

Review Paper on: Internet Of things With Cloud Computing and Identification for Agricultural IOT Deployments

Aakshi Thakur

UNIVIRSIY INSTITUTE OF CONMPUTING

CHANDIGARH UNIVERSITY

Mohali NH-95, Ludhiana-Chandigarh State Hwy, Punjab 140413

Abstract

Internet of Things (IOT) framework shares the common goals of a consistent and structured data format that can be applied to any device, given the vast application scope of IOT which is a cloud-based platform for the deployment of Internet of Things (IOT) applications. The major features that have been followed in its design are the following: each object is an autonomous social agent; the platform as a service (PaaS) model is fully exploited; reusability at different layers is considered. The major components of PaaS services are used for easy management and development of applications by both users and programmers. The reusability allows the programmers to generate templates of objects and services available to the whole Lysis community. The data generated by the devices is stored at the object owners cloud spaces.

Introduction

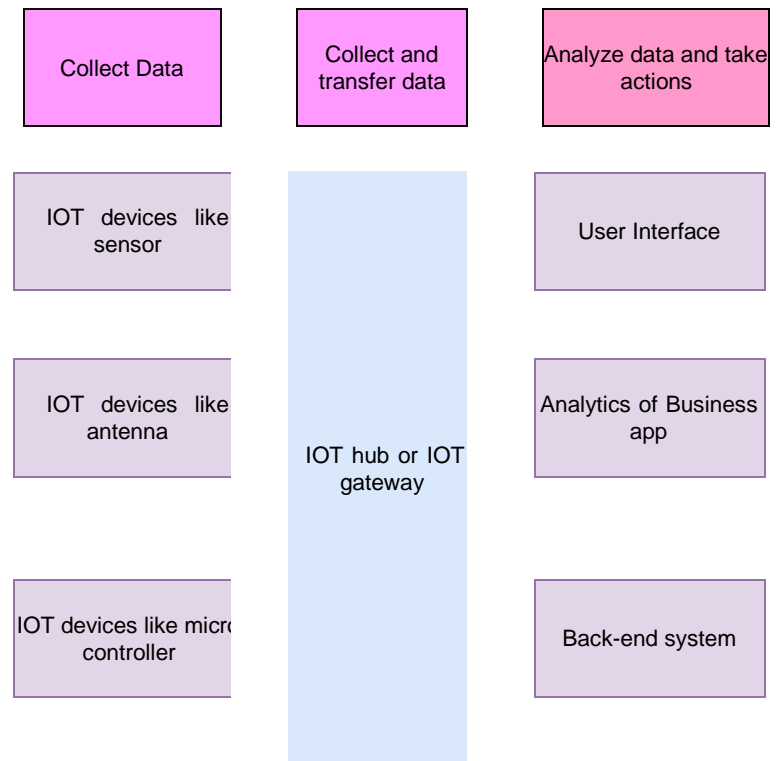
The internet of things is a system of interrelated computing devices, Mechanical and digital machines, objects, animals or peoples that are basically provided with the unique identifiers and the ability to transfer the data over the network without requiring human to human or human to computer interaction. Day by day, a variety of industries and companies are using IOT technique for more efficiency for better understanding, to

enhance customer service and to improve decision making. Also to increase the value of the business. Any other natural and manmade object which can be assigned internet protocol address and it will be able to transfer the data over a network. New trend in IOT like digital twin tech basically, it is a virtual representation of a product.

How IOT works

The IOT ecosystem consist of web based smart devices that are used for embedded systems, like sensors, processors and communication hardware .it is basically used to collect the important data and send and act on data they acquire form their environment. IOT devices used for sharing the sensor data. Sometimes, these devices communicate with the other related devices and also act on the information they will get form the other ones. These IOT devices do the work without the human intervention, but people also can interact with the devices for instance to set it, to give them instruction and access the data. The thing is most important that connectivity, networking and communication protocols that all are used with these web-enabled devices largely depend on the specific IOT applications deployed. IOT also used in machine learning and artificial intelligence for making some decisions also collecting the data and processing it easily and it will be more dynamic. It also found use cases for organizations within the agriculture, infrastructure and home automation industries, leading some organizations toward digital transformation. We propose a method of a blind agricultural IOT node and sensor identification,

Example of an IOT



The internet of things helps peoples to live smarter and work smarter, IOT is essential for business. IOT provides business with the real time look how their systems really work, IOT enables companies to process all data automatically and reduce the labour cost. Used to improve the service delivery, that will make it less expensive to manufacture and deliver goods, IOT is one of the most important technologies every-day in life, and it will continue to pick up more business realize the potential of connected devices to keep them competitive.

