Sixth Sense Technology Adoption by Hospital/ Infirmary Institutions

Ambuja Kulshreshtha

Assistant Professor, KG Reddy College of Engineering and Technology, Affiliated to JNTU Hyderabad, Hyderabad, Telangana

Abstract: **In this digital revolution era where everything is digitized, to the extent that our day to day activities deals with digital usage such as mobiles, laptop and other. Sixth sense technology is one of the digital application which are enabled with gestures.Using this innovative approach with real time application i.e. hospital management helps in ease of doing business as well as digitalizing the process. This paper illustrates the importance of a hospital management using sixth sense technology. It enables the user to read/review authorize any kind of information. Since it's based on gestures it emphasizes importance of senses of a human body which also indicates manipulation of data through these senses.**

Index Terms- **Sixth sense, digitalizing, senses, gestures.**

I. INTRODUCTION

Computers are one of the best and rarest of gift for mankind which ruled them for centuries. As it started rolling out, the usage of computers increased tremendously in every nook corner of the world like educational institutions, house hold, hospitals, offices, super markets etc. In 21st century people are urging to take world in their hands hence revolutionizing of smart environment. Technologies like Ubiquitous/pervasive and ambient intelligence satisfy the maximum need of smart world but are not coupled high with internet, hence another technology extension such Internet of Things (IoT) as well as sixth sense is an emerging technology to influence the internet, communication technologies and gestures. In simple terms "Internet of Things" connects everything through internet whether it's living or non living things. Any living being or person normally have five senses as in the part of their eyes, skin , nose, tongue and ears which had their basic activities and functions such as eyes for seeing, skin for touching ,tongue for tasting, ears for listening and nose for smelling.

There may be few other senses which can enable and identify sense things which may not be basic as well as biological. In order to identify many curious things collaborating with help of internet with the advent of a technology to integrate the real world with the digital world a new technology is established which can enable the sense things that are neither basic nor biological can be identified as sixth sense technology. It is an ability to have notion for subtle-dimension or the unseen world as well as to understand the major cause and effect relationship behind many events, which is beyond the understanding of the intellect. Extrasensory perception (ESP), clairvoyance, premonition, intuition are few other names for sixth sense or subtle perception ability. This technology can bring the entire world in your hands as a computer via hand gestures. It can be used anywhere around the world such as colleges, educational institution, supermarkets, , map navigator, jeweler shops etc. Using hand gestures we can zoom in/ out or may be pan like any other using gesture like multi touch system does. This technology can track the quality of an object, as well as directions for a particular source and destination, etc. Augmented reality [4] is the concept which bridges between physical world and digital world. Augmented reality combines virtual world with the real world, even the fictitious world can be experienced. The concept of augmented reality can be combined with sixth sense in order to have better gadgets that make us machine and if it can embed into all the source fields then the world will be ease and in better way.

II. SIXTH SENSE TECHNOLOGY

Sixth Sense is a cutting-edge technology which can be used for accessing large amount of digital information in the world specifically with wearable gestures. It is a sophisticated device which allows users to be part of the physical world yet can access the digital information which exits in World Wide Web by using natural gestures. It was in 1997 Steve Mann developed a neck worn projector with a camera for implementing sixth sense technology. Further, Pattie Maes and Pranav Mistry carried this forward and developed a new hi-tech system which they call Sixth Sense, presented in TED conference [4]. The Sixth Sense technology will reform the world in all aspects, such as tasks which take few minutes in present situation can perform in few milliseconds due to sixth sense technology.

III. COMPONENTS

Assemblies

The six main components of the sixth sense device are:

- Camera
- Projector
- Mirror
- Mobile component
- Color Marks

The sixth sense technology concept consists of a projector, mirror, and camera. The component is a portable mobile device hardware pendant. Both the projector and camera are connected to a mobile device in a user's pocket projector
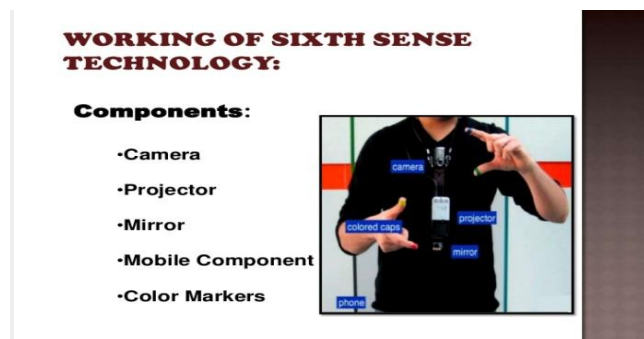
Camera:

The camera is a Sixth Sense feeder. The camera functions as a digital eye of the device. It basically captures the user's perception by looking at the device. The video capture captured by the camera is transmitted to a mobile device that performs a computational vision calculation

Projector:

The projector is the Sixth Sense technology output device. The projector visually adds surfaces, walls, and physical objects that allow the user to interact by presenting digital information and graphical user interfaces. The mobile computing device provides content designed for the projector. The projector unit used in the prototype works with a rechargeable battery. The main functions of a projector can be listed as follows: Projects the graphical user interface for selected applications on the front surfaces or on the walls. Adds physical objects that allow a user to interact, presenting just-in-time information and related information about the Internet

Mirror:

The mirror reflects the projector that comes out of the projector and therefore helps the project to a desired location on walls or surfaces. The user can change the tilt of the mirror manually to change the position of the protrusion. Consider an example, User intend to prefer the projection in an application from front surface to ground surface, he can change the tilt of the mirror to change the protrusion. That is why the mirror in the sixth sense helps solve the limited projection range of the projector. Microphone The Microphone is an optional component for Sixth Sense. It is required when the paper is used as a computer interface. When a user wants to use a sheet of paper from an interactive surface, he keeps the microphone on paper. Touching the paper will cause the microphone so connected to capture the user's audio signals. This information is transmitted to the computing device for processing. Later, combined with the user's fingerprint tracking costs, the system can identify accurate loss-making events on paper.

