



Review Analysis On AR & VR Technology: Google Glass

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ABSTRACT:

AR & VR technology process of Google Glass is a piece of hardware that functions just like a smartphone and can perform a fair range of tasks with the use of a small screen situated in the front of right eye. Google Glass is Google's analytics development program to create a HMD – (Head-Mounted Display) with Project Google Glass, users would be able to interact with the web using voice commands and access information that is already available to most sensitive phone users hands-free. Google glasses are basically portable computers that can use a constant bundle capable of powering responsive humanoid phones and tablets. The review paper offers some basic ideas about GOOGLE GLASSES. All smartphone choices and providing internet facilities and adjusted to eyes. Because Google glass is incredibly modern and up-to-date technology, the paper will make it easier to understand little about Google glasses. A new novelty that appeals to all types of people, including the disabled and disabled persons, is Google Glass as an artistic movement.

KEYWORDS: Augmented Reality, Eye-Tap, Project Glass, Virtual reality.

INTRODUCTION

AR technology based Google Glass is Google's research and development program to create a Head-mounted Augmented Reality (HMD) interface. It is a member of the Google X Lab and the Google facility devoted to advances in technology such as driverless cars. The Google X Lab is focused on cutting-edge technology [1]. With Project Google Glass, users would be able to interact with the web using voice commands and access information that is already available to most sensitive phone users hands-free. Project Glass gadgets enable voice-activated Internet engagement and hands-free viewing of information now available to the majority of smartphone users. Google's glasses are just electronics mounted on your face. Users using this mobile technology can use it without using their hands [2]. The primary issue is that it's quicker, portable, and you can use it while doing daily tasks. It's kind of like having an additional computer with software and all the other tools supplied in the smartphone. Glass will be powered by Google's Android operating system. The Google Glass construction is depicted in Figure 1.



Fig.1: The Figure Portrays the Structure of Google Glass

Google revealed on January 15, 2015, that it would stop producing the Google Glass concept but stay committed to research and development. In their words, the project's experimental phase Project Glass was about to 'graduate' from Google Labs. Virtual reality refers to computer-simulated environments capable of simulating physical presence in real-world locations and imagined worlds. AR is a perception of a live, digital, direct or indirect, real-world environment [3].

Types of Technology

Bluetooth: Without doubt Google Glass can have service provider via Bluetooth. What this indicates is that Google Glasses can also eliminate headphones as earpieces and instead assume vibrations through the ear bones that allow you to listen to music and different audio content. The downside of doing this is that user not just able to hear music that he is only interested in through this system, but they are going to be able to hear conversations that happen next to them too.

Wearable Computing: It is also known as body borne devices, are electronic devices carried underneath by bearers. This technology was developed for the growth of information technologies and media for general or special purposes. Wearable computers are beneficial for applications where computational support is more complicated than just hardware-coded logics [4].

Ambient Intelligence: It creates responsive electronic environments that are sensitive to human presence. A vision of the future of electronics, communications, and computing known as "ambient intelligence" was first conceived in the late 1990s for the years 2010 to 2022.

Smart grid: Using analogue or digital information and communications technology in an automated manner, it is a modern electric grid that gathers and acts on information, such as information about the performances of consumers and suppliers, to improve the efficiency, reliability, economics, and sustainability of electricity production and distribution. Important components of the smart grid include electronic power conditioning and distribution and production control of electricity.

4G Technology: 4G, fourth generation short form of telecommunications technology fourth generation counterpart to and preceding 5G. In addition to the standard 3G voice and other services, a 4G system offers mobile broadband Internet access, such as to computers with wireless modems and to other portable devices.

DESIGN

It has features such a camera, speaker, button, and a small video display that is used by a pop-up to deliver hands-free information. It also has a front-facing camera that users can utilise to snap photos

and videos. With the help of a bone conduction transducer, Google Glass is intended to be a hands-free wearable gadget for making and receiving calls [6]. The glasses have sophistication for employing touch feedback thanks to the one button on the side of the frame. Figure 2 portrays the various components of Google glass.

