AUTOFINA ROBOTICS

R·CAT Rajiv Gandhi Centre of Advanced Technology

Internship on Robotic Process Automation

Description: Robotics and embedded systems are two fields that are closely related and have become increasingly important in recent years. Both areas involve the integration of hardware and software to create systems that can interact with the physical world. In this response, we will provide an overview of robotics and embedded systems, their applications, and some challenges associated with developing these technologies.

Key Feature:

Robotics	Mechatronics	IOT
Embedded System	Robotics	Sensors, Safety and Ethics
Automation Systems, programming robotic systems	Fundamentals of Robot Programming	Project Development

Result: Participants will be able to

- ✓ Describe how sensors, microcontrollers, and servo motor's function and how they are implemented.
- ✓ Select Robots, Controller, Sensors and Actuators based on the application and technical specifications.
- ✓ Develop numerous servo motor-based robot projects using Arduino programming and excellent embedded system skills.
- ✓ Analyse the Arduino code used in other projects and determine what the code's function is.
- ✓ Relate various scenarios in which the sensors could be used.

What will you learn:

- Embedded System
- Introduction of Electronic components
- Types of sensors
- Modules
- Types of Motors and working Principle
- Microprocessor and Microcontroller
- Architecture of microcontroller Atmega328P
- Embedded C language
- Introduction to Arduino IDE
- Interfacing of all sensors and components used in robotics and embedded System.
- Communication devices e.g., Bluetooth, Wi-Fi, nRF, PS2 controller
- PCB Designing and fabrication
- Making and Programming Line follower robot
- Making and Programming Wall follower robot
- Making and Programming Edge Avoider robot
- Making and Programming Obstacle Avoiding robot
- Bluetooth controlled robot
- Wi-Fi based remote controlled robot
- PS2 controlled robot
- NRF based robot
- Camera surveillance robot