



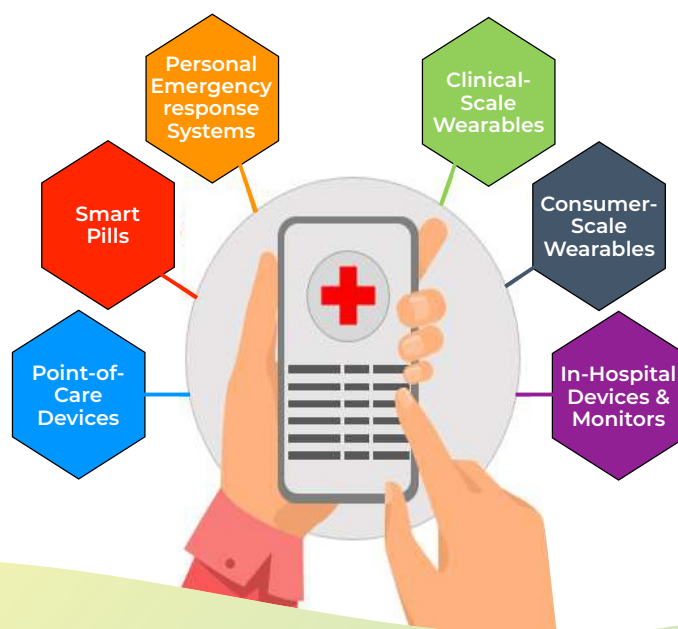
## ABOUT IOT TRAINING

- The training program provides an introduction to fundamental and advanced principles and practices of the Internet of Things (IoT) with the aim of enabling participants to design, construct, and implement IoT solutions. The text also examines a range of technologies and protocols employed in communication, encompassing emerging IoT-friendly apps and physical layer protocols.
- Participants will acquire a comprehensive comprehension of widely recognised Internet of Things (IoT) frameworks and standards.
- The training program encompasses widely used cloud platforms that offer extensive services and emphasizes the process of constructing such platforms.
- This orientation aims to elucidate the fundamental utilization of the Arduino environment in the development of various projects.
- The knowledge and the process of connecting a sensor to an Arduino micro-controller and retrieving data from the sensors help the trainees to gain insight of IoT technology and its usability/deployment in Healthcare. Open platforms provide users with the capability to securely store their sensor data in cloud-based environments.



# IoT TRAINING OUTCOMES

- The outcome of this orientation is to design and implement a module that enables voice-controlled functionality for hospital/healthcare automation systems.
- Understanding the new technology and skill set required in an employee for the embedded industry.
- Understanding the robotics future and scope.
- Understanding the different Micro-controller available in the industry & their use.
- In-depth knowledge on design, construction and programming concepts involved in building an autonomous robot.
- Learn & interact with renowned industry experts.
- One can manipulate control devices that are connected to an Arduino micro-controller by utilizing the address bar of a web browser.
- Develop a web-based interface incorporating interactive buttons to facilitate the management and regulation of air conditioning devices within a networked environment.



# 2-Days IoT Training – Course Content

## Day 1

### Introduction to IoT

- Basics of IoT & IoT applications in various industries
- Updates in the IoT industry
- IoT alliances and standards

### Introduction to Arduino Open-Source Electronics Platform

- Overview of ARDUINO & Open-Source Micro-Controller platform
- Basics of Electronics, Sensors & Actuators

### Hands-on with Arduino

- About Arduino IDE
- Digital Output as LED Glow
- Digital Input using Switch
- Control Output using Digital Input

### Sensors Interfacing and Wifi Modules understanding & Functioning

### Thingspeak apps or alternative Open-Source app & it's functioning using Internet

- Temperature and humidity sensor
- Linking your X (formerly Twitter) account with Cloud Server
- Generate API and program Arduino
- How to tweet using Arduino & working with sensor data on Twitter

### Bluetooth Module

- Introduction to Bluetooth Module (HC-05)
- Interfacing of Arduino with HC-05

### MIT App Inventor

- Introduction to MIT app inventor platform
- Create app to control electrical devices in home/office

### Connections for Hospital Automation

- Understanding Relay Switch
- Making Connections of Relay Switch
- Controlling Relay using Arduino Output
- Connecting AC devices with Arduino via Relay

Day 2

## Arduino Programming for Bluetooth

- Program Arduino to read command transferred from app using Bluetooth
- Develop the module as voice-controlled home automation

### Understanding of Sensors like:

- Ultrasonic Sensor
- Mechanism of Ultrasonic Sensor
- Program Arduino and Interface Ultrasonic Sensor
- Measure distance using Ultrasonic Sensor
- MQ2 Gas Sensor
- Understanding Analog Sensor
- Measure Gas or Smoke level using MQ2 Gas Sensor
- Alarm System if smoke value crosses threshold level

### Data Reading and Controlling using online platforms

- Update Ultrasonic and MQ2 Gas Sensor reading over Cloud
- Turn WiFi Module as Station
- Connect some devices through WiFi in the given network & program Arduino
- Program Arduino to receive command as static I.P. address
- Control devices connected to Arduino from address bar of web browser

### Web Page Development

- Create webpage with buttons to control AC units in a network
- J QUERY Introduction, Program Arduino
- Connect ESP8266 and Relay with Arduino
- Run the complete unit using the web page for controlling of devices

### Review and Recap of Whole Session

- Doubt Clearing
- Question Hour
- Project Suggestions

### Recap and End of Workshop

- Discussion
- Feedback
- Awarding certificates to the participants
- Vote of thanks

# Participants Eligibility

The program is open to the Faculty/ Research Scholars/ Students of Science & Engineering Institutes, Healthcare IT and other Working Professionals are also eligible.

## Benefits for Participants

- Learn with Industry experts having broad industry experience.
- Complete hands-on based training.
- Training certificate from Cretile in association with IIHMR-Bangalore.

## Benefits for the Hosting Institutions

- Witness the platform for knowledge building of Students and Industry experts.
- Improve the in-house capabilities of the students and faculty.

### Program Director



**Dr. Pankaj Rahi**

Associate Professor-  
Health Information Technology Management,  
IIHMR-Bangalore

### Program Co-Ordinator



**Mr. Raavi Singh**

(Artificial Intelligence and IoT)  
M/s Makerinme Technologies Pvt Ltd.

## Arrangements at IIHMR-Bangalore for Training Program (Hosting Institution)

- Expert Faculty and Industrial Experts
- Seminar hall/classroom having enough capacity to conduct hands-on-session for all participants
- Good quality public address system ideally two cordless mic will be provided.

- Projector/Screen along with black/white board for teaching and presentation purposes.
- A minimum of 40 participants can be easily provided training.
- Accommodation is not provided at the institute and is not part of this registration. However if any participants requires accommodation the institute will facilitate in nearby empaneled hotels on chargeable basis.

## IoT Training Charges

Training Duration	Training Fee
2- Days Training Fee	Rs. 3000/-per attendee (including GST)

### The Fee includes:

- 2-Days Classroom Training
- Certificate of Training
- Soft Copy Training Material

### The Fee does not include:

- On completion of the training program the IoT kits are to be returned back by the participants to the host institute.

## Institute of Health Management Research

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**Google Map Link :** <https://maps.app.goo.gl/FmDeDEZfdd5DJdZA8>

SCAN HERE TO REGISTER



<http://bit.ly/Technicalworkshop>

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