The android operating system information technology essay

Technology, Information Technology

Y. B. CHAITANYA, P. NARMADAAVN Institute of engineering and technologyAbstract: Project Glass is a research and development program by Google to develop an augmented reality Head-Mounted Display (HMD). The intended purpose of Project Glass products would be the hands-free displaying of information currently available to most smartphone users, and allowing for interaction with the Internet via natural language voice commands. These glasses will have the combined features of virtual reality and augmented reality. Google glasses are basically wearable computers that will use the same Android software that powers Android smartphones and tablets. Google Glass is as futuristic a gadget we've seen in recent times. A useful technology for all kinds of people including handicapped/disabled. Keywords: Virtual and augmented reality, project glasses, eye tap, smart clothing, android, 4G

Introduction:

Virtual reality (VR):

Virtual reality is a term that applies to computer-simulated environments that can simulate physical presence in places in the real world, as well as in imaginary worlds. It covers remote communication environments which provide virtual presence of users with the concepts of telepresence and telexistence or a virtual artifact (VA). The simulated environment can be similar to the real world in order to create a life like experience. Virtual reality is often used to describe a wide variety of applications commonly associatedwith immersive, highly visual, 3D

environments. The development of CAD software, graphicshardware acceleration, head mounted displays, database gloves, and miniaturization.

Augmented reality (AR):

Augmented reality is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by generated sensory input such as sound, video, graphics or GPS data. It is related to a more general concept called mediated reality, in which a view of reality is modified (possibly even diminished rather than augmented) by a computer. As a result, the technology functions by enhancing one's current perception of reality. By contrast, virtual reality replaces the real world with a simulated one. Augmentation is conventionally in real-time and in semantic context with environmental elements.

Project Glass:

Project Glass is a research and development program by Google to develop an augmented reality head-mounted display (HMD). It is part of the Google X Lab, which works on other futuristic technologies. The intended purpose of Project Glass products would be the hands-free displaying of information currently available to most smartphone users, and allowing for interaction with the Internet via natural language voice commands. The functionality and physical appearance (minimalist design of the aluminum strip with 2 nose pads) has been compared to Steve Mann's EyeTap, which was also referred to as " Glass" (" EyeTap Digital Eye Glass", i. e. uses of the word " Glass" in singular rather than plural form " Glasses"). The operating system software used in the glass will be Google's Android.

Overview:

As per many reports, Google is expected to start selling eyeglasses that will project information, entertainment and, this being a Google product, advertisements onto the lenses. These glasses will have the combined features of virtual reality and augmented reality. The Google Glasses can use a 4G cell connection to pull in information from Google's mountain of data and display info about the real world in augmented reality on the lens in front of your eye. As you turn your head you'll get information about your surroundings and nearby objects from Google Goggles, info on buildings and establishments from Google Maps, even your friends' nearby check-ins from Latitude. The company has no plans to sell ads into your newly augmented view of the world, but will consider it if the product really catches on. http://i. ytimg. com/vi/Nc4ox89bofk/0. jpgThe glasses are not being designed to be worn constantly — although Google engineers expect some users will wear them a lot — but will be more like smartphones, used when needed, with the lenses serving as a kind of see-through computer monitor. Google glasses are basically wearable computers that will use the same Android software that powers Android smartphones and tablets. Like smartphones and tablets, the glasses will be equipped with GPS and motion sensors. They will also contain a camera and audio inputs and outputs. Several people who have seen the glasses, but who are not allowed to speak publicly about them, said that the location information was a major feature of the glasses. Through the built-in camera on the glasses, Google will be able to stream images to its rack computers and return augmented reality information to the person wearing them. For instance, a person looking at a landmark could see

detailed historical information and comments about it left by friends. If facial recognition software becomes accurate enough, the glasses could remind a wearer of when and how he met the vaguely familiar person standing in front of him at a party. They might also be used for virtual reality games that use the real world as the playground.

Technologies used:

Wearable Computing:

Wearable computers, also known as body-borne computers are miniature electronic devices that are worn by the bearer under, with or on top of clothing. This class of wearable technology has been developed for general or special purpose information technologies and media development. Wearable computers are especially useful for applications that require more complex computational support than just hardware coded logics. http://s3. amazonaws. com/njuice-thumb/2a/google-glass-team-wearable-computing-will-be-the-norm_l. pngOne of the main features of a wearable computer is consistency. There is a constant interaction between the computer and user, i. e. there is no need to turn the device on or off. Another feature is the ability to multi-task. It is not necessary to stop what you are doing to use the device; it is augmented into all other actions. These devices can be incorporated by the user to act like a prosthetic. It can therefore be an extension of the user's mind and/or body.

