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World Become A Genius through Sixth Sense Technology

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Abstract

Now a days we can see many type of the technology which is very innovative and interesting for human being but now a latest technology is called "sixthsense" technology, whose researcher was Steve mann in 1990 & its work to proceed by younger master mind researcher mr.Pranav Mistry. We've evolved over millions of years to sense the world around us. When we encounter something, someone or some place, we use our five natural senses to perceive information about it; that information helps us make decisions and chose the right actions to take. But arguably the most useful information that can help us make the right decision is not naturally perceivable with our five senses, namely the data, information and knowledge that mankind has accumulated about everything and which is increasingly all available online. Although the miniaturization of computing devices allows us to carry computers in our pockets, keeping us continually connected to the digital world, there is no link between our digital devices and our interactions with the physical world. Information is confined traditionally on paper or digitally on a screen. Sixth Sense bridges this gap, bringing intangible, digital information out into the tangible world, and allowing us to interact with this information via natural hand gestures. 'SixthSense' frees information from its confines by seamlessly integrating it with reality, and thus making the entire world your computer

Keywords: Sixth sense thechology.

Introduction

Sixth sense technology

What is SixthSense: Sixth Sense in scientific (or non-scientific) terms is defined as Extra Sensory Perception or in short ESP. It involves the reception of information not gained through any of the five senses. Nor is it taken from any experiences from the past or known. Sixth Sense aims to more seamlessly integrate online information and tech into everyday life. By making available information needed for decision-making beyond what we have access to with our five senses, it effectively gives users a sixth sense.

Sixth sense prototype

Earlier sixth sense prototype:

Sixth Sense technology (a camera combined with a light source) was developed in 1997 as a headworn device, and in 1998 as a neckworn object, but the Sixth Sense name for this work was not coined and published until 2001. Mann referred to this wearable computing technology as affording a "Synthetic Synesthesia of the Sixth Sense", believing that wearable computing and digital information could act in addition to the five traditional senses. Ten years later, Pattie Maes, also with MIT Media Lab, used the term "Sixth Sense" in this same context, in a TED talk. Similarly, other inventors have used the term sixth-sense technology to describe new capabilities that augment the traditional five human senses.

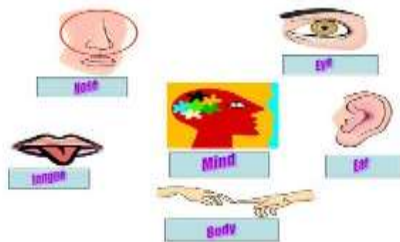


Fig1.1 Sixsenses



Fig: Wearable gesture-sensing wireless

computer vision system with stereo cameras and 3D virtual reality display for AR (Augmented Reality), recognizing hand-grasping gesture, Steve Mann, MIT Media lab, 1994.

Latest sixth sense prototype:

Steve Mann implemented the Sixth Sense technology as the neck worn projector with a camera system. His work was carried forward by Pranav Mistry, an Indian research assistant in MIT Media Lab. He came up with exciting new applications from this technology. Sixth sense technology was developed at media labs in MIT and coined as Wear Ur World (WUW). The prototype was built from an ordinary webcam and a battery-powered 3M projector, with an attached mirror — all connected to an internet-enabled mobile phone. The setup, which costs less than \$350, allows the user to project information from the phone onto any surface — walls, the body of another person or even your hand. Mistry wore the device on a lanyard around his neck, and colored Magic Marker caps on four fingers (red, blue, green and yellow) helped the camera distinguish the four fingers and recognize his hand gestures with software that Mistry created.

