Chapter 10
IoT Impact and Challenges on Robotic Waiters in Automation of Restaurants and Hotels

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ABSTRACT

In China and Japan robots are used to serve in restaurants to serve or to just greet the customer. In restaurants robots need to understand the environment and make decisions accordingly, like changing the route if it finds any obstacle in between. To have this capability of making decisions and behaving like humans, robots need information from different sources from which they can understand the change in environment, position of other robots, and also the path to the destination. This can be done by integrating robots with IoT technology that allow the enhancement in the capabilities in robotic waiter. IoT also helps in monitoring the working parts of robots and movements. This chapter aims to discuss the real-time challenges and impact of IoT on robotics services in restaurants and hotels.

CONCEPT OF INTERNET OF THINGS (IOT)

This is known in industries that IoT is improving flexibility (Lennvall et al., 2017) in automated industries. Not only in industries but in homes also Internet of Things (IoT) had become an essential part. According to some reports, IoT (How Internet, 2016) (Turcu et al., 2012) refers to all devices that are connected to each other smartly and have the feature to communicate with each other via existing internet

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technology or any dedicated communication protocol. These devices in IoT infrastructure can be any object/thing like human, smart machine, animal, any physical or virtual thing etc. having unique address (Ray, 2016). In simple language Internet of things (IOT) is basically a network where physical devices or things are connected to each other (here physical devices are not just computer systems) for sharing information smartly via Internet (Patel et al., 2016) (Ali et al., 2015).

Vision of Internet of Things (IoT)

- IoT is a standard that spreading widely among the things by either connection, wired or wireless. And for communication unique addresses of things are in used. This address helps in communication among the things to make new application and services that develop a smart scenario or environment where all uniquely identified living, non-living, real or virtual are transforming information smartly to achieve a goal.
- IoT brings all the things under one roof, it mention the entire thing that can communicate via Internet with any means of communication. It not only include computer system, mobile or any electronic device as a thing but also non-electronic thing for example books, human, plants etc.. This is how IoT brings new paradigms in Internet, as this is allowing things to communicate intelligently because they can provide information about themselves. They can gain the information and meanwhile they can be the source of information.

Figure 1. Internet of things (IoT, 2015)