

Machine Learning for IoT applications

Use case : SMART CITY

Intelligent Environment Monitoring



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01

Machine Learning

Covers ML basics
Methodology
CRISP - DM

02

IoT & Data Push

Node MCU
Sensors
Cloud - Thingspeak

03

Realtime Analysis

APIs & Requests
Python IDE
Integrations

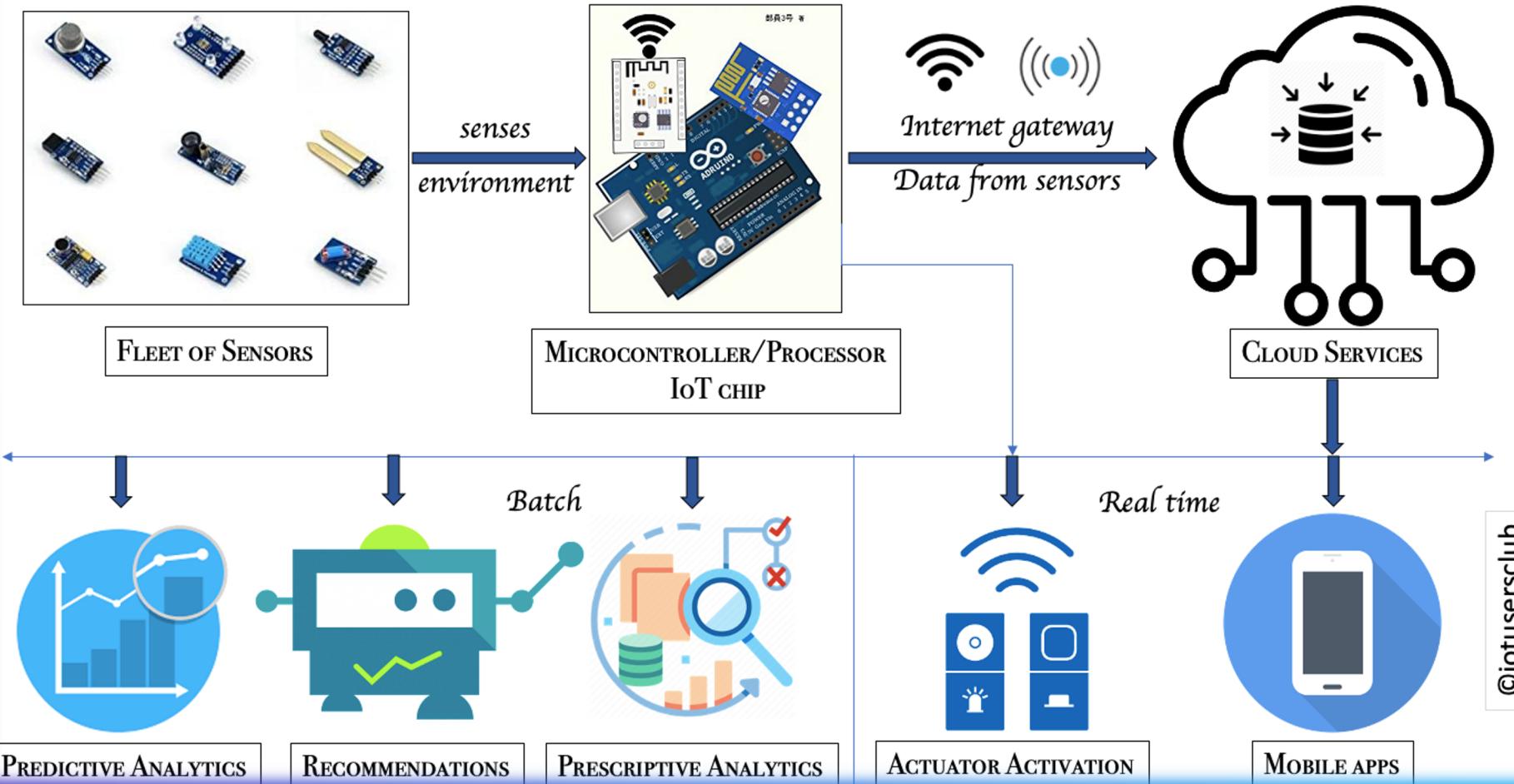
04

Predictive Analytics

Batch Processing
Climate Monitoring
Business Opp...s



IoT & MACHINE LEARNING



01. MACHINE LEARNING

Machine Learning Basics



Machine learning is the science of getting computers to act without being explicitly programmed.

