



Email Id:- emailofrobotech@gmail.com

We, from the IoTICS.Net family, are willing to conduct a 3-Day Robotic Workshop wherein we are going to provide the participants with the opportunity of compact learning along with full hands-on experience. We are a team of four engineering students from Institute of Engineering & Management, Kolkata namely- Sandipan Chakraborty (CSE Dept.), Shouvik Mukherjee (CSE Dept.), Suvrojit Kumar Saha (ECE Dept.) .

Our Skills:-

- ❖ Internet of Things
- ❖ Server End Data Handling
- ❖ Embedded Systems and Robotics
- ❖ Language- C (Data Structure), Arduino coding (C++), Python
- ❖ Specialized in Arduino, NodeMcu and Similar Microcontrollers
- ❖ Computer Vision
- ❖ Team Leading and Management
- ❖ Design and building UAVs

Projects we have completed so far: -

- ❖ “Swarming of Vehicular Robots for Disaster-Management Purposes”
- ❖ “Server-based Robot Controlling Platform with Own Databases”
- ❖ “Indoor Navigation using Pixel wise Mapping”
- ❖ “Visualization of Live Data Streams in The Cloud using IoT Platform”
- ❖ “Hand Gesture based Autonomous Multipurpose Car using Arduino”
- ❖ “Home Automation Using Server-Client both-way communication”
- ❖ “PHP-API Designing for Server Data Handling”
- ❖ “Smart Car Parking applying FIFO algorithm”
- ❖ “Multi-Purpose Spraying Drone”
- ❖ “Smart User-Interactive Irrigation System Based on Arduino”

Ongoing Projects:-

- ❖ Swarming of Vehicular Robots and a Quadcopter equipped with GPS Module , various switchable flight modes, Live Video Streaming along with “Automatic Landing” & “Return to Launch Position” features

Research Publications:-

- ❖ Multi-Purpose Spraying Drone [INTERNATIONAL JOURNAL OF ADVANCES IN ELECTRONICS AND COMPUTER SCIENCE (IJAECs)]
- ❖ Smart Irrigation System Using Arduino and GSM Module [2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)]



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- ❖ A Low Cost Autonomous Multipurpose Vehicle For Advanced Robotics [IEEE UEMCON-The 9th IEEE Industrial Automation Engineering Conference Published in – IEEE Xplore]
- ❖ Smart Motorcycle Vest Using Arduino and Vibration Sensing Module [2018 9th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)]

Special Achievements: -

- ❖ BEST PRESENTER of IEEE UEMCON 2018 at Columbia University, New York
- ❖ Patent file has been issued : - “Swarm of Vehicular Bots and Unmanned Aerial Vehicle for Disaster Management by using Bird’s Eye Navigation System” , April 2018 - with *Dr. Himadri Nath Saha(Head Of the Department, CSE, IEM, Kolkata)*
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OUR WORKSHOP STRUCTURES:



3 DAYS 2 ROBOTS (BASIC-1)--

- Introduction to ARDUINO Microcontroller
- Basic Anatomy of ARDUINO
- Getting Used to the ARDUINO IDE
- Programming of ARDUINO
- Learn ARDUINO programming from the scratch
- Blinking LED in a pattern
- Concept of various Sensors
- Introduction to Serial Monitoring
- Serial Communications in details
- Manipulate Arduino coding from user input using if-else
- Interfacing ARDUINO compatible Sensors
- Interfacing of a Motor Driver with ARDUINO
- Learn to write motor movement functions



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- Concept of SONAR

In this workshop, the participants will be guided to build the following two projects based on ARDUINO: -

- Distance measure using SONAR
- Obstacle Avoiding Robot
- On last day there will be some interesting events-
 - ** Robotics Challenge (to motivate Students) with Exciting Prizes.
 - ** Food Packets will be provided to each student.