
Topic of Presentation

Sixth Sense Technology...

Team Members :

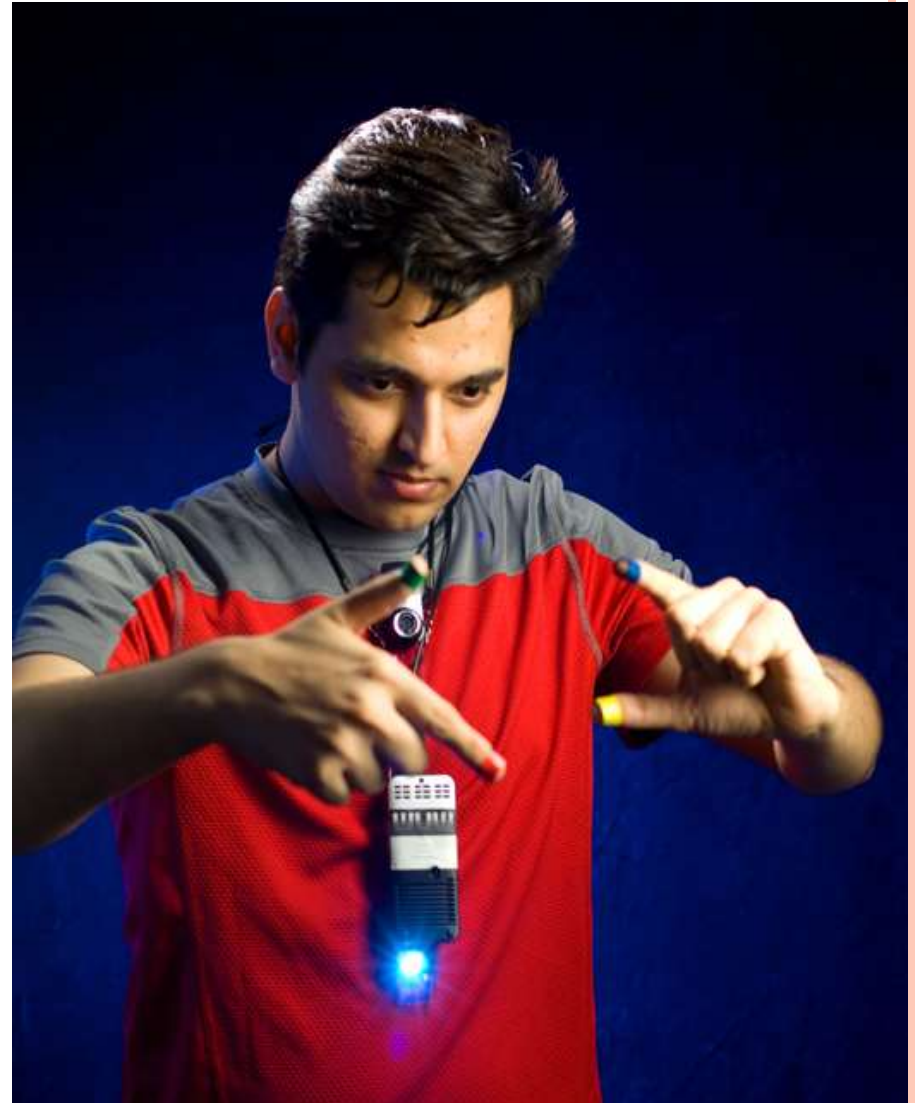
- Vicky Kumar
 - Sagar Jangid
 - Babulal Choudhary
 - Badal Chaudhary
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INTRODUCTION

- **Sixth Sense is a wearable gestural interface that augments** the physical world around us with digital information and lets us use natural hand gestures to interact with that information.
- Steve Mann is considered as the father of Sixth Sense Technology who made wearable computer in 1990. He implemented the Sixth Sense Technology as the neck worn projector with a camera system (which Mann originally referred to as **“Synthetic Synesthesia of the Sixth Sense”**).

