Portfolio Projects

# Humanoid Robot

<icon image from Misbah bhai>



This humanoid robot is the effort of me and one of my friend Misbah-ur-Rehman. It was presented as his academic project. The robot is actually a shadow robot that moves like a human being moves. At this stage the robot is capable of mimicking the arms and shoulders.

To capture the angles and the motion of a human body, Xbox Kinect is installed at some distance. An application then captures and calculates the angles on the human body frame captured by Kinect. After some processing on the angles it then transmits these angles to the robot where 19 servo motors follow the same angles and follow the same posture as posed by the human.

See video below:

Angles capturing:

# Persistence of vision Display

Our eyes are limited and can view very limited. Certain events usually cannot be seen through naked eye because they happen in a very short interval of time. This incapability of human can benefit in several ways. And we get benefit of such limitation in our everyday life, like in our all LCD displays.

Similarly this persistence of vision will trick our eyes. Only 8 LEDs and a motor is used to create a display of 8 x 360°.

The technique:

The technique is to rotate 8 LEDs in a circle on a relatively high speed. When an LED is turned on, it creates a light circle similar to light painting in photography. If we turn that LED in a very short interval of time, it will create an arc of light instead of a circle. And now if we turn on-off all the 8 LEDs in a very short interval of time, we will be able to create any text or image. And due to our eye’s limitations, we will see the complete image as a single image.

The Hardware:

Here is the hardware:

[Image 1]