Chapter 13

Integrating Deep Learning in an IoT Model to Build Smart Applications for Sustainable Cities

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ABSTRACT

These days, many CS experts focus their efforts on IoT. IoT is an emerging & cutting-edge technology that enables many items, including vehicles and home appliances, to connect and cooperate via mechanisms like machine to machine communication, big data, and AI. It has found use in a wide range of settings, from smart homes and cities, to healthcare and agriculture, to factory automation. Smart cities are becoming smarter, cars are getting more features, and health and fitness devices are getting more sophisticated thanks to the internet of things. Many problems that are directly relevant to the IoT's development have yet to be resolved. The exponential development of IoT has given birth to new problems, including concerns about personal data and security. There is need of a comprehensive approach that tackles the scalability, security, efficiency, and privacy concerns raised by the widespread deployment of IoT.

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1.1 INTRODUCTION

The term "ınternet of things" refers to a system in which electronic devices, software, a network system of items, and various sensors are used to collect and share data. These "things" might be either humans or physical objects.

1.1. IoT

IoT is the cutting edge of internet connectivity methods. In this way, objects may recognise one another and share data that they have collocated (Mehmood et al., 2019). Using network infrastructure and services, IoT ideas make it possible to link physical items at will (Figure 1.1). Because these things interact intelligently with each other and allow judgments relatively, the IoT has an effect on several areas of education, technology, and industrial applications (der Mauer et al., 2019). If the hype is to be believed, the IoT will go down in history as a game-changer for our time. Connected smart devices can gather a wealth of information that can improve the quality of life in many ways, including the ability to make more well-informed decisions, lower costs, detect and monitor resources and environmental factors, and provide more effective and innovative medical care.

Figure 1. IoT Concepts