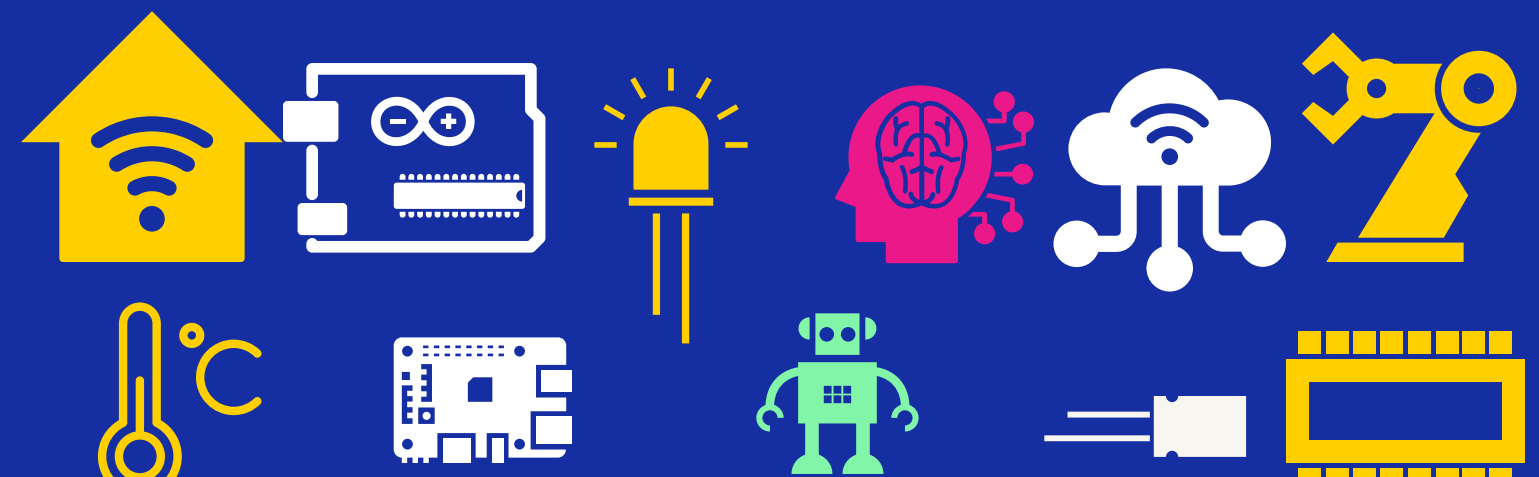# Learn to Build AIOT (AI+IoT) Projects

Summer Internship Training on
Artificial Intelligence of Things (AI+IoT)
Appleton Innovations, Vizag

BECOME AIOT ENGINEER

APPLETON INNOVATIONS

Online Summer Internship Training On

Artificial Intelligence of Things (AIoT)

The **Artificial Intelligence of Things (AIoT)** is the combination of **Artificial intelligence (AI) technologies with the Internet of Things (IoT)** infrastructure to achieve more efficient IoT operations, improve human-machine interactions and enhance data management and analytics.

Syllabus

Module 1: Introduction to Internet of Things

- Introducing to IOT
- IOT Applications
- IOT Network Architecture
- IOT Device Architecture
- IOT Communication Protocols
- IOT Product Development Overview

Module 2: Introduction to Artificial Intelligence of Things

- Introducing to Artificial Intelligence of Things (AIoT)
- Applying Artificial Intelligence to Internet of Things
- AIoT Applications
- Industry 4.0 and Case studies
- AIoT Product design and architecture

Module 3: Smart Applets suing IFTTT

- Introduction
- Automate day to day activities through IFTTT
- Posting updates on Facebook
- Automation with IFTTT
- Sending text message notifications
- Google Voice to control Home Appliances

Module 4: Getting Started with Arduino

- A tour of Arduino Board and Hardware: Power Supply, Power Pins, Analog and Digital Pins
- Types of Arduino Boards
- Introduction to Arduino programming
- Variables

- IF-Else conditional statements
- Loops: For, While
- Functions
- Digital Inputs and Digital Outputs
- The serial monitor
- Arrays and strings
- Using Libraries in Arduino
- Arduino data types
- Arduino Commands

Module 5: Sensors, Actuators & Electronics

- Introduction to sensors and types
- Analog Sensors: Temperature, Light Sensor, Potentiometer,
- Digital Sensors: Soil Moisture sensor, Motion Sensor, DHT11 sensor, Button
- Digital Signals
- Basic electronics: resistors, capacitors, diodes, transistors and etc.,
- Introduction to Actuators
- Interfacing Piezo Buzzer
- Interfacing LED's
- Interfacing RGB LED's
- Interfacing Relay

