

## **VIRTUAL REALITY IS COMING TOGETHER, FLOWING TOGETHER & JOINING TOGETHER – THE CONFLUENCE OF REALITY**

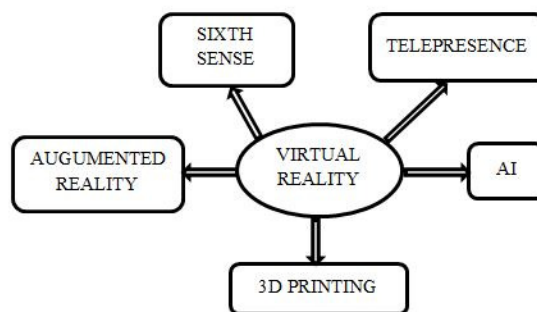
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### **I. INTRODUCTION**

Nowadays Education plays a vital role in individual's life. For most of the students learning by experiencing is much easier than learning by listening. Imagination and creativity are the key factor that evolves virtual reality. VR or computer simulated reality is created with software where user accepts artificial environment as real environment. In other words VR replaces the real world with a simulated one. In this article, the various concepts used in VR, platforms of VR and applications of VR in various fields are discussed.

- SIXTH SENSE TECHNOLOGY
- TELEPRESENCE
- MOUNTED WEARABLE COMPUTERS/DEVICES
- 3D PRINTING



- SURFACE MODELING

**Fig 1 :- The Confluence of VR**

### **II. CONCEPTS USED IN VR**

VR is implemented by various concepts such as

- AUGUMENTED REALITY

#### **AUGUMENTED REALITY**

AR uses the real environment and overlays the digital information on to it. AR does not create an artificial environment as like VR.

## **SIXTH SENSE TECHNOLOGY**

Sixth sense technology connects the real world with the digital information with help of hand gestures. More wearable devices are used in this technology as input/output devices.

The components in this technology are as follows:

- Camera
- Projector
- Mobile component
- Colored markers
- Mirror

## **TELEPRESENCE**

This technique focuses on the virtual presence of the object instead of making physical appearance. 3D telepresence is a recent invention in VR that allows a person to feel the object in a three dimensional view without the use of 3D glasses.

## **3D PRINTING**

The object what we imagine will become possible with the help of 3D VR printing. In recent days 3D printing technology is getting more attention in Industrial Automation Domain.

## **SURFACE MODELING**

Surface Modeling is a booming technology today. With the help of image processing techniques object identification, content extraction can be done in surface modeling. This modeling is used in VR, AR and sixth sense technology.

## **III. APPLICATIONS**

- Education Technology
- Gaming
- Human Brain computer interface
- Media and Entertainment
- Medical field
- Civil constructions
- Robotics Technology

## **IV. PLATFORM ANALYSIS**

### **1. EON REALITY**

Eon reality is the leading service provider which provides us AR and VR library for creating our own application. It also provides us content creation and developer tool for implementing VR.

### **2. VIZARD VIRTUAL REALITY**

Vizard virtual reality is leading software which is used to create Rapid application

development with full HMD, Motion trackers and 3D displays.

## V. FOCUSING APPLICATION

### VIRTUAL REALITY BASED INDUSTRIAL VISIT

In general Industrial visits provide industrial exposure to gain deeper knowledge about the various domains. Using Virtual reality technique we can realize the industrial environment without reaching to the physical location. The following scenarios can be implemented in education technology sectors.

#### SCENARIOS

##### 1. DATA CENTER VISIT

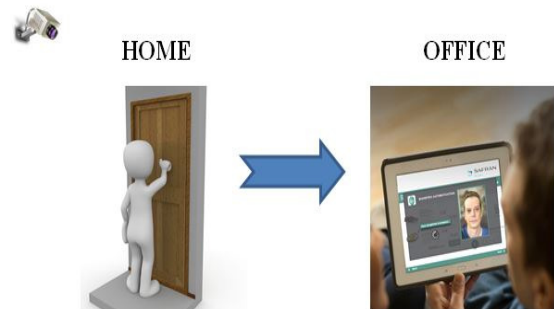
It is necessary to have a visual knowledge about data center networking for cloud computing course and also to understand the real concepts of data center computation on clusters of computer using HADOOP technology. These places can be visited using VR technology.

##### 2. ROBOTICS TECHNOLOGY

Virtual reality comes true in the concept of robots in fire rescuing, battle field monitoring, enemy alert system, natural disasters.

##### 3. THEFT VIDEO SURVEILLANCE

With the help of Virtual reality using mobile application, the theft identification can be done without the physical intervention of humans.



When any object touches the door, the sensor senses the object and displays it on the mobile screen.

**Fig 2 :- Theft Identification using VR**

##### 4. MACHINE LEARNING AND AI

Machine Learning is the emerging area in which industries are trying develop new machine learning algorithms. The machine vision frameworks are developed to achieve the VR concepts through the mobile phones. The combination of ML algorithms and IOT

sensor data will be combined and produced the efficient results in identifying the behaviors and patterns of the players.

## **VI. SUMMARY**

As the VR concepts are widely used, the new tools, design constructions, advanced platform and frameworks are being developed and practiced by large scale industries. VR makes the connection between physical world to virtual world. In most of the applications where VR gets implemented will reduce the manpower and economy.

## **REFERENCES**

1. <https://arc.applause.com/2016/05/13/google-io-2016-machine-learning-virtual-reality-android-n>
2. [www.eonreality.com](http://www.eonreality.com)
3. [www.worldviz.com/vizard-virtual-reality-software](http://www.worldviz.com/vizard-virtual-reality-software)