

3D VIDEO CALLING GLASS PRISM

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Abstract— The world of 3D incorporates the third dimension of depth, which can be perceived by the human vision in the form of binocular disparity. Human eyes are located at slightly different positions, and these perceive different views of the real world. The brain is then able to reconstruct the depth information from these different views. A 3D display takes advantage of this phenomenon, creating two slightly different images of every scene and then presenting them to the individual eyes. An important step in any 3D system is the 3D content generation. Several special cameras have been designed to generate 3D model directly. So the main focus is using the 2D-3D conversion algorithm any user that is making a video call should be able to view the other person who he/she is talking to. For visualization purpose we will be using prism that will help us to display the visual of the person the user is talking to. With an appropriate disparity and calibration of parameters, a correct 3D perception can be realized.

Keywords— 3D Communication, Prism.

1. Introduction

The world of 3D incorporates the third dimension of depth, which can be perceived by the human vision in the form of binocular disparity. Human eyes are located at slightly different positions, and these perceive different views of the real world. The brain is then able to reconstruct the depth information from these different views. A 3D display takes advantage of this phenomenon, creating two slightly different images of every

scene and then presenting them to the individual eyes. An important step in any 3D system is the 3D content generation. Several special cameras have been designed to generate 3D model directly. So the main focus is using the 2D-3D conversion algorithm any user that is making a video call should be able to view the other person who he/she is talking to. For visualization purpose we will be using prism that will help us to display the visual of the person the user is talking to. With an appropriate disparity and calibration of parameters, a correct 3D perception can be realized.

2. Motivation

Motivation of this system is to,

- Video Call
- Video call should be able to view the other person who he/she is talking to
- Creating two slightly different images of every scene and then presenting them to the individual eyes.

3. OBJECTIVE

Objectives of this system are,

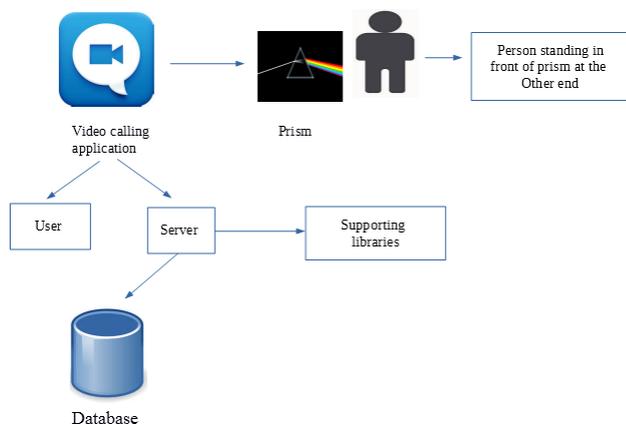
- Video Calling through application
- Video call should be able to view the other person who he/she is talking to.
- Actions of person doing at the other end standing in front of mirror.

4. Literature Survey

Provides a guide to well-tested theory and algorithms including solutions of problems encountered in modern computer vision. Contains many practical hints highlighted in the book.

Develops two parallel tracks in the presentation, showing how fundamental problems are solved using both intensity and range images, the most popular types of images used today. Stereo matching is one of the most active research areas in computer vision. While a large number of algorithms for stereo correspondence have been developed, relatively little work has been done on characterizing their performance. In this paper, we present a taxonomy of dense, two-frame stereo methods. Our taxonomy is designed to assess the different components and design decisions made in individual stereo algorithms. Using this taxonomy, we compare existing stereo methods and present experiments evaluating the performance of many different variants. This article describes methods developed for 2D-3D conversion of images based on motion parallax, depth cues in still pictures and gray shade and luminance setting for multi view auto stereoscopic displays. It enables us to observe real object behaviors from any viewpoints as well as to see pop-up 3D object images.

5. Architectural Diagram



6. TECHNOLOGIES TO BE USED

•3D video calling:

A three-dimensional stereoscopic film (also known as three-dimensional film, 3D film or S3D film) is a motion picture that enhances the illusion of depth perception, hence adding a third dimension.

The most common approach to the production of 3D films is derived from stereoscopic photography. 3D is defined as a system or effect used in a movie or object to provide three dimensions - width, length and depth. An example of 3D is a movie in which you are given special glasses to watch. Three-dimensional model that displays a picture or item in a form that appears to be physically present with a designated structure. Essentially, it allows items that appeared flat to the human eye to be displayed in a form that allows for various dimensions to be represented.

•MySQL:

MySQL is the most popular Open Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web-based software applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is the most popular Open Source Relational SQL Database Management System. MySQL Enterprise edition includes the most comprehensive set of advanced features & management tools for MySQL. MySQL is the world's most popular open source database. Whether you are a fast-growing web property, technology ISV or large enterprise, MySQL can cost-effectively help you deliver high performance, scalable database applications. MySQL is a popular choice of database for used in web application & is a central component of widely used LAMP open source web application software stack. MySQL Query Analyzer: To optimize performance by visualizing query activity and fixing problem SQL code.

