Artificial Intelligence of Things (AIOT): A Review

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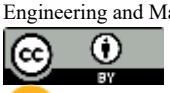

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Abstract: -

Functioning of the Internet is a continuous transformation that involves the interconnected systems that are known as theInternet of Things.
These systems are being widely used to address various facets of society.
The concept of the Internet of Everything is beingconceptualized as the next smart revolution.
However, the challenge of handling the huge amount of data generated by this system is still unknown.
This is why the focus of the research community is on developing new artificial intelligence (AI) and data science tools.
The potential of the Internet of Things with AI is immense.
Its potential to improve human life is not just about saving money. It could also help people live more efficiently.
However, thereare still some issues that need to be resolved before this technology can truly transform society.
The challenge that confronts us when it comes to handling the huge volume of data generated by the Internet of Things is that the existing computational power is not powerful enough.
The Internet of Things is more than just connectivity. It's also about helping people live better lives. However, there are still some issues that need to be addressed before it can truly be considered a success.

1. Introduction

It fascinates us to hear the word "smart".We still lack the intelligenceof a human. Consider the example of a smartphone. While it is "smart", it cannot do much on its own.
Apparently, it cannot put notifications or message alerts on ‘silent mode' automatically when the owner is driving The goal of AI is to make computers think and act like humans
With this development, industries will experience a rapid digital transformation.
To truly automate the world and its objects, we need an algorithm that emulates human learning as well as a data analysis module
To make various components/devices of the network automatic and self-standing, ML would create techniques, which would facilitate learning.
A growing number of attempts are being made to integrate ML and DA into sensors and embedded systems of smart systems.
AI technology is really compelling, and what it will lead to forces us to rethink everything we know about life and work.

1.1 Artificial Intelligence

Machines can be programmed with intelligence to perform tasks traditionally performed by humans (Artificial Intelligence (AI)).
Artificial intelligence systems continue to advance in terms of processing speed , adaptation, application speed, and capabilities.
As machines become more capable of performing routine tasks, their workload will increase Although, the goal of human intelligence is to make a perfect decision at the right time.
The technology industry is growing very quickly, and new technologies are continually introduced to us. As a result, data science techniques are heavily incorporated into AI.
In this sense, the discipline is a composite of many other areas of research.As a result, software development mainly involves ideas from computer science that focus on algorithmic efficiency and storage scalability.

1.2 Intuition or smarts

A person's 'intelligence' is seen at both the microscopic and macro scale. Objects that are smart are mostly interested in data.
To get to the bottom of the data, it must be analyzed this can be done with the help of Big Data Analytics. The final step is analyzing this big data
Certain characteristics and behaviors remain to be discovered.
A philosophy guiding machine learning is to automate analytical tasks To be accurate, this data needs to be stored or tracked.
A great no. of information is generated but all of them may not be useful.

1.3 Challenges

The challenge that confronts us when it comes to handling the huge volume of data generated by the Internet of

Things is that the existing computational power is not powerful enough.The Internet of Things is more than just connectivity. It's also about helping people live better lives. However, there are still some issues that need to be addressed before it can truly be considered a success.

The development of an idea for the Internet of Things can be overwhelming, especially if it involves a huge amount of resources. Even if the prototype is set, one still needs to figure out how to proceed with the project.

As the internet of things continues to develop, data is coming from many sources in a variety of formats at a faster speed

2. Proposed system

Artificial intelligence is impacting the future of virtually every industry and every human being.
Artificial intelligence has acted as the main driver of emerging technologies like big data, robotics and IoT, and it will continue to act as a technological innovator for the foreseeable future.
If you think about a camera, it really is the richest sensor available to us today at a very interesting price point. Because of smartphones, camera and image sensors have become incredibly inexpensive, yet we capture a lot of information.

From an image, we might be able to infer 25 signals today, but six months from now we'll be able to infer 100 or 150 signals from that same image.
The only difference is the software that's looking at the image.

Manufacturing: AI powered robots work alongside humans to perform a limited range of tasks like assembly and stacking, and predictive analysis sensors keep equipment running smoothly.

Healthcare: In the comparatively AI-nascent field of healthcare, diseases are more quickly and accurately diagnosed, drug discovery is sped up and streamlined, virtual nursing assistants monitor patients and big data analysis helps to create a more personalized patient experience.

Transportation: Although it could take a decade or more to perfect them, autonomous cars will one day ferry us from place to place.

3. Internet of Things

It was unthinkable to have video chat with their families in a different continent. Nowadays, it is a common thing.
Smartphones make it easy for people to accomplish things.

In 1991, we had the Internet of Computers (IoC) and in 2001, we had the World Wide Web. Increasingly, the Internet is being accessed via pocket phones and connected devices.
It is been estimated that 6.4 billion connected things will be in use worldwide in 2018.

There are a number of disciplines that get associated with IoT since various things are constantly connected to form an IoT.

Therefore, IoT can also be considered as a combination of various field.

In simple terms, the Internet of things is just a network of physical devices.

Connecting humans to these devices is accomplished by using the smart objects that are attached to both. Intelligent objects are the representation of the entity (either a human or a physical object).
Internet of Everything

Internet of Things concepts are usually misunderstood by people.

People, processes, and data are intelligently connected through the Internet of Everything. There's more to it than just allowing devices to communicate.
A smart object may be part of the Internet of Things.

In recent years, the internet of everything (IoE) has become a catchphrase to describe the integration of connectivity.

3.1 AI empower IoT

A vast collection of sensors, actuators, and other devices are at the heart of Internet of Things. As a result, any IoT-enabled device can sense its surroundings.
It is entirely dependent on the processing to be able to act accordingly.

IoT services are smart when they are able to process the task provided to them.

If an IoT system isn't smart, its capabilities will be limited, and it won't be able to evolve as rapidly. AI will be incorporated into a smarter internet of things system.

4. Conclusion

The future will bring intelligent gadgets, intelligent capsules that evaluate the impact of medications on the body, and intelligent houses.
The present research focuses on this very topic, which sounds like science fiction.
We will be forced to re-examine the effects of such automation on the human condition as we continuously deploy AI models in the world.
There will be serious repercussions for any software or hardware failure or bug There can be a lot of inconveniences associated with power outages as well.
The use of technology will continue to dominate our lives, and we will be dependent on it increasingly. In addition to routine tasks, machines are now able to handle tasks that were previously impossible.
Despite the numerous benefits of these systems, they have deep-rooted risks, such as isolation break.

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