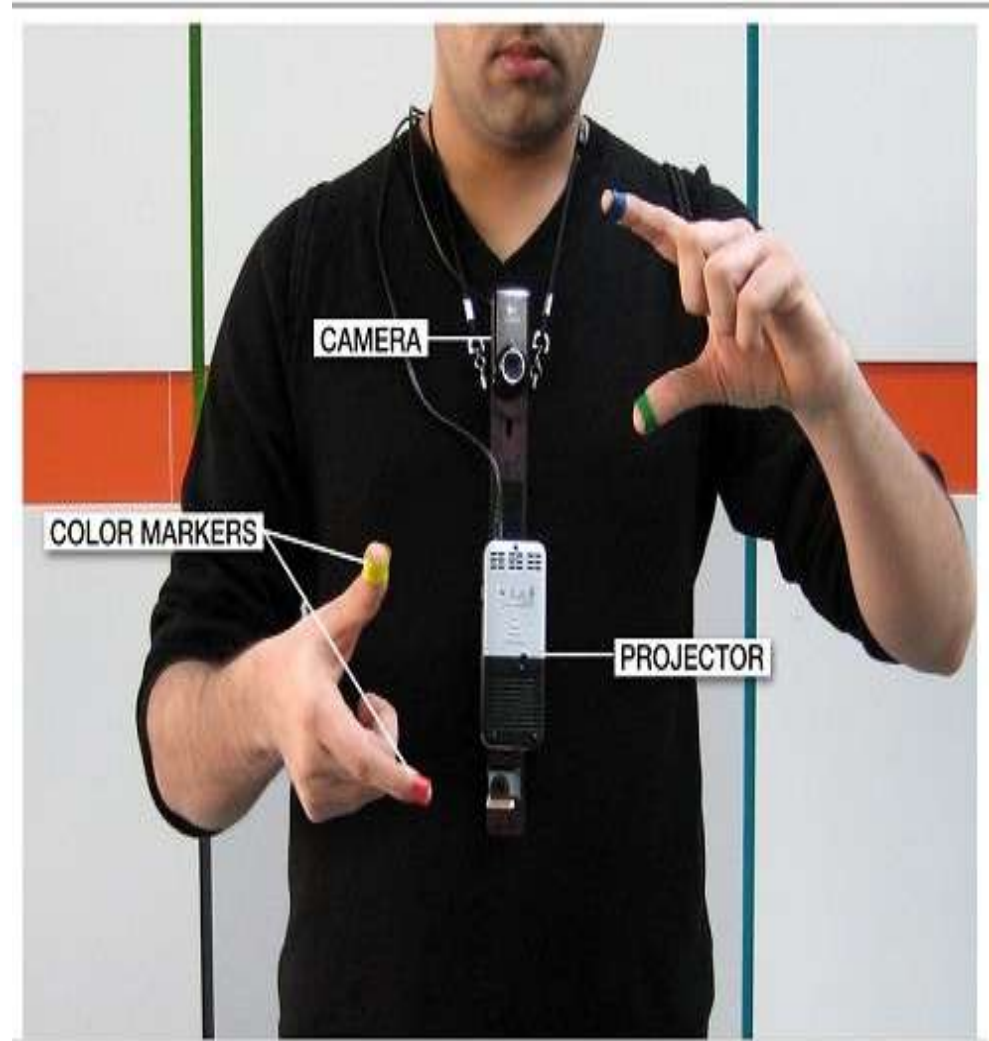


THEN HIS WORK WAS CARRIED FORWARD BY PRANAV MISTRY (PH.D STUDENT IN THE FLUID INTERFACES GROUP AT THE MIT MEDIA LAB).

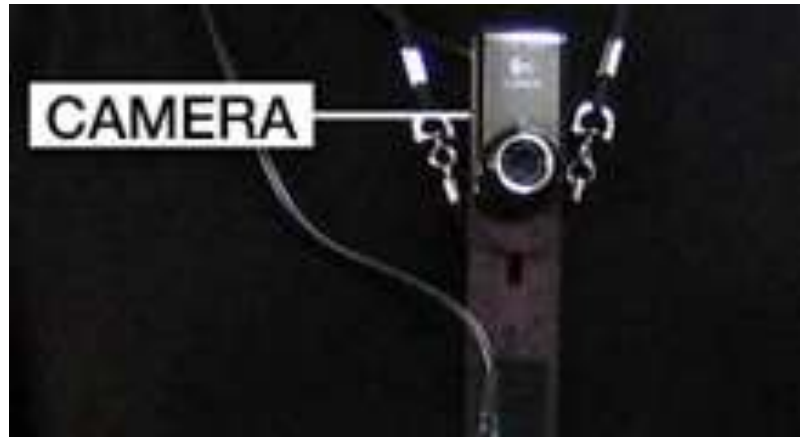


THE DEVICES WHICH ARE USED IN **SIXTH SENSE** TECHNOLOGY ARE:

