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Virtual Reality(Hologram)

A.NAGA VENKATA KRISHNA
B.Tech-CSE
Hindustan University
Chennai-603103
venkata1897@gmail.com

E.HARI KRISHNA
B.Tech-CSE
Hindustan University
Chennai-603103
harichowdary40@gmail.com

P.SRIKANTH CHOWDARY
B.Tech-CSE
Hindustan University
Chennai-603103
srikanthchowdary289@gmail.com

Dr.RENJITH.P.N
Associate Professor.
School of Computing Sciences
Pnrenjith@hindustanuniv.ac.in

***Abstract*—Virtual Reality is seen as the high-end of human-computer interactions and it has the potential to target a wide range of applications. To improve the standardization and automation of disaster operation management, a new method of emergency management based on the activity network technology is presented. Firstly, the emergency plan is built upon emergency response activities by using the activity network technology. While a virtual trajectory may be represented using straight lines connecting waypoints of interest, this simple model does not accurately represent typical user behavior. We implemented the model within a framework that can be used for redirect food distribution within different virtual and physical environments. It is useful for the evaluation of redirected of parameters under varying conditions.**

Keywords*—Hologram, Virtual, Arduino UNO, Zigbee, Embedded C, Dot net, Arduino IDE.

I. INTRODUCTION

A hologram is the recorded interference pattern between a point sourced of light of fixed wavelength and a wavefield scattered from the object. A hologram is recorded in a two-or three-dimensional medium and contains information about the entire three-dimensional wavefield of the recorded object. When the hologram is illuminated by the reference beam, the diffraction pattern recreates the light field of the original object. The viewer is then able to see an image that is indistinguishable from the recorded object. This photographic technique of recording light scattered from an object and presenting it as a 3D image is called Holography. The object's representations generated by this technique are the most lifelike 3D renditions because its records information in a way closer to what our eyes use to see the world around us. Therefore, it is an attractive imaging technique since it allows the viewer to see a complete three- dimensional volume of one image.

To create a hologram, holography uses the wave nature of light. In a normal photograph, lenses are used to focus an image on film or an electronic chip, recording where there is light or not. With the holographic technique, the shape a light wave takes after it bounces off an object is recorded. It uses interfering waves of light to capture images that can be 3D. When waves of light meet, they interfere with each other, analogous to what happens with waves of water. The pattern created by the interference of waves contains the information used to make the holograms.

True 3D holograms could not be a practical reality without the invention of the laser. A laser creates waves of light that are coherent. It is this coherent light that makes it possible to record the light wave interference patterns of holography. While white light contains all of the different frequencies of light traveling in all directions, laser light produces light that has only one wavelength and one color.

In its basic form, three elements are necessary to create a hologram: an object or person, a laser beam, and a recording medium. A clear environment is also recommended to enable the light beams to intersect.

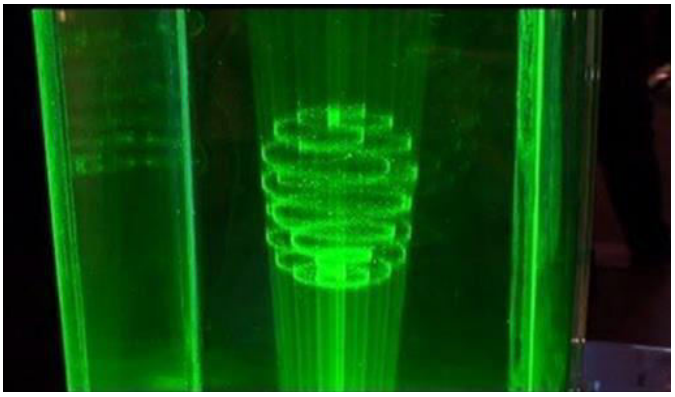

Fig. 1 Hologram

II. EXISTING SYSTEM

There are mainly two existing types of gesture recognition methods, i.e. vision- based and accelerometer and/or gyroscope based. These have some limitations like ambient optical noise, slower dynamic response, and relatively large data collections/processing of vision-based method. It has a less accuracy.

III. RELATED WORKS

There are numerous ways to make the hologram and virtual reality to the future extent are explained by the following authors. Author in [1] have proposed Drawing Abrasive Hologram Animations with Auto-Generated Scratch Patterns. Here, Abrasive holograms allow people to experiment with impressive quasi-holography and create hologram artwork through simple means of creating reflective scratches on sheets of plastic. Most of the reported accounts of abrasive

holography address the creation of three-dimensional illustrations.