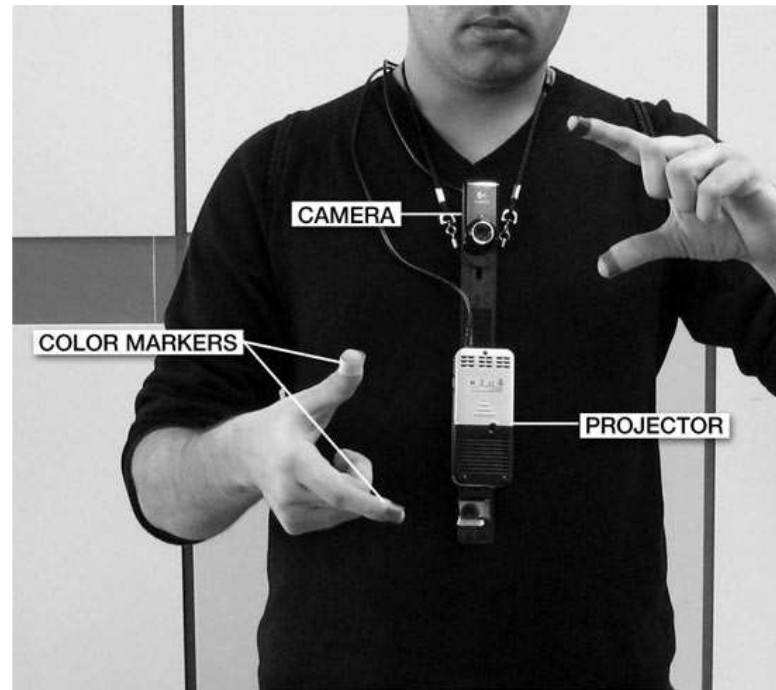


Fig: Latest Prototype for SixthSense

Why we choose SixthSense Technology: Humans take decisions after acquiring inputs from the senses. But the information we collect aren't enough to result in the right decisions. But the information which could help making a good decision is largely available on internet. Although the information can be gathered by connecting devices like computers and mobiles but they are restricted to the screen and there is no direct interaction between the tangible physical world and intangible digital world. This sixth sense technology provides us with the freedom of interacting with the digital world with hand gestures. This technology has a wide application in the field of artificial intelligence. This methodology can aid in synthesis of bots that will be able to interact with humans.

Working of sixth sense technology

Components related to SixthSense technology:

- Hardware component:
 - Camera
 - Projector
 - Mirror
 - Mobile Component
 - Color Markers

Camera: The camera is the key input device of the SixthSense system. The camera acts as a digital eye of the system. It basically captures the scene the user is looking at.

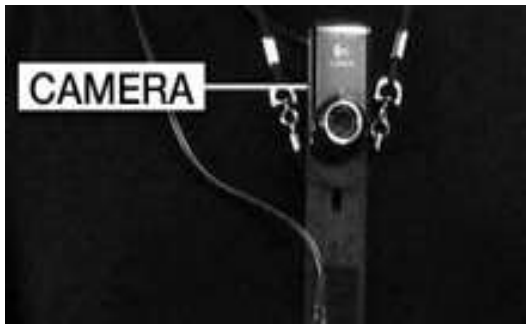


Fig: Camera

Projector: The projector is the key output device of the SixthSense system. The projector visually augments surfaces, walls and physical objects the user is interacting with by projecting digital information and graphical user interfaces.

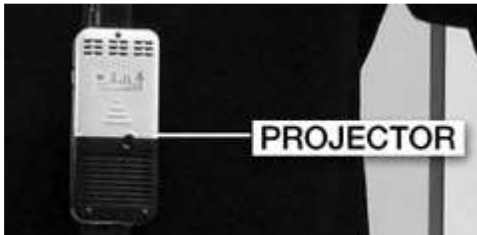


Fig: Projector

Mirror: The mirror reflects the projection coming out from the projector and thus helps in projecting onto the desired locations on walls or surfaces. The user manually can change the tilt of the mirror to change the location of the projection



Fig: Mirror

Mobile component: The SixthSense system uses a mobile computing device in user's pocket as the processing device. The software program enabling all the features of the system runs on this computing device. This device can be a mobile phone or a small laptop computer. The camera, the projector and the microphone are connected to this device using wired or wireless connection. The detail of the software program that runs on this device is provided in next section. The mobile computing device is also connected to the Internet via 3G network or wireless connection..



