Chapter 5

Internet of Things and Its Impacts in Computing Intelligence:
A Comprehensive Review – IoT Application for Big Data

Md. Golam Sarowar
East West University, Bangladesh

Md. Sarwar Kamal
East West University, Bangladesh

Nilanjan Dey
Techno India College of Technology, India

ABSTRACT

In the age of information superhighway, internet of things (IoT) is a hotly debated subject. The difference between ancient era and current time is the very lager digital communications among the people in whole world. The entire universe is moving towards digitalization and the key framework is the internet and connecting devices. The devices that are connected with internet are called internet of things. So, the impacts and influences of IoT are very significant in current computational analysis and dealings. Realizing the worth of big data in internet of things (IoT), this contribution gives instances of M2M messaging mechanism, cloud-based embedded computing, mobile computing, and cellular networking technologies in alliance with IoT devices, sensors, gadgets, etc., location spoofing detection for IoT, clustering tools for next generation, and details observation of methods, prospects, processing of big data which has a massive growth after the evolution of IoT. Finally, the concluding announcement interprets principal scheme of this work and future research directions in this field.

INTRODUCTION

The terms "Internet of Things" or simply known as IoT delegates the interconnection of various physical devices, smart phones, vehicles etc. by means of network connectivity. For making the process dynamic, various kinds of electronic devices, sensors, actuators and software are mounted with those physical devices to gather transactional data as well as exchange it. Specifically IoT assist the objects which are used to be perceived the actual situation and respond according that. Moreover, IoT being significantly valuable because of its remotely controlled system through a basic network infrastructure (Marotta et al, 2014). Moreover, all the significant opportunities of this new invention of information technology paves our physical world towards a new computer based, efficient, accurate and dominant infrastructure reducing human manipulation. Additionally, in this mint of condition IoT is declared as "the infrastructure of the information society" by Global standard initiative. Since IoT is combined with enormous types of sensors as well as actuators, it encloses high technological context likes intelligent transportation, Artificial intelligence applications, robotics, smart homes, smart society etc. as well. All of this technologies are being manipulated uniquely using interconnected computing system and software around its existing network ranges. Identically, The internet of Things are treated as the improved use of modern connectivity through advanced devices, systems which is fully machine based compressing a wide range of protocols, domains, services as well as applications (Holler et al, 2014). Therefore, IoT is basically refers to interconnection between machine to machine, device to device. However, the internet of things (IoT) is currently indicating the biggest upcoming technological evolution than ever (Raggett, 2015; Want et al, 2015). The whole universe is stepping towards the always connected situation from person to devices and machine to machine. Because of expansion of internet of things (IoT), the size of regular transferred data is going beyond the limit of human manipulation. In addition, for achieving some significant information analyzing this billions of data badly need more flexible, efficient, improvised processing approach. Since next generation is thought to be appeared with global computing system instead of desktop computing, therefore IoT will perform main role to paves present situation towards tomorrow's advanced and improved world. The universal architecture of IoT can be illustrated as follows.

Currently, all the information are being generated with high velocity, dimension, structured, semi-structured and sometimes unstructured. Thus, this upcoming data have to be cleaned for further manipulation. Recent year explosion of data is due to use of billions of sensors, actuators, smart phones, social media services. Moreover, thousands of devices gathering information simultaneously. Storage capacity maintenance and machine learning approaches are quite easy to manage than before which results in involvement of big data concept for present generation as well as

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