Mobile component:

Mobile phone is a device in a user's pocket as a process device. The software that activates all system features works with this computer device. This device can be a cell phone or a small laptop. The camera, projector and microphone are connected to this device via a wired or wireless connection. The details of the software that comes with this device are described in the following section. The mobile communication device is also connected to the Internet via a 3G network or a wireless connection.

Color markers:

It is an important feature of a technology which uses four color markers as follows res marker, green marker, blue marker and finally yellow marker. The user who intended to you this technology can wear them at their finger tips and helps in making a hand gesture which can perform several task such as painting, capturing images and many other activities.

IV. HARDWARE REQUIRNMENTS

1. Hardware Required

- Mobile (Can be any OS Android as well as I phone)
- It has multitasking capability.
- Built-in camera provides execution of both
- Gesture tracking engine.
- Gesture enabled application.

2. Projector

- Pocket projector
- It can augment nearby surfaces.
- A LED based projector.
- Suitable for mobile usage

3. Software Required

- Open sources such as JAVA.
- Computer vision library
- The software for the sixth sense prototype can be developed on a Microsoft Windows platform using C#, WPF

V. PROTOTYPE

Zoom In/ Out

It is one of the important feature used by hospital authorities for reading charts and data. The diagrammatic representation of structures as well as minute content of the description can be enlarged to learn about it. Authorities can zoom in or zoom out using hand gestures without use of any computer. Since data is enlarged, the charts and other content can be elaborated and visuals are of high resolutions.

Estimation and analysis of a data

In a sixth sense technology, any plain structure, it can be anything such as palm or wall which can be act as a projector where they can viewed at that instant. This keypad can appear as calculator which has all the available numeric buttons. This also eases task of carrying electronic devices such as mobile or calculator along which is more beneficial for statics study.

Sophisticated online experience

It is one of the most constructive approaches of this technology as information is available day and night. Consider an example such as journals, Charts, books etc while reading those more live information can be tracked and projected without being connected to internet. It can also recognize all available previous chart as well as diagnosis from the books or article and display them for users. It can also convert readable text into an audible and other important information regarding text. It can prescribe the information as well as diagnosis of a particular treatment and information regarding pros and cons of treatment. It can also helps us understanding a procedure required for a surgery.

VI. ADVANTAGES

Video Conferencing and buzzing

Using this technology it can access all the data needed for the information, it can also helps in connecting the doctors and other authorities all round the world which can be through video or audio. They can attend important sessions through calls which helps them in a gaining a vast source of knowledge, hence easing them to carry all the electronic devices.

Capturing the data

Once a while its necessary to have a picture for further references and it may not be possible while travelling or when you're at task, at such moments it's easy to capture using sixth sense technology. Using fingers gesture we can capture image and project them on screen. Resizing and other modifications can be done on screen as per individual choices, hence doctors and concerned authorities can be avail it to read the charts of a patients and other related research data.

Virtual Environment

This feature accredit user to establish computerized environment at any place of time without having real accessories such as mouse and can establish lab anywhere without required input and output devices as well as playing games ,movies and others.

VII. CONCLUSION

Induction of an sixth sense technology in daily life as well as in hospital can ensure better understanding as well as ease of usage. It helps in better understanding of a diagnosis as well as learning of a treatment. It helps in saving a vast amount of resources as well as time spent in researching the data. It eases the burden of patients for carrying a large amount of files of previous diagnosis as well as other important chart required for the doctor. Interacting and learning among doctors to share a data for further clarification. Emergency situations can be handled more accurately and precisely thus saving the precious life of a human being.

ACKNOWLEDGMENT

BILBILOGRAPHY

[1]. Relevant feature for video based continuous sign language recognition, Department of Technical Computer Science, Aachen University of Technology Aachen, Germany, 2000.
[2]. Building temporal models for gesture recognition. In proceedings British Machine Vision Conference, 2000, pages 32-41.
[3]. Use your hand as a 3-D mouse or relative orientation from extended sequences of sparse point and line correspondences using the affine trifocal tensor. In proceedings 5th European Conference on Computer Vision, 1998, pages 141-157.
[4]. Monika Arora, Basic Principles of Sixth Sense Technology, VSRD-IJCSIT, Vol. 2 (8), 2012
[5]. Meenakshi Gupta, Shruti Sharma, Virtual Class room using six sense Technology, IOSR Journal of Computer Engineering (IOSRJCE) Volume 6, Issue 4 (Sep. -Oct. 2012)
[6]. Intelligent Image Processing, Wiley, 2001
[7]. Lenin Ravindranath, Venkata N. Padmanabhan, Piyush Agrawal, Sixth Sense: RFID-based Enterprise Intelligence, Research paper.
[8]. Content about Gesture recognition in wikipedia: http://en.wikipedia.org/wiki/Gesture_recognition
[9]. Working of augmented technology and its working: http://www.howstuffworks.com/augmented-reality.html
[10]. Information about Gesture recognition given in an article-http://www.engineersgarage.com/articles/gesture-recognition-technology