Machine learning is the study of computer algorithms that improve automatically through experience.



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01. MACHINE LEARNING

Methodology : CRISP-DM

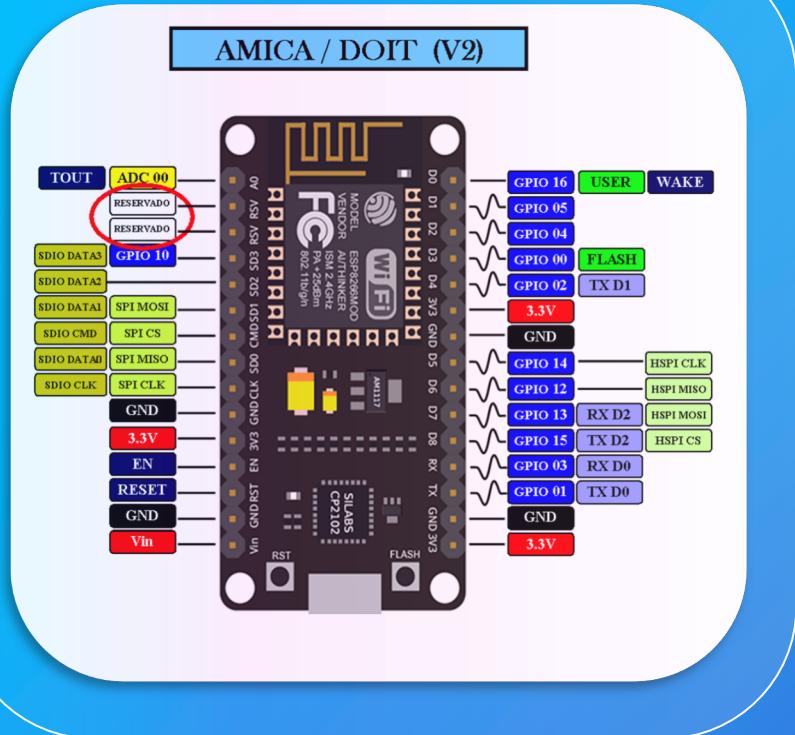


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02. IoT & Data Push

Node MCU



NodeMCU is an open-source Lua based firmware and development board specially targeted for IoT based Applications.

It includes firmware that runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module.

NodeMCU has 128 KB RAM and 4MB of Flash memory to store data and programs.



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02. IoT & Data Push

Sensors



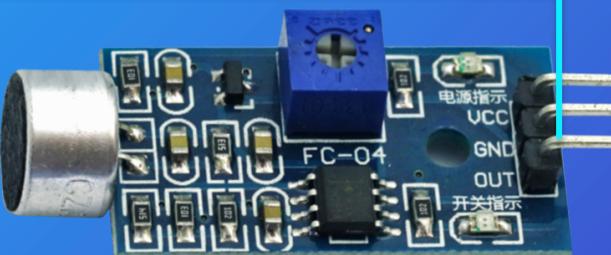
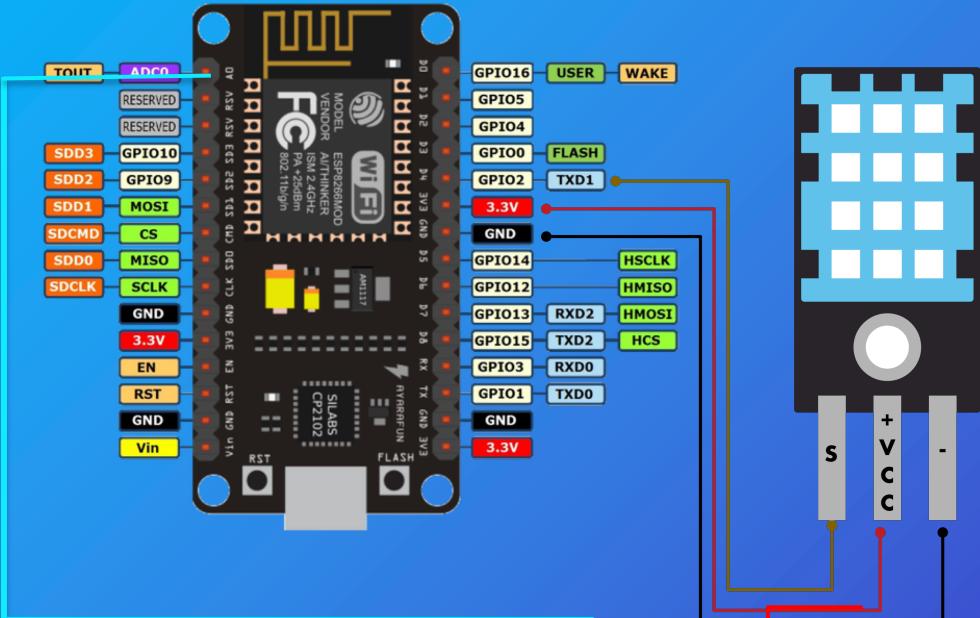
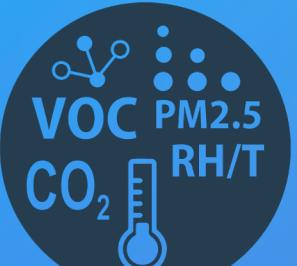
TEMPERATURE SENSOR



