

## **Gesture Robotics**

This is an exhaustive hands on training program on Robotics designed to meet the industry needs and provide students with placements. This course would provide the participants knowledge and experience on the fast growing field of Robotics. The program is a specific program to develop applications that we see and use in daily life, For Eg. A playing a racing game on a mobile phone. This program will give students a detailed hands-on experience.

### **Course Content:**

Topics to be covered in two days

Gesture Controlled Robotics – Basics and why is it different?

- What is already in place?
- Types of Robot Sensors
- Application of Gesture Controlled robotics
- What can you do in the future?

Understanding the Sensing System:

- Accelerometers and Gyroscopes
- Basics
- Working
- Interfacing
- Applications

Microcontrollers

- uC and its Architecture
- I/O Functions
- Programming a uC

Actuators

- Motor Control
- Different Types of Actuators
- H- Bridge Concept

Fabrication of a the kit provided

- Assembling the kit
- Understanding the Kit and the Functions
- Software Installation
- Writing Codes

**Kit Content:**

- One Multipurpose Development Board (Atmega Based) [1Pc]
  - 4 channels of motor control( L293NE ), capable of driving 2 dc motors or 1 stepper motor at a time
  - 8 digital input channels for sensor interfacing
  - ADC – with 6 inputs for Transducer interfacing
  - Onboard Port Connector for In System Programming
  - USB Connectivity for PC /Laptop Interfacing
- One USB Programmer [1 Pc]
- IR Sensors [2 Pc]
- Two Geared Motor [2 Pc]
- Robotic Chassis Set [3 Pc]
- Sensor Connectors and Cables [4 Pc]
- Batteries 9V [2 Pc]
- Battery Snaps [2 Pc]
- Two Wheels with Grip [2 Pc]
- Two Castor Wheels [2 Pc]
- One Pack of Nut and Bolts [ 1 Pack]
- One Screw Driver [1Pc]
- One CD Containing All Software and Study Material [1Pc]
- One Atmega IC [1Pc]
- One Motor Driver IC [1Pc]
- Accelerometer (Optional)

**The Faculty:**

The faculties are people from top academic institutions, industries and research institutions. They have experience in the industries at the same time had the best education in this field. In fact some of them are pursuing master and Doctorate at Top notch universities to build their knowledge base.

**Note: Techfest, IIT Bombay Certificates to all participants (only if participant attends all the sessions).**