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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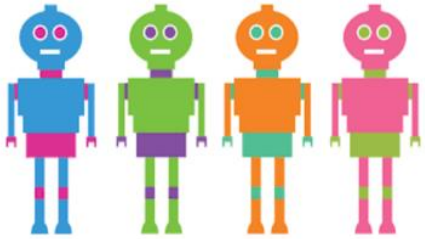
BOTS



A bot (short for "robot") is an automated program that runs over the Internet. Some bots run automatically, while others Only execute commands when they receive specific input. There are many different types of bots, but some common examples include web crawlers, chat room bots, and malicious bots. Web crawlers are used by search engines to scan websites. On a regular basis. These bots "crawl" websites by following the links on each page. The crawler saves the contents of each page in the search index. By using complex algorithms, search engines can display the most relevant pages discovered by web crawlers for specific search queries. Chatbots were one of the first type so far automated programs to be called "bots" and became popular in the1990s,with the rise of online chatrooms. These bots are scripts that look for certain text patterns submitted by chatroom participants and respond with automated actions. For example, a chatbot might warn a user if his or her language is inappropriate.

NASHRA MAHEEN (CSE-B 2/4)

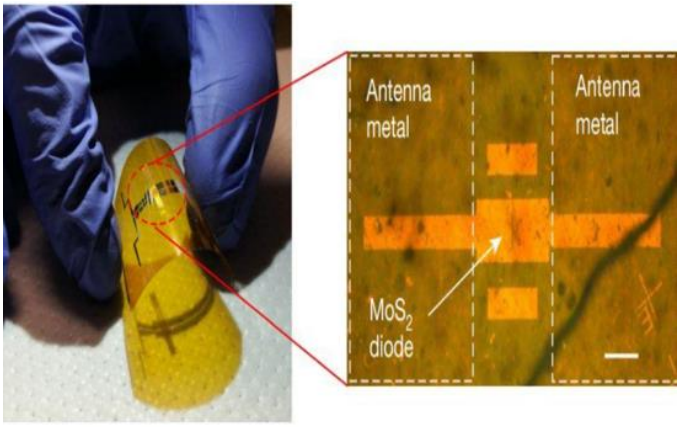
SIXTH SENSE TECHNOLOGY

\Sixth Sense Technology is neck worn gestural interface device that builds up the physical world around us with the digital information and enables the users use natural hand gestures to connect with the such information. It is a pendent like device that consist two main components; a data projector and a camera. This technology enables the user to connect with the internet persistently.

The device works on the principles of gestural recognition and image processing. The name Sixth Sense was given to this technology in light of a wearable device and the digital information could act in augmentation to the five traditional senses (vision, touch, smell, hearing and taste). Camera, projector, mirror, microphone, colour markers, gestures are the keywords.

HARSHINI (CSE-B 2/4)

MIT's 2D ANTENNA TURNS Wi-Fi SIGNALS TO ELECTRICITY



Imagine a world where smartphones, laptops, wearables, and other electronics are powered without batteries. Scientists from the Massachusetts Institute of Technology developed a 2D material that is based on existing rectifying antenna, or rectenna, devices. These capture AC electronic waves from the air and turn them into DC power. They tend to use silicon or gallium arsenide, making them rigid and suitable for powering small electronics, but the MIT version is only a few atoms thick, meaning it's flexible enough to be fabricated to larger sizes.

The AC signal travels into the semiconductor, which converts it into a DC voltage that could be used to power electronic circuits or recharge batteries. In this way, the battery-free device passively captures and transforms ubiquitous Wi-Fi signals into useful DC power. Moreover, the device is flexible and can be fabricated in a roll-to-roll process to cover very large areas.

MIT used semiconducting material molybdenum disulphide (MoS2), which is three atoms thick, to create the new rectenna. When exposed to certain chemicals, forces a phase transition between semiconductor and metallic material.

The structure is also known as a Schottky diode, mimicking the properties of the metal-semiconductor junction used in rectennas previously - producing a working rectenna that minimises parasitic capacitance, resulting in higher speed. This means it can capture higher frequencies than other flexible rectifiers, which can't capture the gigahertz frequencies in which Wi-Fi operates. It's able to convert up to 10 GHz of wireless signals with around 30 percent efficiency. While that's higher than other flexible designs, it still below the efficiency of rigid rectifiers, which reach around 60 percent.

The device can also reportedly be used to power medical implants or swallow able sensors in place of traditional batteries, which can leak lithium and be lethal to patients. Researchers believe it's possible to develop electronic systems that can wrap around highways, bridges, or office walls.

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