•SQLite:

SQLite is a relational database management system contained in a small (~350 KiB) C programming library. In contrast to other database management systems, SQLite is not a separate process that is accessed from the client application, but an integral part of it. SQLite is ACID-compliant and implements most of the SQL standard, using a dynamically and weakly typed SQL syntax that does not guarantee the domain integrity. SQLite is a popular choice as embedded database for local/client storage in application

software such as web browsers. It is arguably the most widely deployed database engine, as it is used today by several widespread browsers, operating systems, and embedded systems, among others. OS like Android, Web browsers like Mozilla etc. SQLite has many bindings to programming languages.

7. Overall Description

7.1 PRODUCT PERSPECTIVE:

Main perspective of the system is to, is to send messages to close relatives, doctors, police. As, soon as the accident is detected. Also, due to the delay in reaching of the ambulance to the accident location and the traffic congestion in between accident location and hospital, there is an increase in the chances of the death of a victim. So, to avoid this we have proposed this system.

7.2 REQUIREMENTS:

SOFTWARE REQUIREMENTS:

Programming language: Java, Android
Database requirements: MYSQL, SQLite
1) Eclipse
2) Tomcat 7
3) MYSql

HARDWARE REQUIREMENTS:

Android Phone
250 GB HD
4 GB RAM

7.3 PRODUCT FUNCTION:

1. Registration and Login
2. Video Calling
3. Prism will be help over screen
4. Output of setup will be visible.

9. Mathematical Model:

$S = \{s, e, X, Y, T, F_{main}, NDD, DD, Success, Failure\}$

•**S(System)** = Is our proposed system which includes following tuple.

•**s (initial state at time T)** = GUI of search engine. The GUI provides space to enter a query/input for user.

•**X (input to system)**:- Input Query. The user has to first enter the query. The query may be ambiguous or not. The query also represents what user wants to search.

•**Y (output of system)**:- List of URLs with Snippets. User has to enter a query into search engine then search engine generates a result which contains relevant and irrelevant URL's and their snippets.

•**T (No. of steps to be performed)**:- 2. These are the total number of steps required to process a query and generates results.

•**f_{main}(main algorithm)**:- It contains Process P. Process P contains Input ,Output and subordinates functions. It shows how the query will be processed into different modules and how the results are generated.

•**DD (deterministic data)**:- It contains Database data. Here we have considered MySQL, SQLite which contains number of queries. Such queries are user for showing results. Hence, SQLite is our DD.

•**NDD (non-deterministic data)**:- No. of input queries. In our system, user can enter numbers of queries so that we cannot judge how many queries user enters into single session. Hence, Number of Input queries are our NDD.

•**Memory shared**: - SQLite. SQLite will store information like Video Calling, Prism will be help over screen, Output of setup will be visible. Since it is the only memory shared in our system, we have included it in the SQLite.

•**CPU_{count}**: - 1. In our system, we require 1 CPU for server.

•**Success** = successfully recommended best system as per user's interest

•**Failure** = If application will not send the notification to user it will fail.

Subordinate functions:

Let Assume S be the system which executeCar Finder

$S = \{s, e, X, Y, F_{main}, NDD, DD, Success, Failure\}$

Where

s=Start State

e=End State

$X = \{\text{Set Of Inputs}\}$

$= \{x1, x2\}$

Where x1= Login and Registration

of User

x2= Number or user Id for video calling.

$Y = \{\text{Set of Outputs}\}$

$= \{y1, y2\}$

Where y1=Video Call

y2= Rays/Visual effect coming out of

Prism

$F_{main} = \{\text{Set of procedure}\}$

$= \{f1, f2\}$

Where,

f1= Take x1,x2 Input

f2= Give y1,y2 Output

State Transition Diagram:

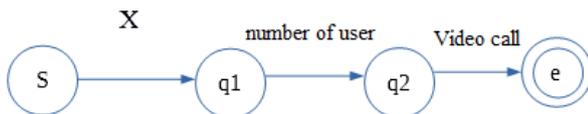


Fig: State Transition Diagram

Where,

s=input state

x=query

q1= Login and Registration of User,
Number or user Id for video calling

q2= Video Call, Rays/Visual effect coming out of Prism.

Explanation:

•The q1 state accept the ambiguous query ‘x’ from the state ‘s’ which is our initial state.

•The q2 state is meant for Login and Registration of User, Number or user Id for video calling that stores the query x which is accept in state q1. The application will enable Video Calling, Rays/Visual effect coming out of Prism.

10. ADVANTAGES AND DISADVANTAGES:

Advantages:

- Reduces Travel Cost
- More Flexible
- Increased Productivity.

Disadvantages:

- Time Delay between Responses
- The Technology Can Fail
- Can Be Harder to Focus.

11. CONCLUSION

Conclusion of this system, is to view the activities of the person at the other end if he is standing it will display the standing position. Video calling application will be used with the help of prism. And the final result will be stored at the server.

11. REFERENCES

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