

## Sixth Sense Robotics

The workshop is a secure platform for students to enter into the field of robotics and work on image processing .The workshop helps the students to learn all the basics and apply them in reality using our kits. The workshop helps the students to fight all the competitions related to robotics , Image processing , Aerial Robotics etc. The workshop would taken up by the people in the industry having immense experience at the international level in the field Image Processing .

The details of the workshop are as follows:

### **Topics to be covered**

- Introduction to Robotics and Combination of Robotics with Sixth Sense
- Microcontroller Programming
- Machine Control
- Introduction to Computer vision
- Digital Image Processing in Matlab
- Image Manipulation in Matlab
- Video acquisition and Manipulation

### **HANDS ON SESSION**

The final aim is to build various vision based machines.

Robots that will be covered on this day include (apart from discussing any ideas from the participants)

- **LED and Motor Control** - Topics to be covered HANDS ON SESSION Students Learn the basic code to program the board. They learn how to glow the LED's and make patterns on them , secondly they learn how to control the motors.
- **Computer Controlled Robot** - Students Learn to control the Robot by sending commands through the Keyboard. It is same like playing a racing game and control your car using ASWDX.
- **Ball Following Robot** - The Students make a Robot which shall be able to follow a ball using the camera attached. The programming and concept are taught in detail.
- **Change a PowerPoint Presentation with your hands.** - Amazing it is , now use sixth sense technology to control a power point presentation by using your hands, no Mouse or Keyboard is required.
- **Control Media Player with Hand Movements.** - Also learn to control your VLC Media player using your hands. Just wave the hand to stop or play , move your hand to the left to reverse or right for fast forward.

And Much More.....

- Assembling the Kit

- Writing the codes
- Burning the codes
- Finally Run the Bot
- Go for Competition

**The kit includes** : Free kit to a group of 4 students.

- Atmega Based Microcontroller board - One
  - USB Programmer One Wheels - Two
  - CHARGES DURATION Castor Wheels - Two
  - Chassis (Robot Body) - Three Parts
  - DC Motors - Two
  - Software and Study Content - One
  - Connecting Cables - One Bunch
  - Nuts and Bolts - One Packet
  - Screw Driver - One
  - Battery (9V) - Two
  - IR Sensors - Two
  - Atmega IC - One
  - Motor Driver IC - One
  - MAX 232 - One
  - 7805 - One
  - LM324 - Two
  - Additionally, a detailed manual will also be provided to each participant
  - Handouts and training material
- Information CD