3D Crime Scene Investigation

Gitanjali Dass[1*], Nakul Pandoh[2], Hemanshu[3]

[1]*Researcher, Department of Forensic Science, CTM-IRTE, Faridabad, India*
[2]*Tutor/Demonstrator, Dept. of Forensic Medicine and Toxicology, Al-Falah Medical College, Faridabad, India*
[3]*Researcher, Department of Forensic Science, Punjabi University, Patiala, India*
*Corresponding author: gitanjalidass@gmail.com

Abstract: There are many advancements are there in the technologies are there and one of the things which have become very famous is the 3D imaging of the technologies. There has been a widespread belief that this system is there. In this system there are different hard levels of the crime scenes that are tackled. There are lots of crime scenes which can be reconstructed. The details are kept mainly in the millimeter based techniques which have been used. The system which is used is called the 3D based imaging system. NASA the one of the famous space technologies which are there is also working in the matter to make the crime scenes to be properly investigated.

Keywords: 3D imaging, Crime scene, Investigation, 360-degree imaging.

1. Introduction

The main aim of this assignment is to research and evaluate the 3D crime scene Investigation with the help of the special equipment which is illustrated over here. NASA scientists are also there who are continuously trying to make the different ways through which the crime scene can be properly investigated. There are technologies that have been developed and it is very important to make use of the proper techniques and the chemical to make the 3D crime scene to be properly investigated. There are different methods that are there through which the 3D crime scene is investigated in this assignment.

2. Crime Scene Imaging

Fig. 1. Crime scene imaging (Source: Created by author)

It is called the process through which the images of the crime scene are mainly researched. It is a deliberate type of process and the main feature of the crime scene imaging is to visualize the situation of the person who was not there and the main suspect (Abate *et al.* 2017). There are different types of photographers are there through which the crime scene is generally visualized which are overall, midrange and the close-up (Bouchaud, 2020). There is also a type of imaging that is also there which is called 360-degree imaging (Butler, 2016). It mainly helps to analyze the main murderer and helps to make a proper visualization.

3. The Basics of the 360 Degree Imaging

The camera which is mainly used in the 360 Degree of the imaging in which a special rig of the multiple cameras is there which are generally used. There are also dedicated cameras there which contain multiple camera lenses (Carew *et al.* 2019). The camera in which there are multiple lenses and rigs are present to help make the imaging to be done in a proper way. There is a special type of method there which is called the stitching type of a method (Chase and LaPorte, 2017). It is a special type of a method through which the individual images are mainly merged into a spherical type of an image (Colwill, 2016). In this function, there are all colors' and the contrast which is there is basically calibrated with that there is a huge level of consistency there.

Fig. 2. 360 Degree crime scene crash (Source: Created by author)

There is a way in which the stitching can be done in a special type of way which is called the automated way (Yesodharan, 2018). There is software and the computer is there which is used in which the stitching can be done automatically (de Leeuwe, 2017). There is manual intervention there which is also there which can also be necessary. The images and the video which is captured on the 360-degree system can also be played in the smart phones as well as the computers and there are also headsets which can also be used. One of the major things which

are very important is called the quality of the photo (Fatima, 2019). There are a variety of imaging solutions that are there in the market from different ranges.

4. Tools Used in the 3D Crime Scene

Fig. 3. 3D Hawk tool for crime scene mapping
(Source: Created by author)

There is a use of a major tool there which is called as 3D-Hawk which can easily make the crash things to be changed into a creative 3D crime scene (Gouse *et al.* 2018). This is called as the special type of system which is used to make the video and the images to be converted into very high quality and the graphics (van den Eeden *et al.* 2016). This does help the investigator to make a proper search.

5. Advantages of the Raw Data in the Forensic

There are raw files there in the 3D based crime investigation and it especially makes the color of the photos to be adjusted. In case of maintaining the white balance and the setting of the contrast are also very important which are there (Jeanguenat and Dror, 2018). This mainly helps the specialist to make the adjustment to be done with a proper type of evidence to be maintained (Thompson, 2018). This is called one of the aspects through which clarity and the proper imaging can be done.

6. Factors to Consider the User Experience

Mainly there is only a single photo there which captures the entire scene which is of 360 degrees. It is considered to be the whole room (Jennings, 2020). There are videos which are made with the 360 imaging that also helps the crime scenes to be investigated from different angles. This is a kind of operation which is very easy and there are different types of systems there through which it can be used (Kanbar, 2016). There are two ways which are called the basics like stitching and the exporting which can be done in an automated way (Sterzik and Bohnert, 2016). There are two things which are called as the indication and the distortion which can be minimized with the use of the smart software.

A. Image Considerations

There is some consideration regarding the images is there which need to be there like which are as follows:

1. *Aperture:* It is called the lens or the opening of the camera through which the light generally passes in order to enter the camera (Kovaleva *et al.* 2020). It is especially expressed in f which is mainly to make the size of the opening to be illustrated. It is a special way through which the light can be controlled. It is one of the special functions of the camera through which the 360 degrees and the 3D crime scene can be investigated.

2. *Field of View:* It is called the open observable area which is important through which a person can see through each other. It is called as the special type of a system through which the devices can easily manage the electromagnetic radiation and to allow coverage of the area (Mendis, 2016). It is only focused on a single point or the area. It is the item which is there in the photograph can be used in the Crime scene to be properly investigated.

3. *Sensor:* It is a special type of a thing which detects people to make an image and is a specific type of information (Murray *et al.* 2017). It is called as the type of AI which can be used in the Crime scenes to make the detection of the crimes. It mainly works with the million light cavities which are there to make a record of an image.

4. *ISO:* It is also called as the special type of sensitivity which is used in cameras (Randolph-Quinney, 2018). It is called the ability through which the camera can absorb the light and through which there are different functions that can be changed.

5. *Shutter Speed:* It is called the length of the time through which the shutter of the camera is opened (Schmitz, 2016). It is called the function through which the camera spends taking a photo. This is an important aspect of the camera which helps in detecting images.

6. *Resolution:* It is mainly related to the size and the image graphics through which the quality of the image can be easily determined.

7. *Compression:* It is called the size through which an image can be compressed and make the image to be small.

These are called as the techniques through which the image can be made more enhanced and can be used in the 3D crime scene investigation.

B. Practical Considerations

There are some practical based things that are also there which need to be there to make the photo of the crime scene to be properly distinguished (Sheppard *et al.* 2017). Some of the things which need to be considered are Size of the photo which

is essential. The weight age of the photo as well as the assembling parts of the photo. There are two other thighs which need to be there are weatherproof and the shockproof.

C. Artificial Intelligence

It is called as the special type of a system which is called as the static type of which is used to take photos. It can also be used with short based activities (Sheppard *et al.* 2017). Thus is the rise in the power of the technologies which can be used and make the 3D crime scene to be properly investigated.

7. Conclusion

It can be concluded from the above research that there are several functions required to make a proper crime scene investigation. It is properly concluded that the usage of the quality needs to be maintained which is the foremost important thing and there are some considerations there as well which also need to be maintained. There is panning and transparency is also there which is required to be done. It is also illustrated that the use of the AI will be there to make the system to be worked in a proper manner. People nowadays are making use of the 360 degrees to make the investigation to be done in a proper way.

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