Fig: Mobile component

Color markers: Color Markers → It is at the tip of the user's fingers . → Marking the user's fingers with red, yellow, green, and blue tape helps the webcam recognize gestures → The movements and arrangements of these markers are interpreted into gestures that act as interaction instructions for the projected application interfaces.



How does work sixth sense technology

It is a technology which is aimed at interpreting human gestures with the help of mathematical algorithms. Gesture recognition technique basically focuses on the emotion recognition from the face and hand gesture recognition. Gender recognition technique enables humans to interact with computers in a more direct way without using any external interfacing devices. It can provide a much better alternative to text user interfaces and graphical user interface which requires the need of a keyboard or mouse to interact with the computer. Interfaces which solely depends on the gestures requires precise hand pose tracking. In the early versions of gesture recognition process special type of hand gloves which provide information about hand position orientation and flux of the fingers. In the SixthSense devices colored bands are used for this purpose. Once hand pose has been captured the gestures can be recognized using different technique's. Neural network approaches or statistical templates are the commonly used techniques used for the recognition purposes. This technique have an high accuracy usually showing accuracy of more than 95%. Time dependent neural network will also be used for real time recognition of the gestures.

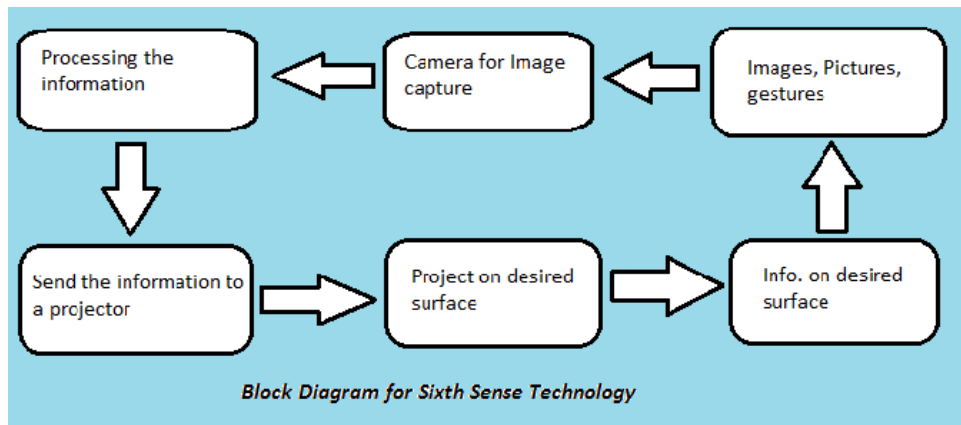


Fig: Working of SixthSense

Magic of sixth sense technology

Zoom In/Zoom Out:

This is the basic feature used by the students while doing case study. The miniature content of the books can be magnified to focus more light on it. The user can zoom out or zoom in using intuitive hand movements. By the use of this technology, user can focus on deep study of the articles without using computer. Secondly, pictures can be magnified and contents can be deeply visualized.



Fig: picture Zoom in/Zoom out

Calculations and Data Analyze: With the help of six sense technology, a keypad can be projected on our palm where the numbers will be available on the finger. This keypad looks like a calculator and contains all the numeric buttons. Secondly students may not need to carry Mobile Device or calculator along with themselves all the time. The key will come on the one hand fingers whereas the other hand fingers will be used to select the keys. This is very beneficial for the account students.



Fig: Calculation and data analyze

Creating Multimedia Online Experience: This is the most beneficial segment of six sense technology as a piece of paper can be easily converted into paper. For example, while reading books, journals, newspaper. While reading the content, more live information can be projected on a particular topic without being connected to internet. The device can also recognize articles and newspaper, retrieve the latest related stories or video from the internet and then display them on pages for user. User may not necessary use dictionary or encyclopedia. For Book Lovers, it is like a blessing and miracle, whenever we open the book, with the help of this technology, we can convert readable text into audible and much more information about that particular text.