Author in [2] have proposed a Hologram Selection in Realistic Indoor Optical Wireless Systems with Angle Diversity Receivers. Similarly, here, a new adaptive optical wireless system that employs a finite vocabulary of stored holograms. We propose a fast delay, angle, and power adaptive holograms (FDAPA-Holograms) approach based on a divide and conquer (D&C) methodology and evaluate it with angle diversity receivers in a mobile optical wireless system.

Processing of holograms such as gray level image binarization can be quite different from conventional images. The generation of binary holograms from gray level holograms can be implemented not only with conventional dithering or error diffusion methods but also sampling methods on the object image proposed recently it has been proposed by the author in [3].

IV. PROPOSED SYSTEM

In hologram, which detects wavelength distribution of a light source using a multiplex Fresnel hologram. In order to measure the wavelength distribution of the light source, a spectrometer is usually used, but in this case, it is difficult to measure the wavelength distribution while using the light source. To separate the block in light source food, cloth etc. We using Transmission and receiver section.

A. Basics of the Holography

A hologram is a recording in a two- or three-dimensional medium of the interference pattern formed when a point source of light (the reference beam) of fixed wavelength encounters light of the same fixed wavelength arriving from an object (the object beam). Ordinary light is made up of many different wavelengths, none of which maintains a fixed phase relationship with each other or with themselves over a period of time. It has poor temporal coherence. Such incoherent light is not capable of interfering with itself, which is the most important for the application of holography. So, lasers are used to produce light beams which are coherent over 10^10 wavelengths and more.

- **Interference:** It is a phenomenon in which two waves superpose to form a resultant wave of greater or lower amplitude. Interference usually refers to the waves that are coherent with each other.

B. Transmitter side

In the transmission side, the hologram is used to shows the virtual view to the peoples. It is possible with the help of the monitor and the CPU which is connected to the wireless sensor network with the virtual reality sensor. With the help of the dot net coding we can create a hologram on the transmission side.

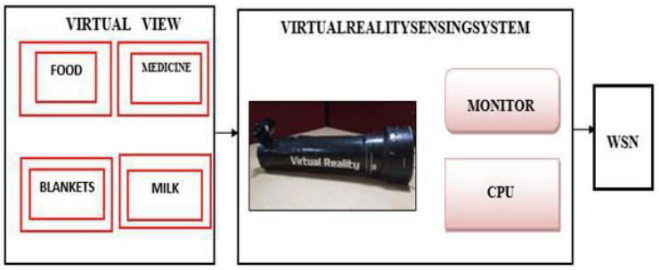

Fig. 3. Transmission side diagram

C. Receiver side

In the receiver side, the micro controller controls all the relay unit with the help of the embedded c coding. After, receiving the ZigBee message the microcontroller starts the process and deliver all the needs to the people.

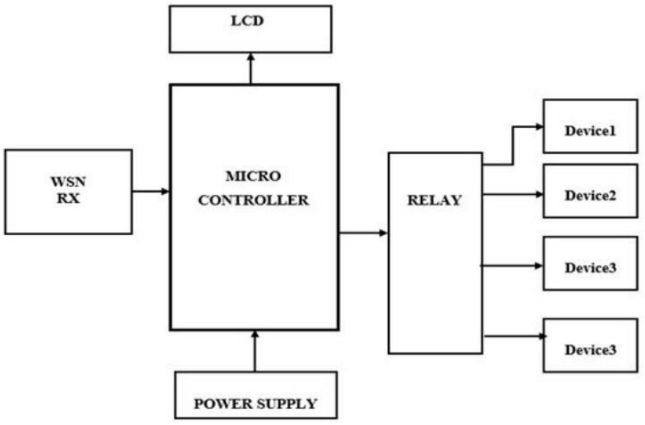

Fig. 4. Receiver side diagram

V. DESIGN OF THE PROPOSED HARDWARE SYSTEM

A. Arduino UNO

Arduino is a tool for making computers that can sense and control more of the physical world than your desktop computer. It's an open-source physical computing platform based on a simple microcontroller board, and a development environment for writing software for the board.

