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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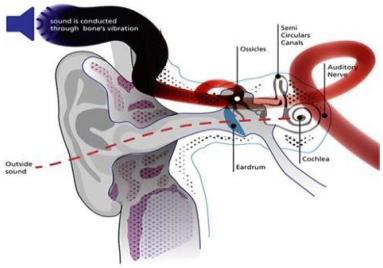
SWARM ROBOTICS

The research of swarm robotics is to study the design of robots, their physical body and their controlling behaviours. It is inspired but not limited by the emergent behaviours observed in social insects called Swarm Intelligence. Relatively simple individual rules can produce a large set of complex swarm behaviours. A key-component is the communication between the members of the group that build a system of constant feedback. The swarm behaviour involves constant change of individuals in cooperation with others, as well as the behaviour of the whole group. Unlike distributed robotic systems in general, swarm robotics emphasizes a large number of robots, and promotes scalability, for instance by using only local communication. That local communication for example can be achieved by wireless transmission systems, like radio frequency or infrared. Potential applications for swarm
robotics are many. They include tasks that demand miniaturization (nanorobotics, microbotics) like distributed sensing tasks in micromachinery or the human body. Most efforts have focused on relatively small groups of machines.

MOHAN MAHESH (CSE-B 2/4)

BONE CONDUCTING EARPHONES

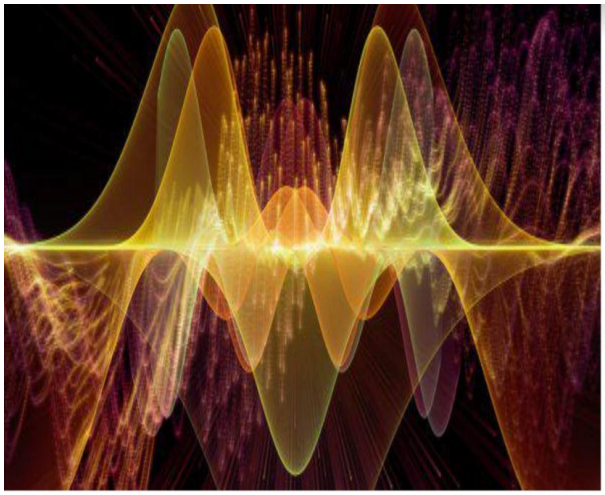


Bone conduction is the conduction of sound to the inner ear through the bones of the skull. Bone conduction allows you to hear sound through the vibration of bones of your face (jaw bones and cheek bones). These devices decode sound waves and convert them into vibrations that can be received directly by the cochlea so that ear drum is never involved. In this Premium-pitch technology is used. With bone conduction you are free to enjoy your music while keeping your ears open to enjoy your music while keeping your ears open to anything from the pleasant sounds of nature to potential dangers and risks. It also works of impaired hearing people. Experienced stereo sound via mini vibration precisely plead dual noise canceling microphones exclude surrounding noise effectively enhancing speeches.

Apple is researching wireless earphones with bone conduction noise cancelling tech.

B. PRAVEEN KUMAR (CSE-B 2/4)

SCIENTISTS HAVE TELEPORTED AND MEASURED A QUANTUM GATE IN REAL TIME



Around 20 years ago, two computer scientists proposed a technique for teleporting a special quantum operation between two locations with the goal of making quantum computers more reliable. Now a team of researchers from Yale University have successfully turned their idea into reality, demonstrating a practical approach to making this incredibly delicate form of technology scalable.

These physicists have developed a practical method for teleporting a quantum operation – or gate – across a distance and measuring its effect. While this feat has been done before, t's never been done in real time. This paves the way for developing a process that can make quantum computing modular, and therefore more reliable.

Unlike regular computers, which perform their calculations with states of reality called bits (on or off, 1 or 0), quantum computers operate with qubits – a strange state of reality we can't wrap our heads around, but which taps into some incredibly useful mathematics. In classical computers, bits interact with operations called logic gates. Like the world's smallest gladiatorial arena, two bits enter, one-bit leaves. Gates come in different forms, selecting a winner depending on their particular rule. These bits, channelled through gates, form the basis of just about any calculation you can think of, as far as classical computers are concerned. But qubits offer an alternative unit to base algorithms on. More than just a 1 or a 0, they also provide a special blend of the two states. It's like a coin held in a hand before you see whether it's heads or tails. In conjunction with a quantum version of a logic gate, qubits can do what classical bits can't. The researchers used qubits in sapphire chips inside a cutting-edge setup to teleport a type of quantum operation called controlled -NOT gate. Importantly, by applying error -correctable coding, the process was 79 percent reliable. It's a beginning step on the road to making quantum modules, but this proof-of-concept shows modules could still be the way to go in growing quantum computers to the scale we need.

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