CAMERA
COLORED MARKER.
MOBILE COMPONENT
MIRROR
PROJECTOR



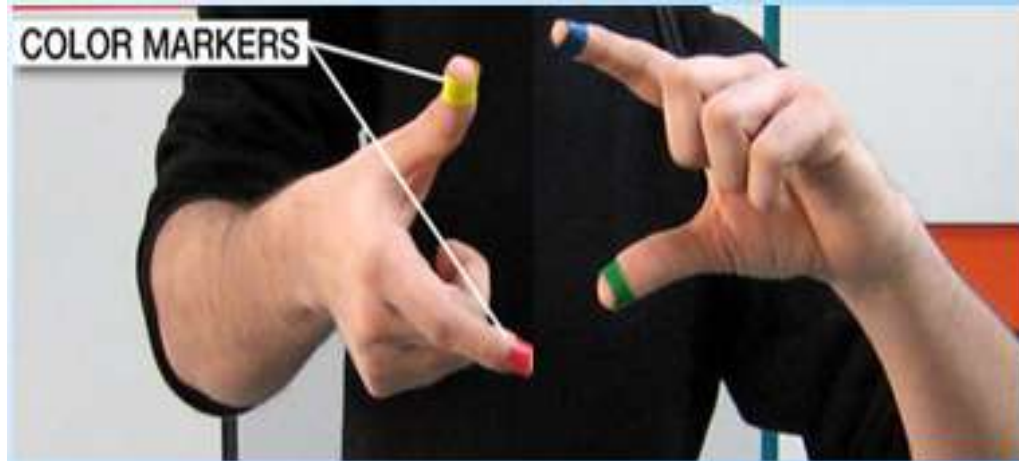
Camera



- Captures an object in view and tracks the user's hand gestures
- It sends the data to smart phone
- It acts as a digital eye, connecting you to the world of digital information



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 makers are interpreted into gestures that act as interaction instructions for the projected application interfaces.



Mirror

MIRROR ←



- The usage of the mirror is significant as the projector dangles pointing downwards from the neck.

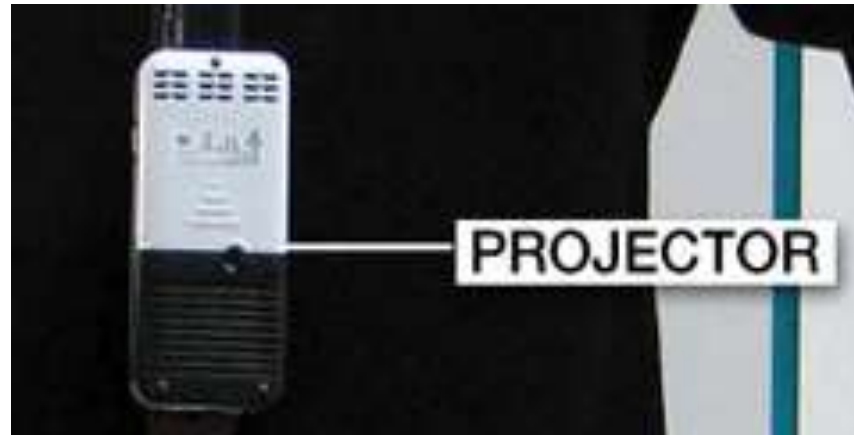
Smart Phone



- A **Web-enabled** smart phone in the user's pocket processes the video data
- Other software searches the Web and interprets the hand gestures