How IOT beneficial for the organisation.

The IOT offers many benefits to the organisation. Some benefits for industry and some are application across multiple industries. Some are the common benefits of IOT for business: Used for improve the customer experience. Everything will go automatically, so time and money save. Benefits for integrate and adapt business models. With the help of IOT, make better business decisions Generate more and more revenue. Using IOT, monitor overall business processes. IOT companies to think the ways they can approach their businesses and gives them the precious tools to improve their business strategies. Generally, IOT is most useful for manufacturing, transportation and for utility organizations, making use of sensors and other IOT devices however, it also found use cases for organizations within the agriculture, infrastructure and home automation industries, leading some organizations toward digital transformation. IOT can also give the benefit to farmers in agriculture by making their job easier. Sensors can collect data on rainfall, humidity, temperature and soil content, as well as other factors, that would help automate farming techniques.

The ability to monitor operations surrounding infrastructure is also a factor that IOT can help with. Sensors, for example, it could be used to monitor events or changes within structural buildings, bridges and other infrastructure. This brings benefits with it, such as cost saving, saved time, quality-of-life workflow changes and paperless workflow. A home automation business can utilize IOT to monitor and manipulate mechanical and electrical systems in a building. On a broader scale, smart cities can also help citizens to reduce waste and energy consumption. IOT touches every industry, including businesses within healthcare, finance, retail and manufacturing. This paper also presents a use-case that illustrates the implementation choices and the use of the Lysis features. The proposed approach reduces packet size, thereby reducing channel traffic and energy consumption, as well as retaining the capability of identifying these originating nodes. We propose a method of a blind agricultural IOT node and sensor identification, which can be sourced and operated from a master node as well as a remote server(MLP)-based models for blind identification, in real-time, using our implemented agricultural IOT implementation. The effect of changes in learning rate and momentum of the optimizer on the accuracy of classification

Great benefit of IOT for the organisations.

The ability to access information from anywhere at any time on any device. Successful improved communication between the connected electronic devices. By applying tools, automatically tasks will perform and also helps to improve the quality of the business's services and also reducing the needs for human intervention.

Some points in which IOT effects in business.

As the number of connected devices increases and more information will be shared between the devices, in the potential that a hacker could steal essential information also increases. Enterprises may eventually have to deal with massive numbers maybe even millions of IOT devices, and collecting also managing the data from all those devices will be challenging. If there is a bug in the system, it seems like each and every connected device will become corrupted. Since there is no international standard of compatibility for IOT, It is difficult for devices from different manufacturers to communicate with each other. ZigBee is a very much low-power, low-data rate wireless network that is used in industrial settings. Basically ZigBee is based on the Institute of Electrical

and Electronics Engineers (IEEE) 802.15.4 standard. The ZigBee Alliance created Dotdot, the universal language for IOT that will enable for smart objects to work securely and safely on any network and understand each other. Lite-OS is a Unix-like operating system (OS) for wireless sensor networks. Lite-OS will supports smartphones, wearables, intelligent and manufacturing applications, smart homes and the internet of vehicles. The OS also serves as a smart device development platform. The global standardization body, OneM2M, was created to develop reusable standards to enable IOT applications across different verticals to communicate. OneM2M is a machine-to-machine service layer that can be embedded in both software and hardware to connect the devices. Data Distribution Service was developed by the Object Management Group and is an IOT standard for real-time, scalable and high-performance M2M communication. Advanced Message Queuing Protocol (AMQP) is an open source published standard for asynchronous messaging by wire. The protocol is used in client-server messaging and in IOT device management. AMQP enables encrypted and interoperable messaging between organizations and applications. Constrained Application Protocol is a protocol designed by the IETF that specifies how much low-

power, compute-constrained devices can operate in the internet of things.