Module 6: Wireless Communication Technologies

- Introduction to wireless technologies: WiFi, Bluetooth, Ethernet, LoRaWAN, WiMAX and ZigBee
- Interfacing ESP8266 WiFi Shield
- Interfacing Bluetooth Module
- Interfacing Ethernet Shield

Module 7: IoT using Blynk Mobile Platform

- Installing Blynk application
- Setting up Blynk project
- Install Blynk Library
- Exploring various control widgets: Button, slider, zeRGBa, and timer
- Exploring various display widgets: Value display, Labelled value, Virtual LED Widget and Gauge Widget
- Notification widgets: Twitter, email
- Working with virtual pins
- Writing code and working with each widget

Module 8: Cloud Data Monitoring using Arduino:

- Concept & Architecture of Cloud
- Role of Cloud Computing in IoT
- Tools, API and Platform for integration of IoT devices with Cloud
- Internet of Things platforms for Arduino

- Posting the sensor data online
- Retrieving your online data
- Monitoring sensor data from a cloud dashboard
- IoT cloud platform and integration with Gateway
- Working with Thingspeak platform

Module 9: Smart Home with AI Chat Bots

- Introduction to chat bots
- Creating AI Facebook Chat bot using Chatfuel
- Controlling Home Appliances using AI based Facebook Chat bot

Module 10: Introduction to Python Programming

- Why python?
- Embedded C vs Python
- Execution Steps
- Basics of Python
- Understanding Python, Interpreted Languages
- Variables, Keywords, Operators and Operands
- Data Types in Python
- Flow Control, Condition Statement
- Loops, Importing Libraries
- Functions, Classes
- Python and Hardware Access
- Working with numpy, scipy, matplotlib, scikit-learn
- LED Blinking using Python Raspberry pi library
- Temperature and Humidity sensing using DHT-11 sensor
- Motion detection using Raspberry pi
- Sending email alerts when Motion detected using PIR sensor
- Configuring web server.

Module 11: MACHINE LEARNING

- Introduction to Machine Learning
- Supervised Learning
- Unsupervised Learning

Module 12: PREDICTION

- Simple linear Regression
- Simple Logistic Regression
- Polynomial Regression

Module 13: Anomaly Detection

- Anomaly Detection using Z-Score Analysis
- Anomaly Detection using interquartile range

Free Take Home Kit for Internet of Things Development

IoT Kit Contains
- IoT Development Board
- USB Cable
- Breadboard (Regular)
- Assorted Jumper Wires
- DHT 11 Sensor
- RGB LED
- LDR (Photo Resistor)
- Assorted LEDs
- Electronic Components
- Software tools and firmware

Participants will get take-home kit for free.

**Note: IoT Kits will be supplied once courier services are resumed in your locality.

AIoT Projects Details:

During Summer Internship training, students develop the following projects

- Project 1: Voice Controlled Home Automation using Smartphone

- Project 2: Control RGB Led lights using App

- Project 3: Artificial Intelligence-Based Chat bot for Appliance Control

- Project 4: IoT based Weather Monitoring System using Thing speak Cloud

- Project 5: Smart Applet projects based on IFTTT

- Project 6: Bit coin Alert System

- Project 7: Predicting Number Of Bike Sharing Users using simple linear Regression Model

- Project 8: Predicting Rain by using Simple Logistic Regression

- Project 9: Temperature Prediction using Polynomial Regression

- Project 10: Smart Refrigerator by using Anomaly Detection

Internship Training Duration:

- **30 days – 45 days**
- **30+ hours live sessions with industry experts**

Internship Fee:

- **INR 4500+GST (INR 5300)**
- **Mode of payment online**

Pay online using the link:

https://rzp.io/l/onlineinternship

Benefits:

- **Online Instructor Led Training**
- **Training Completion Certificate**
- **Internship Completion Certificate**
- **Project Completion Letter**
- **IoT Kit**

For more details, Contact us

Appleton Innovations Private Limited
D.No.43-7-30, Behind Railway New Colony Bus Stop,
1st lane, Opposite Haritha Apartments,
Railway New Colony, Visakhapatnam, Andhra Pradesh,
India, Pin 530016

Website:

www.appletoninnovations.com

Send a mail

info@appletoninnovations.com
appletoninnovations@gmail.com

Call us

+91-6301865670
+91-7569978839

For updates, follow us on:

https://www.facebook.com/appletoninnovations/
https://www.linkedin.com/company/appleton-innovations/
https://twitter.com/appletonInnova1