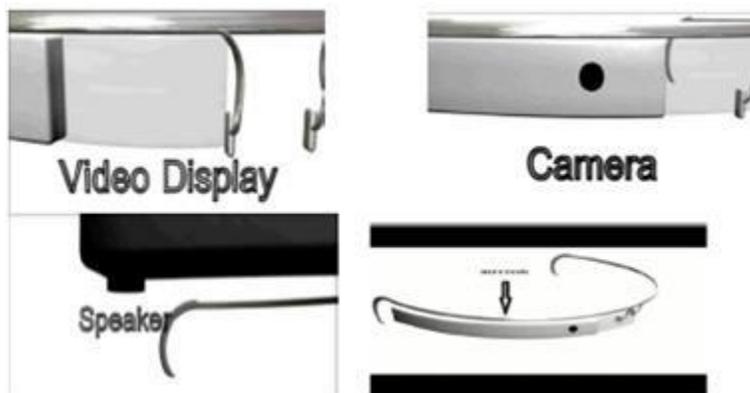


Fig.2: Google Glass Components

Other components:

- There is a microphone facility, which can take user's voice recognition with telephone communication.
- Depending on Wi-Fi hotspots, production devices, or wireless smartphone tethers, a 3G/4G module may wind up being installed.
- The right sidebar recognizes voice commands. Touch sensitive pad will be used to understand gestures. By grinning, shaking their heads, etc., wearers of Glass may instruct the device what to do thanks to an accelerometer and gyroscope [7].

GOOGLE GLASS WORKING

Wi-Fi is used for communication with the cell phone, which also shows content on the video screen and can reply to voice instructions from the user. Google has created a little movie showcasing the functions and uses of the Google eyewear. Social networking, communication, and browsing are its primary focal points. The video camera understands the surrounding people and things by sensing the surroundings [8]. The whole operation of Google Glasses depends on user voice instructions. The fundamental components of a computer, such as a CPU, sensors like GPS, speakers, earpieces, and batteries are all present in Google Glass, along with a small projector and a prism that refocuses light onto the retina. Each component is precisely inserted into the frame. Some processing must actually take place in the cloud to keep the system as small as possible (as it does with Apple's Siri), so a good mobile broadband signal is important.

ANALYSIS OF PROBLEM

Google must stay away from "The Segway problem": There's a justification video glasses haven't even taken off yet. And people going to call it, for lack of a better term, "The Segway Problem." For its cost the Segway failed in part. This technology can represent advancement in the future or, on

the other hand, it can represent the complete opposite, which is a sign of mockery. Because of a deeper response to the product's fundamental idea rather than a society that is purely uninformed, a dumb future rather than an optimistic one has resulted. So far, we can say that Google's Glasses aren't exactly inspiring. In order to succeed, Google must choose various strategies, such as the fashionableness or invisibility of video glasses [9].

BENEFITS

- Take Pictures and Record videos:

Google Glass only requires a command to snap a photo or record a movie; the user never even has to touch it. The 5 GB flash memory of the gadget houses the photographs and videos, which may also be shared or forwarded on social networking websites.

- Display messages:

Receiving text messages and emails will be displayed on Google Glass, and users will be able to reply using voice commands.

- Find information:

People who frequently use Google may discover that using the new Glass has simplified their task. They only need to ask a query, and the computer will search the internet for the solution. The system will show the user the proper responses on the tiny screen in front of his eyes if he asks, for example, when The Taj Mahal was built or provides a few pictures of the monument [10].

- Show maps:

The widely used Google Maps is integrated into Glass, allowing users to chart their route or seek for locations using voice commands.

- Google with Video sharing:

Google Glass will be able to show the world what users see-live! If users attend a family function, play school for their child, or a concert, they can share the stream in real-time with friends and family.

- Google Integrate with Voice Assistant

Now a days Google integrate with the digital voice assistant from the search engine giant. It will monitor the user's everyday routines, including going to work and his route. Other features include providing alternate routes or regular weather updates if there is traffic on the way.

- Translate:

Google Glass can translate a sentence or word from one language to another by simply asking the user to do it.

LIMITATIONS

- It can get damaged or broken quickly. Although Google tries to make it as modest as possible, it is highly breakable.
- Glass displays data in front of the user's eyes so it's going to be a tough experience for him / her because he / she's going to focus on data and may miss the environment.
- Users using spectacles cannot wear Glass.
- Glass can breach people's privacy.

CONCLUSION

In essence, Google Glasses are a type of wearable computer that makes use of modern, cutting-edge technologies. Additionally, it enables communication, intricacy, and information access for persons who are physically unable to use smartphones and palmtops in a general sense, such as those who are physically challenged or have other disabilities. The use of new technology will help the human race live more comfortably and with less stress. With the debut of Google Glass, people now have access to current technologies. Although its current capabilities are restricted, Google claims that the device itself is "extremely appealing" and has a bright future.

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