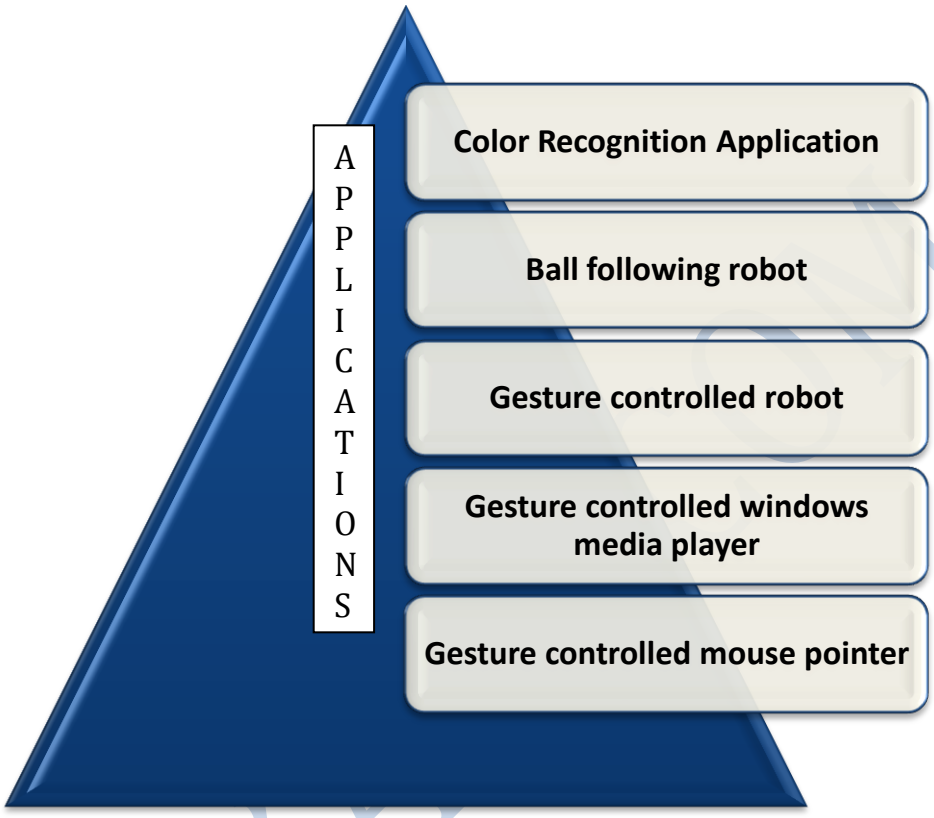
ROBOKART.COM


**India's first "SixthSense Botz" vision robotics workshop designed by OUR TEAM.** In this workshop, we have tried to interface digital world with physical world. We as an organization feel the importance of the real world. We all sit in front of computer entire day for our daily activity and one hand is busy clicking the things on the computer, then we felt to design something that can interface the real human with the computer. We humans can see the things around us, differentiate between colors then why can't machine? And that thought leads us to design "sixthsenseBotz"

All these days the participants would have used traditional sensors like IR, ultrasonic, LDR sensors etc. which were used for sensing an obstacle or light, but these sensors where never able tell the robot the color of the light or the type of obstacle present in front of the robot. In this two day workshop, using a camera, the robot will be able to tell what the robot is sensing.

The time has arrived to show capabilities to the world with empowering the youth of the country with non conventional workshops. So ARE YOU READY FOR THE NEXT GENERATION WORKSHOPS???????????

For processing of the images, we use a tool called as MATLAB, which is widely used in industries.




- **Introduction**
  - **Introduction to Vision based robots**
  - **Vision Controlled Motion**
- **Image Processing**
  - **Introduction**
    - Image acquisition devices
    - Image Processor
    - Image analysis tools
    - Machine Control
  - **Image acquisition devices/sensors**
    - Digital Camera
    - Analog Camera
  - **Tools used for Image Processing**
- **Hands on**
  - **Getting started with MATLAB**

- Functions
- M files

- **Introduction to the kit**
  - Programming micro-controller (AT89c2051).
  - Serial communication
  - Motor drivers
- **Image acquisition in MATLAB**
- **Image processing**
  - Color spaces
  - Color format conversion
  - Showing and storing of images
  - Thresholding
  - Important functions of MATLAB used for colour and edge detection
- **Video acquisition**
  - Getting information about your webcam and adapters
  - Setting all the image input parameters
  - Starting and previewing video
  - Capturing image and storing image
  - Getting ahead with image acquisition (Includes specific frame triggering)
- **Sending serial and parallel data using MATLAB**
- **Implementing Image Processing on the kit and robot**

# Workshop Benefits & Highlights:

- ✓ ***Learn & Interact with Engineer Trainer & get to know about Arduino, Sensors & All.***
- ✓ ***Receive an unparalleled education on the art of building robots & applications with personal one – on – one attention.***
- ✓ ***Learn to make your own robot within 2 day's***
- ✓ ***PowerPoint Presentation, Live Demos, Interactive Questions & Answer session & comprehensive material.***

# Target Audience:

- ✓ ***Students seeking career in Robotics related Industry.***
- ✓ ***All year students from Physics, Electronics, EXTC, all Engineering Stream & Android Enthusiast***

# Certification:

*Students will be certified jointly from* ***E-cell IIT Bombay & Robokart.com***

# The fee include (KIT CONTENT)

- ✓ **Usb Powered circuit board built in popular (AT89c2051) controller**
- ✓ **Intex Webcam (Optional)**
- ✓ **DC geared motors**
- ✓ **ABS polished wheels with metal couplings Castor Wheels**
- ✓ **General Purpose robotic vehicle chassis Ball for Image Processing**
- ✓ **Usb type-A to type-B cable Screw driver**
- ✓ **Different colors insulation tape Nuts, Screws and much more**