not be contained and the guilty agent is unidentified. As per the proposed system the guilty agent can be easily identified by an alert message to the mobile from the system server. Based on the survey the data will be lost for both the guilty agent and the third party. In the future this idea could be implemented for the better containment of the data

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