HUMIDITY SENSOR



SOUND SENSOR

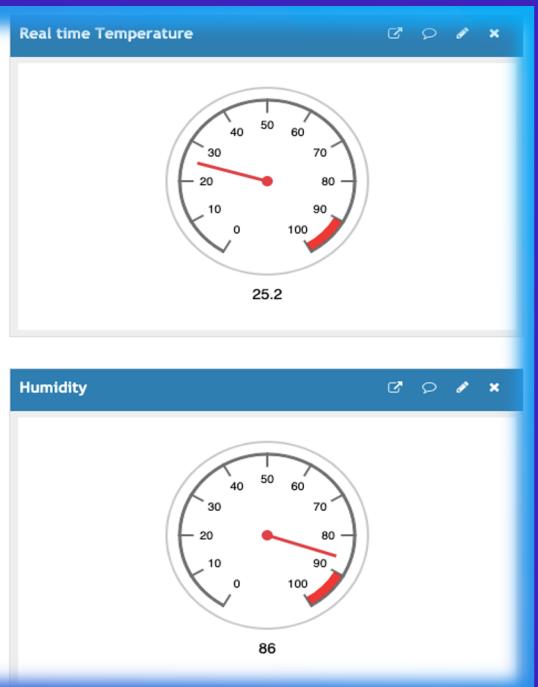
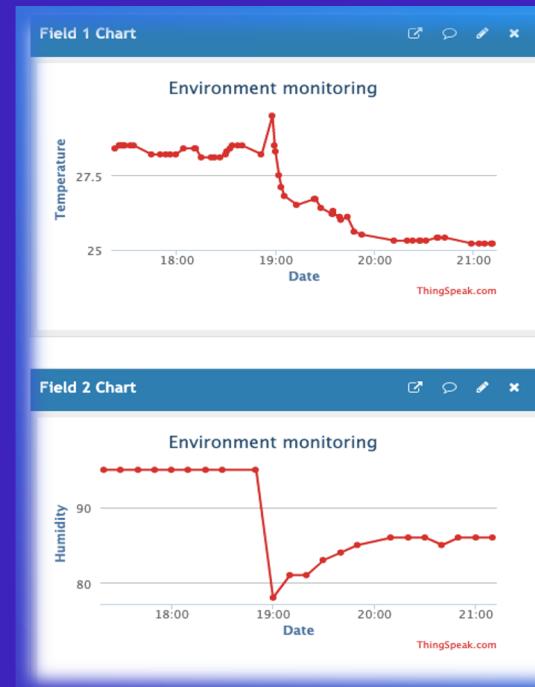


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02. IoT & Data Push

Cloud & Thingspeak



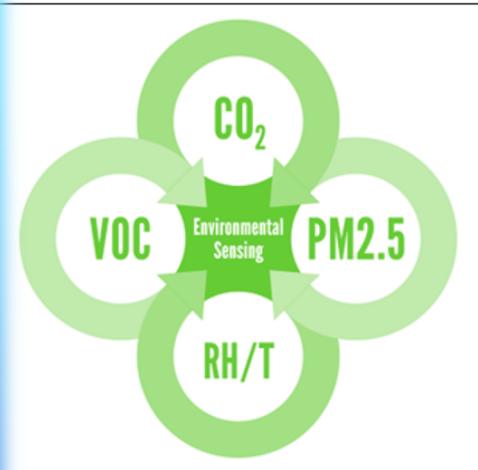
Thingspeak is an IoT analytics platform service that allows you to aggregate, visualize, and analyse live data streams in the cloud. You can send data to Thingspeak from your devices, create instant visualization of live data, and send alerts.



