BYTE QUEST

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Contents:

Byte Quest is the article published by the CSE dept of Vasavi College of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

 Good, bad or indifferent if you are not investing in new technology, you are going to be left behind.

-Philip Green

 Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

-Stewart Brand

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LEAP MOTION TECHNOLOGY

Leap Motion Technology brings an entirely new way to interact with computers. It is more accurate than a mouse, as reliable as a keyboard and more sensitive than a touch screen. It supports hand and finger motions as input, but requires no contact.

The Leap Motion controller is a small USB peripheral device which is designed to be placed on a physical desktop or mounted onto a virtual reality headset.

The heart of the device consists of 2 cameras and 3 infrared LEDs. These track infrared light with a wavelength of **850 nanometers**. The LEDs generate pattern-less IR light and the cameras generate almost **200 frames per second** of reflected data. This is then sent through a USB cable to the host computer, where it is analysed by the Leap Motion software using "complex Maths. The controller was shown to perform tasks such as navigating a website, using pinch-to-zoom gestures on maps, high-precision drawing, and manipulating complex 3D data visualizations.

It is now being used with VR headsets such as the Oculus Rift and HTC Vive.

R. Sravani (CSE-A 2/4)

INTERNET OF THINGS

The term "Internet of Things" was coined by Kevin Ashton in 1990's. The Internet of Things is the concept of everyday objects – from industrial machines to wearable devices – using built-in sensors to gather data and take action on that data across a network.

IoT is used in many industries like Health care, Retail, Manufacturing, Utilities, Telecommunications, Automotive. With streaming data, the models and algorithms are stored and the data passes through them for analysis. This type of analysis makes it possible to identify and examine patterns of interest as data is being created – in real time. So, before the data is stored, in the cloud or in any high-performance repository, you process it automatically. Then, you use analytics to decipher the data, all while your devices continue to emit and receive data. Data stream analytics can move beyond monitoring existing conditions and evaluating thresholds to predicting future scenarios and examining complex questions. To assess the future using these data streams, you need technologies that identify patterns in your data and then metrics in the data stream drive automatic adjustments in connected systems.

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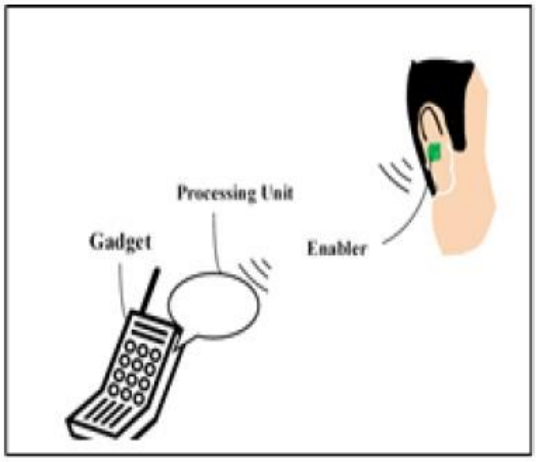
MIND-READING SYSTEM

As digital information has been more integrated into everyday life, situations arise where it may be inconvenient to use hands to directly manipulate a gadget. For example a driver might find it useful to interact with a vehicle navigation system without removing hands from the steering wheel. Further a person in a meeting would wish to invisibly interact with a communication device. In the recent years researchers have invented a mind reading system that, for the first time in history, allows any person to type words and phrases letter by letter, just by thinking. It all occurs in real time, without moving a single muscle or uttering a single word.

Mind reading system is a human computer interface system that includes an enabler for controlling gadgets based on signal analysis of brain activities transmitted from the enabler to the gadgets. The enabler is insertable in the user's ear and includes a recorder that records brain signals. A processing unit of the system, which is inserted in a gadget, commands the gadget based on decoding the brain signals. The proposed device and system could facilitate a brain machine interface to control the gadget from electroencephalography signals in the user's brain.

The ear could provide a relatively inconspicuous location. Indeed, ear is known as a site where brain wave activity can be detectable. Certain areas of the ear, such as the area of the ear canal have proven to be better locations of brain wave activity. The proposed enabler could transmit wirelessly the brain signals to a processing unit inserted in the gadget. The processing unit decodes the received brain signals by a pattern recognition technique. Based on the decoded signals the processing unit can control applications that are installed in the gadget.

"*Every once in a while a new technology, an old problem, and a big idea turn into an innovation".*



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