BYTE QUEST

Vasavi College of Engineering

Department of Computer Science and Engineering

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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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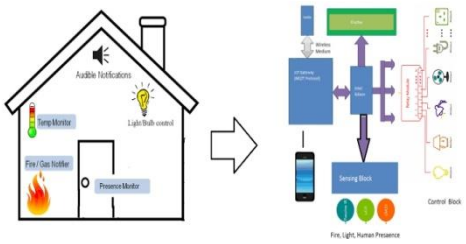
IOT INTRUDER DETECTION

This research aims to design and implement a home security system with human detection capability. Traditional home security systems, i.e., Closed-Circuit Television (CCTV) can only capture and record videos without the ability of giving warning feedback if there is any suspicious object. Therefore, an additional object detection and warning method is required. The proposed design is implemented using Raspberry Pi 3 and Arduino, that is connected by USB cable. The PIR sensor is installed on Arduino and webcam is mounted on Raspberry Pi 3. The Raspberry Pi 3 is used to process inputs from sensors and process images for human detection. PIR sensor detects the movement around the sensor to activate the webcam to capture a picture. Then, the object recognition is performed using Histogram of Oriented Gradients (HOG) and Support Vector Machine (SVM) to detect the suspicious object

. If the suspicious object is detected, then the alarm is activated and sends an email to warn the house owner about the existence of the intruder. The results show that it takes on average 2 seconds for the proposed system to detect an intruder and that the system can successfully detect the intruder with accuracy of 90%.



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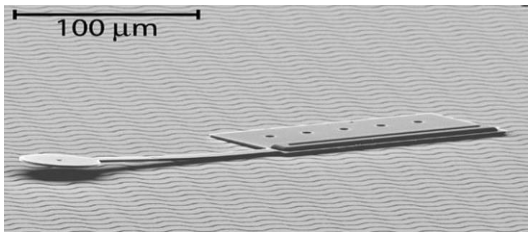
WORLD'S SMALLEST ROBOT

Dartmouth College researchers have created a robot so small that 200 of them could fit on the tip of your finger. The tiny machine crawls like an inchworm across a grid at the breakneck speed of 200 microns per second. Its goal: to fix really little things. Dartmouth engineer Bruce Donald says swarms of such devices could one day repair circuitry in computer chips. Unlike other miniature robots-which contain bulky motors, hinged joints, wheels and batteries-the Dartmouth 'bot is little more than a sliver of flexible silicon, two bits of memory, and two actuators that convert electrical energy into motion. Donald uses a computer to ad-just electrical charges on the grid, thereby controlling its direction and speed

When he increases the charge, an actuator on the machine's tail becomes oppositely charged and thus attracted to the plate, causing the tail to flex and make contact with the grid's surface. This pushes the shorter front leg 10 nanometres forward. At its fastest, the robot can take 20,000 steps a second. The next challenge is to assemble teams of robots to perform far more complex tasks, such as fixing your PC.



ABHIRAM (CSE-B 2/4)

VR IN LION KING

Disney has been remaking its animated classics for some time now. But "The Lion King", which hit theatres' on July 19th, sets a new benchmark for what's possible with computer-generated animation. The secret behind it all? An experimental form of filmmaking that, through VR, allows studios to shoot virtual sets with old-fashioned direction and analog camerawork. Making movies for virtual reality presents its own set of problems. To make the movie, they would need a camera, sound equipment, crew, and a set. But 360-degree cameras capture everything. So how do you get the shot? Directors exploring virtual reality as a filmmaking tool are trying several techniques to combat these problems, like building immersive sets and removing any production crew or equipment from the shot beforehand.

It's why executives at major studios tend to lean toward directors and producers that have worked with technology like virtual reality and CGI—they understand both the limitations and benefits tech can provide.
Filmmaking has always been propelled by technology. In the 1950's, 3D ruled the local movie houses. Advances in camera technology and practical special effects propelled blockbusters like Star Wars, Back to the Future, and Jurassic Park through the 1980s and 1990s. Nowadays, sometimes practically whole films are computer generated. Virtual reality still has a way to go before it's adopted wholly by the film industry to make movies, but it's already beating a path to the box office.

P BHASHITHA REDDY (CSE-A 2/4)