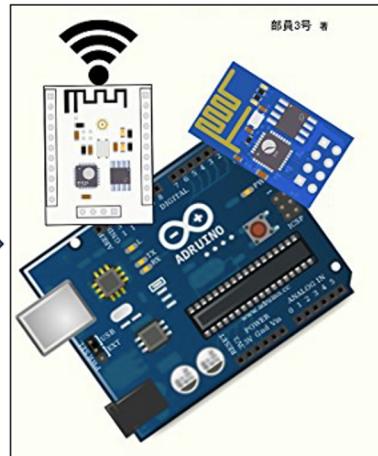
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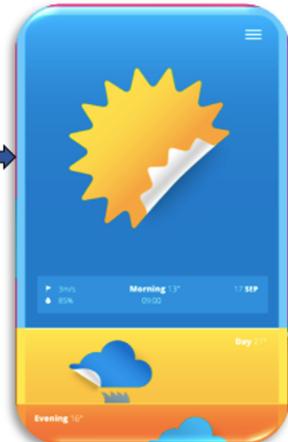
Intelligent Environment Monitoring



measures
environment



Real time



Batch



CLIMATE CHANGE MONITORING

ENVIRONMENTAL IMPACT BY INDUSTRIES

+
ifthisthenthat

Rain tomorrow? Get a mobile notification

by alexander

200k

03. Real Time Analysis

APIs & Requests



- An application program interface (**API**) is a set of routines, protocols, and tools for building software applications.
- Basically, an **API** specifies how software components should interact.
- Additionally, **APIs** are used when programming graphical user interface (GUI) components

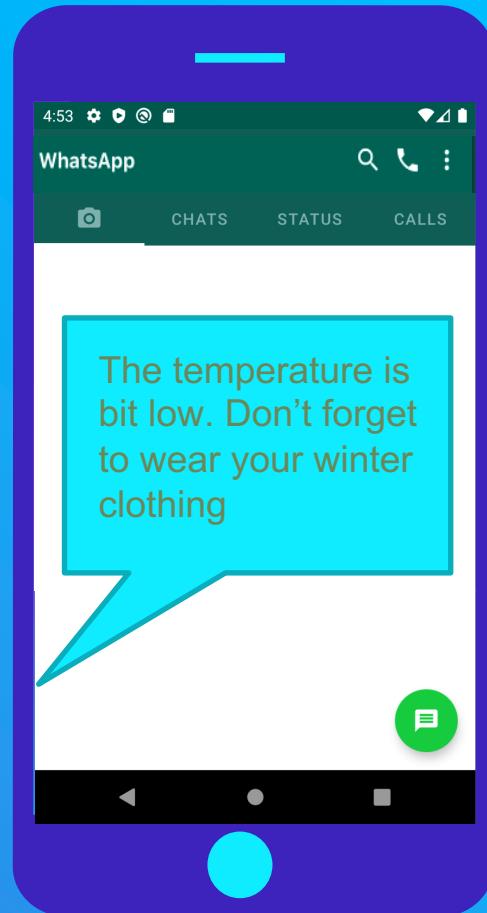
GET request :

- **GET** is used to retrieve and **request** data from a specified resource in a server, one of the most popular **HTTP** **request** techniques.
- In simple words, the **GET** method is used to retrieve whatever information is identified by the **Request-URL**.



03. Real Time Analysis

Python & Integrations



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04. Predictive Analytics

Climate Change Monitoring



Climate monitoring provides users with the information they need for effective planning and operations to respond to climate variations in the frequency, intensity and location of extreme weather and climate events



04. Predictive Analytics

Business Opportunities



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What's next ? – Stay Tuned

THANK
YOU



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