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VIRTUAL & AUGMENTED REALITY

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Virtual reality (VR) and augmented reality (AR) hold great promise for the future of gaming, marketing, e-commerce, education, and a variety of other industries. Both technologies are known for providing an upgraded experience that combines a virtual and real world with enhanced 3-D images. Although the two can be easily confused, there are some fundamental differences between them using a spinning string trimmer. On-

ies, virtualtours, and video games. It aids in the creation of realistic simulations and

the "immersion" of the spectator through the use of computers and sensory instruments such as headsets and gloves. Virtual reality is utilized for training, education, and science in addition to gaming and enjoyment. Virtual reality is the full name of the technology.

AUGMENTED REALITY

Augmented Reality (AR) is a technology that combines the digital and physical worlds to create a virtual experience

How does virtual reality work?

The Key Concepts of VR & AR:

VIRTUAL REALITY

A computer-generated representation of another universe or reality is known as virtual reality (VR). It's commonly seen in 3D mov-



For instance, AR technology can be used to overlay score overlays on televised sports games and to pop out 3D photographs, texts, and

How does augmented reality work?

AR employs computer vision, mapping, and depth tracking. This feature allows cameras to collect, send, and process data in order to display digital material that is relevant to whatever the viewer is

GUNDRATHI
LOKESH

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Apps for mobile or desktop that use augmented reality technology to combine digital elements

EDGE COMPUTING

Edge computing is a distributed IT architecture which moves computing resources from clouds and data centers as close as possible to the originating source. The main goal of edge computing is to reduce latency requirements while processing data and saving network costs. The edge can be the router, ISP, routing switches, integrated access devices (IADs), multiplexers, etc. The most significant thing about this network edge is that it should be geographically close to the device.

How Does Edge Computing Work

In a traditional setting, data is produced on a user's computer or any other client application. It is then moved to the server through channels like the internet, intranet, LAN, etc., where the data is stored and worked upon. This remains a classic and proven approach to client-server computing.

Benefits of Edge Computing

While AI algorithms can streamline the complex process of managing inventory databases, the task of picking a product from a warehouse shelf still involves manual labor. AR technology helps eliminate confusion and make this process quick and precise. A warehouse worker holding an iPad or wearing Microsoft HoloLens (or any other headset, for that matter) gets instructions about the exact location of a particular item and is guided to the very aisle and

shelf where it is stored. No more guesswork and getting lost amidst the similarly looking shelves – anyone who has ever been inside an industrial warehouse can understand the value of this solution.

Preventing accidents and disruptions

VR is helping predict, and thus potentially evade the hazards and disruption risks associated with the use of an assembly line. By simulating production environment, manufacturing companies can indicate potential threats and eliminate them long before they even arise. The value of this solution is difficult to overlook, since it helps reduce downtime as well as repair and maintenance expenses, and enhances employee security.

One of the best ways to implement edge computing is in smart home devices. In smart homes, a number of IoT devices collect data from around the house. The data is then sent to a

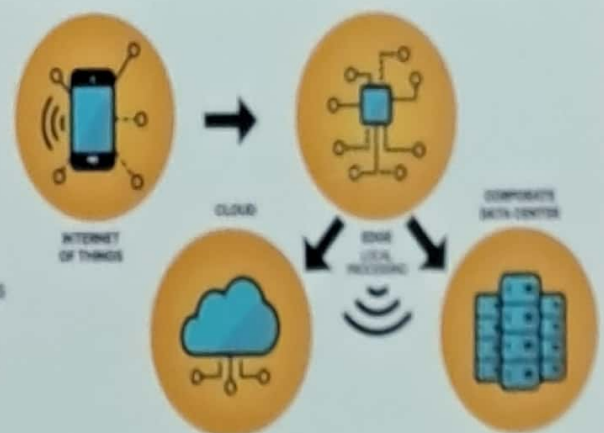


remote server where it is stored and processed. This architecture can cause a number of problems in the event of a network outage. Edge computing can bring the data storage and processing centers close to the smart home and reduce backhaul costs and latency.

As devices grew smaller over the years, their computing and processing powers have grown exponentially. While data warehouses and server farms were once considered to be the ultimate choice for computing speed, the focus has quickly shifted to the concept of cloud or "offsite storage". Companies like Netflix, Spotify and other SaaS

HOW EDGE COMPUTING WORKS

Edge computing allows data from Internet of Things devices to be analyzed at the edge of the network before being sent to a data center or the cloud.



M. DEEPTHI (20BF1A0598)

Internet of things (IoT)

The Internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks. The Internet of things has been considered a misnomer because devices do not need to be connected to the public Internet, they only need to be connected to a network and be individually addressable.

Home automation:

IoT devices are a part of the larger concept of home automation, which can include lighting, heating and air conditioning, media and security systems and camera systems. Long-term benefits could include energy savings by automatically ensuring lights and electronics are turned off or by



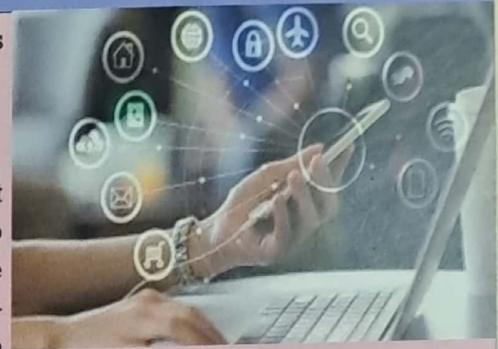
making the residents in the home aware of usage. A smart home or automated home could be based on a platform or hubs that control smart devices and appliances. For instance, using Apple's Home Kit, manufacturers can have their

home products and accessories controlled by an application,

Elder care:

One key application of a smart home is to provide assistance to elderly individuals and to those with disabilities. These home systems use assistive technology to accommodate an owner's specific disabilities. Voice control can assist users with sight and mobility limitations while alert systems can be connected directly to cochlear implants worn by hearing-impaired users. They can also be equipped with additional safety features, including sensors that monitor for medical emergencies such as falls or seizures. Smart home technology applied in this way can provide users with more freedom and a higher quality of life. The term It can assist in the smarter control of homes and cities via mobile phones. It enhances security and offers personal protection.

By automating activities, it saves us a lot of time. Information is easily accessible, even if we are far away from our actual location, and it is updated frequently in



real time. Electric Devices are directly connected and communicate with a controller computer, such as a cell phone, resulting in efficient electricity use. As a result, there will be no unnecessary use of electricity equipment.

Personal assistance can be provided by IoT apps, which can alert you to your regular plans.

It is useful for safety because it senses any potential danger and warns users. For example, GM OnStar, is a integrated device that system which identifies a car crash or accident on road. It immediately makes a call if an accident or crash is found. It minimizes human effort because IoT devices connect and communicate with one another and perform a variety of tasks without the need for human intervention. Patient care can be performed more effectively in real time without the need for a doctor's visit. It gives them the ability to make choices as well as provide evidence-based care. Asset tracking, traffic or transportation

KOLE VAMSI (21BF1A0590)