Projector

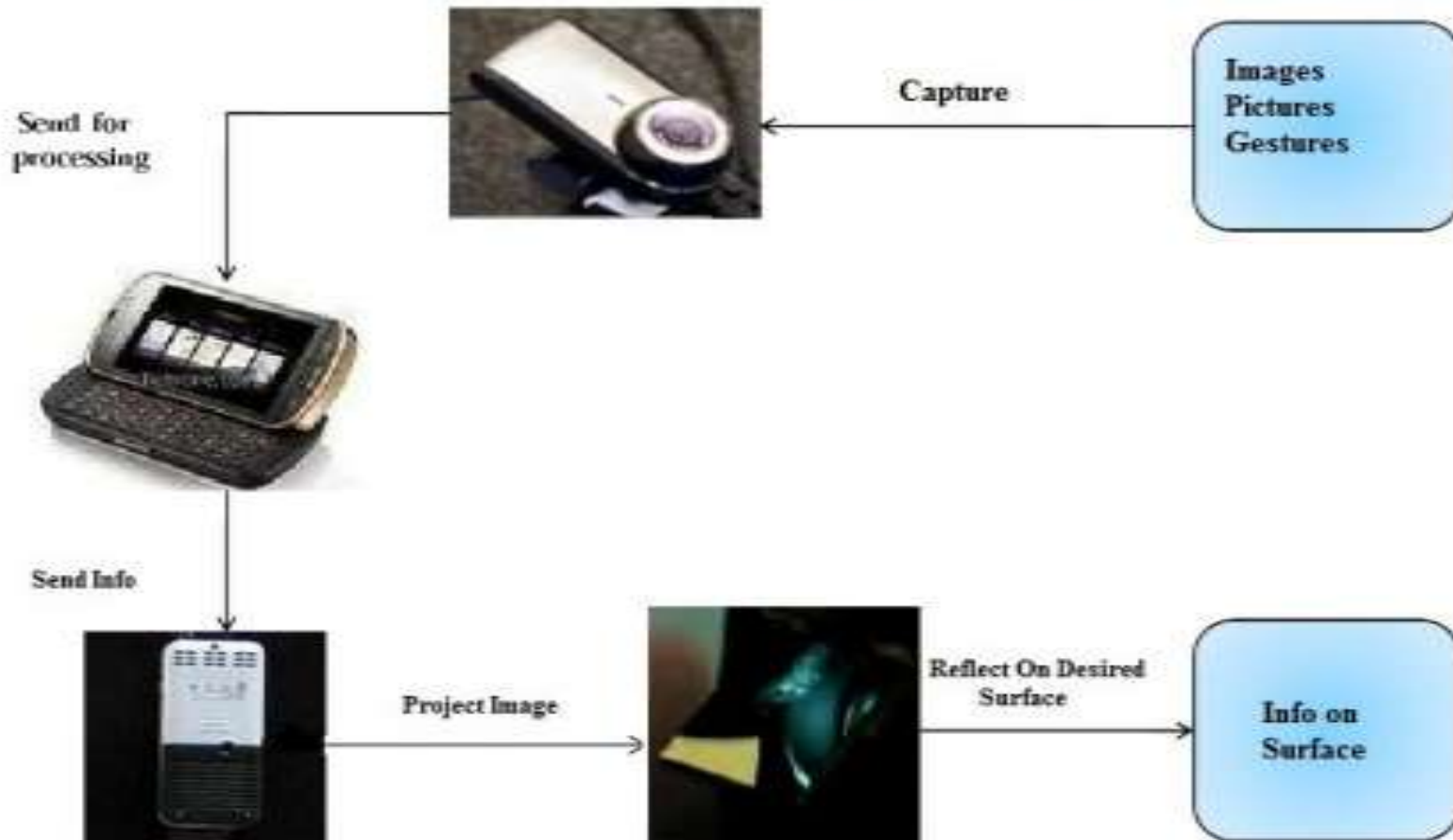


- The projector **projects** visual information enabling surfaces and physical objects to be used as interfaces
- The project itself contains a **battery** inside, with **3 hours** of battery life.
- A tiny LED projector displays data sent from the smart phone on any surface in view—object, wall, or person.



BLOCK DIAGRAM

The Working Of The Sixth Sense Device



APPLICATIONS



Viewing Map



Taking Pictures



Drawing Application



Making Calls



Interacting with physical objects



Getting Information

- Product information
- Book Information
- Flight Updates



Make a call

- You can use the Sixth Sense to project a keypad onto your hand, then use that virtual keypad to make a call.



Call up a map

- With the map application we can call up the map of our choice and then use thumbs and index fingers to navigate the map



Check the time

- Draw a circle on your wrist to get a virtual watch that gives you the correct time



Create multimedia reading experiences

- Sixth Sense can be programmed to project related videos onto newspaper articles you are reading



Get flight updates

- The system will recognize your boarding pass and let you know whether your flight is on time and if the gate has changed.



Feed information on people

- The system will project relevant information about a person such as what they do, where they work, and so on.



Take pictures

- If you fashion your index fingers and thumbs into a square ("framing" gesture), the system will snap a photo.
- After taking the desired number of photos, we can project them onto a surface, and use gestures to sort through the photos, and organize and resize them.



Drawing application

- The drawing application lets the user draw on any surface by tracking the fingertip movements of the user's index finger.



Zooming features

- The user can zoom in or zoom out using intuitive hand movements



Get product information

- Sixth Sense uses image recognition or marker technology to recognize products we pick up, then feeds us information on those products.



Get book information

- The system can project Amazon ratings on that book, as well as reviews and other relevant information



ADVANTAGES

- Portable
- Support Multi touch and Multi user interaction
- Cost Effective(300\$)
- Data access directly from the machines in real time
- Mind map the idea anywhere
- Open Source Software



DISADVANTAGES

- Hardware limitations of the devices, that we currently carry around with us.
- For example many phones will not allow the external camera feed to be manipulated in real time.
- Post processing can occur however.



CONCLUSION

- Sixth Sense recognizes the objects around us, displaying information automatically and letting us to access it in any way we need.
- The Sixth Sense prototype implements several applications that demonstrate the usefulness, viability and flexibility of the system.
- The potential of becoming the ultimate "transparent" user interface for accessing information about everything around us.
- Allowing us to interact with this information via natural hand gestures



FUTURE ENHANCEMENTS

- To get rid of color markers.
- To incorporate camera and projector inside mobile computing device.
- To have 3D gesture tracking.
- To make Sixth Sense work as fifth Sense for disabled person.



THANK

YOU!!!

