# Augmented Reality Based Application for 3D Interface in Museum

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**ABSTRACT:** This paper will describe the multimedia solutions designed and developed for museum and tourist attractions, as well as the variety of solutions available on the market. Augmented reality (AR) has been touched as the bridge between the physical and virtual worlds, as new technologies add information to real-world environments. Our paper examines how an augmented reality guide can enrich museum visits by facilitating interaction. It seems that AR is an interesting tool for helping the visitor to do an active visual survey and to identify relevant facts, as well as looking at the artworks in a new insight. The study argues that the superimposing function of AR encourages the visitor to learn more about the context of art production, this include: (a) comparing the distinctive aspects of an artwork with other works; (b) exploring the creation process of artworks by indicating the relevant or hidden details; and (c) supplying visitors with information that are usually accessible only to museum professionals. The aforementioned situations prompt the visitors to discover artifacts or any artwork in a playful, exciting and more memorable way

**KEYWORDS**: interactive museum exhibit, augmented reality, virtual reality, mixed reality, cultural heritage; visitor engagement; edutainment; storytelling

## I. INTRODUCTION

The motivation for working on this area was primarily an interest in undertaking a challenging project in an interesting area of research. Technology has become an integrated part of people's lives. It has, and continues to influence many aspects of daily life and has allowed better social interaction, ease of transportation, the ability to indulge in entertainment and media. The creation of many devices such as mobile phones and computers have caused many people to rely on technology to communicate with their friends, store information such as pictures, movies, documents, and music. Nowadays everyone is having a smart phone. So taking advantage of this we are creating a multipurpose application based on AR technology which can scan a photo and play the corresponding audio and present the information corresponding to image in text format and display a 2D image in format. When a person goes into a museum then many times it happens that he does not understand much about a picture by just looking at this picture or sometimes it is placed at a far distance that the picture is not clearly visible to the user or the information related to the picture is written in some other language that the user don't know. For that the user needs to carry a guide along with him. To overcome all these drawbacks we are creating a multipurpose application based on AR technology which can scan a photo and play the corresponding audio and present the information corresponding to image in text format and display a 2D image in 3D format.

## II. RELATED WORK

There are various application in market related to the use augmented reality in museum. But they have only used augmented reality in their applications. In our proposed work our aim is to achieve better accuracy in converting the 2D image in 3D format using the proposed algorithm. Our application scans an image using smart phones camera. Then the scanned 2D image is given as an input to our application then it is converted into 3D image. And some information related to the image is displayed in text format. Also an audio is played related to the image.

2.1 Augmented Reality:-Augmented Reality is a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view. We use this technology to convert a 2D image into 3D image.

2.2 Playing the audio: - When the photo is scanned then related audio is played.

2.3 Displaying the text: - When the image is scanned then along with 3D image and audio a text information related to image is displayed.

2.4 Existing system

Presently there are various existing systems which have used augmented reality in various application. They have also tried augmented reality in museum.

Limitations of existing system

Existing system have only tried to use augmented reality to display a 2D image into 3D format.

But none of them have played the audio related to image and they also have not displayed the text information related to image.

## III. PROPOSED SYSTEM

In our proposed work our aim is to achieve better accuracy in converting the 2D image in 3D format using the proposed algorithm. Our application scans an image using smart phones camera. Then the scanned 2D image is given as an input to our application then it is converted into 3D image. And some information related to the image is displayed in text format. Also an audio is played related to the image.
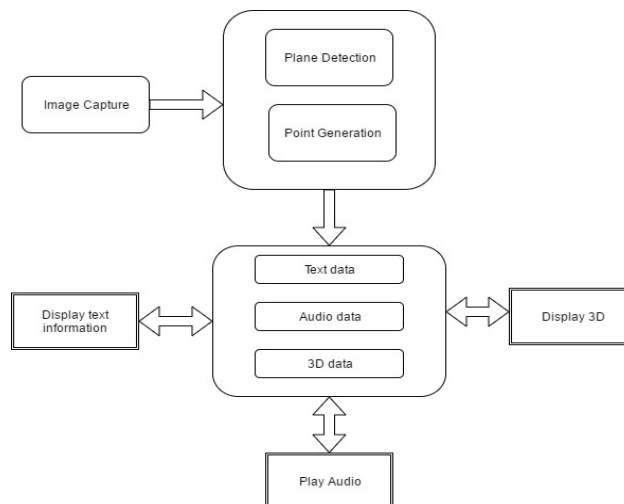


Nowadays everyone is having a smart phone. Taking advantage of this we are developing the application for android smart phone. By using the android phones camera we can scan the image and using the display of phone we can display scanned 2D image into 3D format. The display is also used for displaying text information. And the speaker of the phone is used to play the audio related to image.

## IV. RESULT

Our developed application is deployed on android phone. In which the display of the phone is used to display the augmented 3D image and text information related to the image. And the speaker of the phone is used to play the audio related to image.
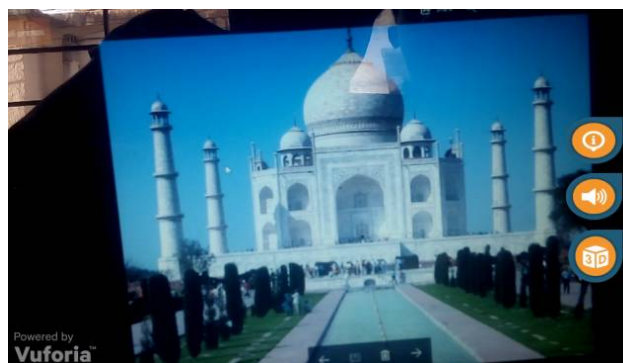




## V. LIMITATION OF PROPOSED SYSTEM

For better result in 3D format the user needs to keep the camera focused on the 2D image if the user moves camera from image then the 3D image disappears.

## VI. CONCLUSION

So in this way we have successfully implemented a project based on augmented reality. As we have already have already discussed in earlier part of introduction that museums nowadays are facing problem of less visitors. Number of visitors visiting museums these days is decreasing. Especially the young peoples. There are several reasons behind this. But digital world is one of them. As we know everyone today is familiar with smart phones, laptops, pads. And people nowadays want everything in digital format. And there is also an advantage of this is that digital world makes our daily life more interesting.

As we know everyone today is having smart phones, laptops, computers etc. So by developing an application for museum using augmented reality we have tried to increase the number of visitors in museum.

Not only augmented reality to display a 2D image into 3D format but also we have given an audio and some text information of the image in our application. .

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