Long Range Wide Area Network is a protocol for WANs designed to support huge networks, such as smart cities, with millions of low-power devices. Blind Entity Identification for Agricultural IOT Deployments. It means that integration of various technologies to an Internet of Things (IOT) framework share the common goals of a consistent and structured data format that can also be applied to any device. The goals that is included minimizing channel traffic and system energy consumption. In this work, we propose to dismiss the requirement of certain crucial identifier fields from the packets arriving through various sensor nodes in an agricultural for IOT deployment. The proposed approach also reduces packet size, so that reducing channel traffic and energy consumption, as well as retaining the capability of identifying these nodes. A method of the blind agricultural IOT node and sensor identification, which can also be sourced and operated from a master node as well as a remote server. So that, this technique has the capability to detecting the radio link quality between the master node and slave nodes in other form, as well as identifying of the sensor nodes. We will be successfully trained and tested various multi-layer perceptron (MLP)-that is based on models for blind identification, in real-time, when using

our implemented agricultural IOT implementation. The effect of the changes in learning rate and momentum of the optimizer on the accuracy of the classification is also studied. The projected cumulative energy savings across on the network architecture, in conjunction with TCP/IP header compression techniques are substantial. But for a 100 node deployment using the combination of the proposed blind identification that is reduced sampling strategies over the regular IPv4-based TCP/IP connection, an estimated or annual saving. Data Distribution Service was developed by the Object Management Group and is an IOT standard for real-time, the universal language for IOT that will enable for smart objects to work securely and safely on any network and understand each other. Smart homes and the internet of vehicles. The OS also serves as a smart device development platform. Smart agriculture is also an important application area in which product exporting the countries, now the IOT application successfully deployed for the smart agriculture using the wireless sensor networks that is blind entity identification and smart farming, precision agriculture. Cloud computing also helping sensor networks to record measure data through the sensors. The all wireless medium also transferring the data to the cloud in which is used for the data analysis. It will be suitable for the

record that is measured data through the sensors.

Conclusion.

The future of the IOT is virtually unlimited due to the advancement in the technology and customer wishes to integrate the devices such as smart phones with household machines. Wi-Fi has made it possible to connect people and machines on land, in the air and at sea. So much data and information that is travelling from the devices to devices. Also beneficial for the security purpose for the technology to grow up and to keep the connectivity with all the demands. Productivity also will increase and amazing things will come into the existence in the world. As the designer of the IOT devices. You must have to use the modern best practices for delivering the secure products to the end users and the customers. The main is that our society is totally depend on the internet, we can easily search and take the result from the internet and also can full-fill our desires to improve our skills and grow up the business. Most of the data and information traffic will created and generated by the persons through email and the web other services. It also allows to build more tasks automation to better and best interaction with the real world environment. Information digitization processes have to design of the

computers, phones and other machines that is offering the standalone computer machines. But a technology that you will need to keep in mind from the prototype and the deployment to a long term support. IOT inherits many of the security problems networked computers that have had for many years, so that it is very much important for us as hardware engineers to learn from our fellow software and network engineers.

References.

https://www.researchgate.net/publication/328730466_Blind_Entity_Identification_for_Agricultural_IoT_Deployments

https://www.google.com/search?q=iot&rlz=1C1CHBF_enIN848IN848&oq=iot+&aqs=cchrome..69i57j0l4j69i60j69i61j69i60.8031j0j4&sourceid=chrome&ie=UTF-8

[3] Carlos Castillo (2014), "Predicting the future with IOT", www.alrazeera.com/.../predicting-future..., retrieved 10/02/14. [4] Chris deptula(2013), "With all of the IOT Tools, what is the right one for me", www.openbi.com/blogs/chris%20Dep%20tula, retrieved 08/02/14. [5] Divyakant Agrawal, UC Santa Barba, Philip Bernstein, Microsoft Elisa