Chapter 3
IoT Security and Privacy

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ABSTRACT

The Internet is an innovative technology that is difficult to avoid since it is always evolving with new hardware and apps. Human-to-human and human-to-device communication is now the most popular forms of communication; however, the Internet of Things (IoT) foresees the near future when machine-to-machine (M2M) communication will become the standard. An item containing sensors, actuators, and CPUs may connect with other things to do useful tasks, according to the IoT concept. We have discussed the architecture of the Internet of Things in this post. The many IoT apps that users may use, along with their advantages and disadvantages, were also discussed. joined by a few IoT deployment tactics that are morally sound.

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1. INTRODUCTION

The term “Internet of Things,” or “IoT,” refers to the aggregate network of interconnected gadgets. Computer scientist Kelvin Ashton originally used the term “Internet of Things” in 1999. IoT was originally introduced to phone calls, smart grids, and computers by Aston, a scientist. Additionally, Ashton suggested tagging things with radio frequency identification chips so that they could be tracked via a supply chain. It is embedded with software, sensors, and other technology. Its only function is to establish internet-based connections and data exchanges with other systems and devices. In the past several decades, the IoT has become a new technical technology that is enabling us to achieve new heights. In engineering, it integrates the devices using the internet in an active manner (Sadiku et al., 2016). This concept holds the key to a future full of promises and development. Along with development, IoT promises us many other facilities due to it being time-saving, cost effective and provides ease of life. One of its most impressing features lies in its automation. It provides faster output with minimum machine-man interaction needed. It had great potential to offer for making life and technology easier than ever. Nowadays, IoT is being applied to increase communication, field testing, ease of governing the machines and many other things. Being accessible and understandable to all, it has a bright future in the engineering. People have started to be more accepting towards such technology and it is truly remarkable because it reduces the work load by a lot. Figure 1 depicts the fundamental idea of the IoT, which is that objects and people may communicate with each other over a variety of wireless networks and channels at any time. The technologies that humans discover advance in tandem with human development. It's a balanced way of living. Furthermore, there is a lot of room for advancement for technologies like IoT in the future (Tiwary et al., 2018).

Figure 1. Basic Idea of the Internet of things (Alferidah et al., 2020)