Fig. 5 Arduino UNO

VI. SOFTWARE DESCRIPTION

A. Arduino IDE

The Arduino integrated development environment (IDE) is a cross-platform application that is written in the programming language Java. It is used to write and upload programs to Arduino board. The source code for the IDE is released under the GNU General Public License, version 2. The Arduino IDE supports the languages C and C++ using special rules of code structuring.

VII. WORKING OF THE PROPOSED SYSTEM

A. The Iterative Encoding Process Is Described As Follows:

i. Symbol i (1,2,3,……,K) is used to denote the series of squared blocks, and each block contains 16 16 × neighboring pixels of the input image. Each block is placed at a random axial position. In the initial stage, a random phase-only pattern (in a range of [0, 2pi]) is used as a guess, i.e., denoted as (,)(,). In M μ ν Symbol n denotes the iteration number, and (,) μ denotes coordinate for the phase-only pattern plane.

ii. Wave propagation is conducted between the phase pattern plane and the image plane., () id denotes the axial distance, and (,) O ξ η denotes complex-valued wave front in the image plane. The symbol (,) ξ η denotes coordinate for the input image plane.

iii. A constraint is applied in the image plane for updating the complex-valued wave front (,) O ξ η using a specific block (i.e., within the block i) to generate an updated complex valued wave front'(,). O ξ η

iv. (iv) Subsequently, back propagation process is conducted by: (,) () (,) WP '(,) in id OO μ ν ξ η −= ao ¬¼ (2) where (,)(,) inO μ ν denotes the wave front in phase-only pattern plane. Hence, an updated phase-only pattern can be generated by using a constraint [33]–[35]. where | | denotes a modulus operation, and (,) ˆ (,) In M μ ν denotes the updated phase-only pattern.

v. The updated phase-only pattern is further used, and the steps (ii)–(iv) are repeatedly applied. After all blocks (i.e., i=K) are processed, a present threshold is used to judge whether the iterative process can be stopped. If the threshold cannot be satisfied, the updated phase-only pattern is further used for the next iteration, i.e., n=n+1. When a new iteration starts, the block symbol i should be reset as 1. If the threshold can be satisfied, the finally generated phase-only pattern is denoted as (,).M μ ν

vi. Finally, an average value of [(,)] angle M μ ν (where angle denotes phase extraction) can be calculated and used as a threshold for the binarization, hence a binary phase distribution can be correspondingly generated as ciphertext, i.e., (,). BM μ ν

In practice, a coefficient or factor can be multiplied by the calculated average value to be employed as a threshold for the binarization operation.

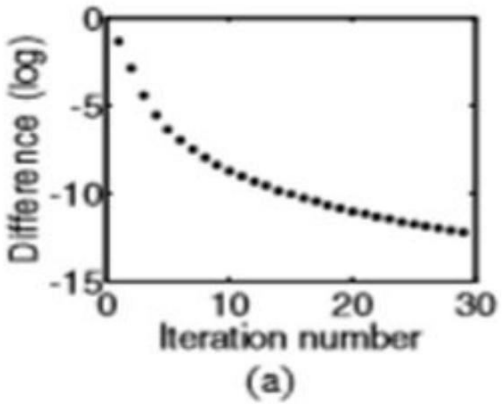

Fig. 10 (a) WP denotes free-space wave propagation.

For the decoding, binary phase-only pattern and setup parameters are applied.

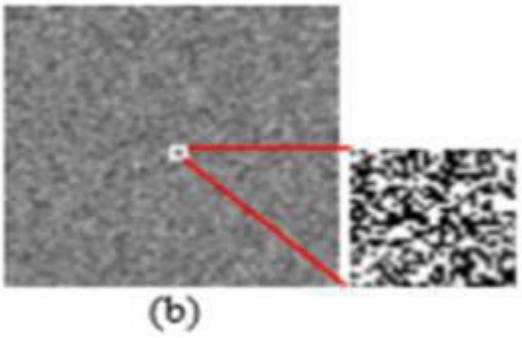

Fig. 10. (b) (b) computationally conducted to verify the validity.

VIII. RESULT

The final result of our project is given below.

CONCLUSION

We implemented the model within a framework that can be used for redirect food distribution within different virtual and physical environments. It is useful for the evaluation of redirected of parameters under varying conditions. In this paper, we using virtual reality due to light rays through the wall to display through the Buttons like FOOD, CLOTH, MEDICINE Etc. In future to be display long distance through the laser beam light.

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