Fig: Creating Multimedia online application

Taking Pictures: Sometimes it happens that student may need to capture the images while travelling so that they can be used for the future use and study about them. For this, It is not necessary to carry cameras, rather picture can be captured and saved by using six sense technology. If we fashion our fingers as shown in the fingers for any particular snapshot, the image of that particular area will be captured. Infact After taking the desired number of pictures, we can project them onto the surface and use our hand gesture to sort through the photos, organize and

resize them. If this technology does nothing else. The idea is that the students can simply use their hands to draw images on the wall and take picture with their hands can be used laterally.



Fig: Taking Picture

Getting Information about students Results: Students can get the various information's such as admit cards, result, online submission status, project status etc using six sense technology without being connected to internet. It helps to get the information about anything instantly.

Magical Teaching White Board: Black and white teaching boards are outdated in fact smart board is latest these days and are very adaptable also. But when we have to teach something on smart board, so we have to connect it to our laptops, notebook so that internet can be accessed. But integrating smart board with six sense technology will be a big benefit for the academicians.



Fig: 3D Drawing, Magical Board

Digital notes

With the six sense technology, a dummy hand written document can be simply transferred into interactive document. While reading the notes, their content can be modified, altered with more content by converting them to digital notes as shown in figure.

[http:// www.ijesrt.com](http://www.ijesrt.com)



Fig: Digital Notes

Advantage

- **Portable:** One of the main advantages of the Sixth Sense devices is its small size and portability. It can be easily carried around without any difficulty. The prototype of the Sixth Sense is designed in such a way that it gives more importance to the portability factor. All the devices are light in weight and the Smartphone can easily fit in to the user's pocket. Support Multi touch and Multi user interaction. Multi touch and Multi user interaction is another added feature of the Sixth Sense devices. Multi sensing technique allows the user to interact with system with more than one finger at a time. Sixth Sense devices also incorporate Multi user functionality. This is typically useful for large interaction scenarios such as interactive table tops and walls.
- **Cost Effective:** The cost incurred for the construction of the Sixth Sense prototype is quite low. It was made from parts collected together from common devices. And a typical Sixth Sense device costs up to \$300. The Sixth Sense devices have not been made in large scale for commercial purpose. Once that happens it's almost certain that the device will cost much lower than the current price.
- **Data access directly from the machines in real time:** With the help of a Sixth Sense device the user can easily access data from any machine at real time speed. The user doesn't require any machine human interface to access the data. The data access through recognition of hand gestures is much easier and user friendlier compared to the text user interface or graphical user interface which requires keyboard or mouse.
- **Mind map the idea anywhere:** With the advent of the Sixth Sense device, requirement of a platform or a screen to analyze and interpret the data has become obsolete. We can project the information onto any surface and can work and manage the data as per our convenience.
- **Open Source Software:** The software that is used to interpret and analysis the data collected

by the device is going to be made open source as said by its inventor. This will enable other developers to contribute to the development of the system.

What is in future through sixth sense technology

1 About: Mouseless is an invisible computer mouse that provides the familiarity of interaction of a physical mouse without actually needing a real hardware mouse.

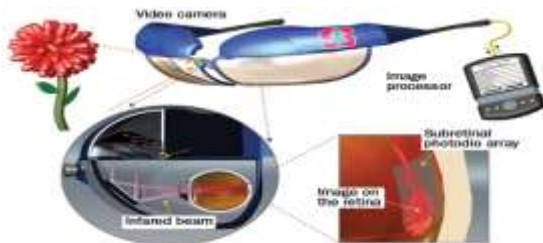


2 Virtual Environment: This facility enables user to create computerized environment anywhere, any time without having the real components such as having mouse on the table. The table top can be converted into computer screen. User can create computer lab anywhere without having all the input and output devices.



Fig: Computer Friendly Environment

Camera can act as an eye for the blind person



Conclusion

The key here is that Sixth Sense recognizes the objects around you, displaying information automatically and letting you access it in any way you want, in the simplest way possible. This will have different application for different developers

just depending upon how he imagines and what he wants. It can always be expected that this technology has a bright future because it might bring about a change in the way we look at the world .It can really create a magic.

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