Ambient Intelligence:

Ambient Intelligence (AmI) refers to electronic environments that are sensitive and responsive to the presence of people. Ambient intelligence is a

vision on the future of consumer

electronics, telecommunications and computing. http://www. ics. forth.

gr/images/sxima1-eng. jpgIn an ambient intelligence world, devices work in

concert to support people in carrying out their everyday life activities, tasks

and rituals in easy, natural way using information and intelligence that is

hidden in the network connecting these devices. As these devices grow

smaller, more connected and more integrated into our environment, the

technology disappears into our surroundings until only the user interface

remains perceivable by users.

Smart Clothing:

Smart clothing is the next generation of apparel. It is a combination of new

fabric technology and digital technology, which means that the clothing is

made with new signal-transfer fabric technology installed with digital

devices. Since this smart clothing is still under development, many problems

have occurred due to the absence of the standardization of technology.

Therefore, the efficiency of technology development can be strengthened

through industrial standardization. This study consists of three phases. The

first phase is selecting standardization factors to propose a standardization

road map. The second phase is to research and collect related test

evaluation methods of smart clothing. For this, we selected two categories,

which are clothing and electricity/electron properties. The third phase is

establishing a standardization road map for smart clothing. In this study, test

evaluations have not yet been conducted and proved. However, this study

shows how to approach standardization. We expect that it will be valuable for developing smart clothing technology and standardization in the future.

Eye Tap Technology:

http://upload. wikimedia. org/wikipedia/commons/thumb/4/43/Aimoneyetap. jpg/275px-Aimoneyetap. jpgAn EyeTap is a device that is worn in front of the eye that acts as a camera to record the scene available to the eye as well as a display to superimpose a computer-generated imagery on the original scene available to the eye. This structure allows the user's eye to operate as both a monitor and a camera as the EyeTap intakes the world around it and augments the image the user sees allowing it to overlay computer-generated data over top of the normal world the user would perceive. The EyeTap is a hard technology to categorize under the three main headers for wearable computing (Constancy, Augmentation, Mediation) for while it is in theory a constancy technology in nature it also has the ability to augment and mediate the reality the user perceives.

Smart Grid Technology:

A smart grid is an electrical grid that uses information and communications technology to gather and act on information, such as information about the behaviors of suppliers and consumers, in an automated fashion to improve the efficiency, reliability, economics, and sustainability of the production and distribution of electricity.

4G Technology:

4G is the fourth generation of cell phone mobile communications standards. It is a successor of the third generation (3G) standards. A 4G system provides mobile ultra-broadband Internet access, for example to laptops with USB wireless modems, to smartphones, and to other mobile devices.

Android Operating System:

http://scm-l3. technorati. com/11/06/12/45011/android1. gif? t= 20110612082000Android is a Linux-based operating system for mobile devices such as smartphones and tablet computers, developed by Google in conjunction with the Open Handset Alliance.

How it Works?

Design:

Video Display:

Its features with the small video display that is used to display the pop up hands free information. video display. JPG

Camera:

It also has the front facing video camera with which photos and videos can be taken in a glimpse. camera. JPG

Speaker:

Google glasses are designed to be hands free wearable device that can be used to make or receive calls too. So a speaker is also designed by the ear. speaker. JPG

Button:

A single button on the side of the frame sophisticates the glasses to work with the physical touch input. button. jpg

Microphone:

A microphone is also put in, that can take the voice commands of the wearer of user. This microphone is also used for having telephonic communication.

Working:

http://i. ytimg. com/vi/Nc4ox89bofk/0. jpgThe overall design of Google glassesThe device will probably communicate with mobile phones through Wi-Fi and display contents on the video screen as well as respond to the voice commands of the user. Google put together a short video demonstrating the features and apps of Google glasses. It mainly concentrates on the social networking, navigation and communication. The video camera senses the environment and recognizes the objects and people around. The whole working of the Google glasses depends upon the user voice commands itself.

Benefits:

Easy to wear and use. Sensitive and responsive to the presence of people. Fast access of maps, documents, videos, chats and much more. A new trend for fashion lovers together being an innovative technology. A spectacle based computer to reside directly on your eyes rather than in your pouch or pocket. A useful technology for all kinds of handicapped/disabled people.

Disadvantages:

Can be easily broken or damaged. Though Google wants these glasses to be as modest as achievable, they seem to be extremely breakable. Users will have a tough time taking care of it. These glasses show the retrieved data in front of users eyes so it will be a tough experience for them since they will focus on that data and will eventually miss the surroundings that may lead to accidents while driving. The resource for running these glasses is still unknown. Will there be a battery or it will run using solar energy? Privacy of people may breach with new glasses.

Future Scope:

Google Glass is as futuristic a gadget we've seen in recent times. It's limited in scope right now, but the future, Google believes, is bright and the device itself is " incredibly compelling". Google is trying their hardest to push the Project Glass through the FCC this year. Reports show that Google is trying to get the approval by the FCC this year but there are already several hundred glasses made for testing internally.

Conclusion:

Google glasses are basically wearable computers that use the evolving familiar technologies that brings the sophistication and ease of communication and information access even for the physically challenged class of people those literally could not use general way of palmtops and mobiles.