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Chapter 15 The Role of Machine Learning in Addressing Security Challenges for IoT Applications

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Abstract:

Since the evolution of Internet of Things (IoT) to till date billions of smart devices are connected to the network. The most of the smart devices connected through using the wireless technology. The applications of IoT are like smart home, smart city, healthcare network, supply chain management and smart agriculture. In most of the applications various sensors are deployed to capture the information from environment. As in one application many smart devices are deployed to monitor and capture the data from the environment in real time, it generates huge volume of information. The various security challenges like unauthorized access, data leakage, replay attack, Denial of Service, Man-in-the-Middle attack etc. are faced during IoT application implementation. As most of the existing security protocols are not suitable to address the security problem. In this paper, authors explore the machine learning techniques to address the security challenges in IoT applications. The extensive study was conducted to identify existing work regarding integration of ML in IoT. The lastly research challenges and corresponding solution approach are discussed.

Keywords: Security, Privacy, IoT, Machine Learning