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COMPUTER SOCIETY OF INDIA
STUDENTS CHAPTER (IO1893)

THEME TOPIC
Augmented Reality

Through the mobile games like Pokeman Go / Harry Potter: Hogwarts Mystery, Augmented Reality became very popular.
What is it? Augmented reality (AR) is an **interactive experience of a real-world environment** where the objects that reside in the real-world are "augmented" by computer-generated perceptual information including sounds, images, text. This is rather different from virtual reality. Virtual reality means computer-generated environments for you to interact with whereas Augmented reality **adds to the reality** you would like to interact with. AR is used to **enhance natural environments** or situations and **offer perceptually enriched experiences**.

How Does it Work? Hardware components for augmented reality are: **processor, display, sensors and input devices**. Modern mobile computing devices like smartphones and tablet computers contain these elements which often include a camera and MEMS sensors such as accelerometer, GPS, and solid state compass, making them suitable AR platforms

Various technologies are used in augmented reality rendering, including **optical projection systems, monitors, handheld devices, and display systems** worn on the human body. AR displays can be rendered on devices resembling eyeglasses. Versions include eyewear that employs **cameras to intercept the real world view** and re-display its augmented view through the eyepieces. A **head-up display (HUD)** is a transparent display that presents data without requiring users to look away from their usual viewpoints enabling them to keep their "heads up" and not look down at the instruments.

In most augmented reality applications, a user will see both synthetic and natural light. This is done by **overlaying projected images on top of a pair of see-through goggles or glasses**, which allow the images and interactive virtual objects to layer on top of the user's view of the real world. Sensors are usually on the outside of the augmented reality device, and **gather a user's real-world interactions and communicate them to be processed and interpreted**. Cameras are also located on the outside of the device, and visually scan to collect data about the surrounding area. The devices take this information, which often determines where surrounding physical objects are located, and then **formulates a digital model to determine appropriate output**.

Future of AR: This doesn't mean that phones and tablets will be the only venue for AR. Research continues apace on including AR functionality in **contact lenses, and other wearable devices**.

The ultimate goal of augmented reality is to create a convenient and natural immersion, so there's a sense that **phones and tablets will get replaced**, though it isn't clear what those replacements will be. Even glasses might take on a new form, as "smart glasses" are developed for blind people.

Like any new technology, **AR has a lot of political and ethical issues**. Google Glass, for example, raised privacy concerns. Some worried that conversations might be surreptitiously recorded or pictures snapped. AR glasses, contacts and more, like the Glass - X and Google Lens, though, are moving ahead in production and sales.

NEWS OF THE WEEK
GOOGLE TECHS TO SECURE YOU FROM THIRD PARTY DATA BREACHES

As part of the "Safer Internet Day" celebrations, Google introduced two updates -- "**Password Checkup**" Chrome **extension** and a "**Cross Account Protection**" -- **to protect apps, websites and user-accounts from possible third-party data breaches.** If Google detects a username and password on a site from over the 4 billion credentials that have already been compromised, the Chrome extension would **trigger an automatic warning** and suggest a password-change. The "Cross Account Protection" has been designed as a safety tool for the apps and websites require a Google sign-in. On implementing the tool, Google would be **able to send information in case of an account hijacking attempt or other potential security and privacy threats** to protect the users as well as the platform.

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Why Laugh Alone?