Chapter 21
A Close Glimpse on the Security Challenges in the Smart Era

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ABSTRACT

Today the world is facing many cyber-crimes irrespective of the geographical boundaries, and privacy is being compromised all across the globe. According to some assessments, the extent and frequency of data breaches are increasing alarmingly, prompting organizations throughout the world to take action to address what appears to be a worsening situation. In today's world we cannot live without technology and cyber security is vital for keeping our personal information safe. This chapter would improve the awareness about technical, privacy, and security infringements and help in protecting data by prioritizing the most assailed sectors. It will help the key audience to learn about data leaks and other ways our privacy and security gets compromised due various challenges, diverse up-to-date prevention and detection policies, fresh challenges, favourable answers, and exciting opportunities.

INTRODUCTION

Human life without technology is like birds without feathers. We are surrounded by technology at all times and use it to solve a variety of difficulties. It is the result of added knowledge and its use in all processes, skills, techniques, and methods used in manufacturing products and technical research (Sha-

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pira et al., 2013). The advancement in the technological lives raises the need of more secure information systems to avoid the leak of information. As now-a-days, the real power lies in the information only. The internet is used by approximately 4.9 billion people across the world as of 2022.

The epidemic of the Corona virus has also demonstrated the relevance of technology in our daily lives. We can utilise technology to remain in touch, work, communicate, and, well, survive. When grocery shops and marketplaces were closed, technology aided us in meeting our food needs. Those who have managed to keep their jobs amid the epidemic have done so because to technological advancements.

Technology has progressed steadily from the stone era to roughly 100 years ago, and it has now developed and updated on a massive and widespread scale in a very short period of time. AI is a groundbreaking technology that has been growing rapidly and has the potential to change the world (Sinha et al., 2022; Lodha et al., 2022; Mohammad et al., 2022). Nobody can argue that technology has become so vital in our lives that it's almost impossible to picture life without it (Goyal, 2022; Panwar et al., 2022.; Kumar et al., 2022; Sobhani et al., 2022). Almost every industry has been impacted by technology and it is used in almost everything be it transactions, creating job profiles, education, business, healthcare, news, awareness, communication and even security purposes such as spy-cams, doorbells, etc. In today's world, life without technology is like living alone on an isolated island (Goyal, 2022.a; Goyal, 2022.b; Goyal, 2022.c). Artificial Intelligence (AI), Machine Learning (ML) and IOT are inseparable parts of our lives.

Every coin has two sides, so with the conveniences and boons of technology also come the harms and threats to individuals and organisations. With the data being online unwanted and mischievous people can access it through some loopholes and use it for fraudulent and malicious acts. As we are aware technology today is evolving at a very rapid pace and so are the loopholes in it. It is impossible to find all the vulnerabilities in the system beforehand. It is a huge challenge for us to make the systems secure as we need to catch all the loopholes to make sure the system is secure but if the hacker catches hold of even one vulnerability it can immensely damage and compromise a system and information.

The IT security systems are not too capable of protecting users and organisations from the unauthorised access of information by hackers. People can be easily hacked exposing them and their personal data high-risk attack subjects (Shu & Yao, 2012) Often it is too simple to trick people into clicking on harmful links and or downloading and installing malicious apps. and or backdoor's resulting in infecting their corporate networks and electronic devices. In terms of local cyberattacks, worldwide India has ranked at 11th and has already had 2,299,682 occurrences in the first quarter of 2020.

MALWARES

It is a software that is designed with the purpose of disrupting, damaging, stealing or performing nearly any function that could be desired by an attacker. Malwares are often delivered over networks. There are various types of malwares available today and hence, there are numerous ways to infect and disrupt devices. They damage the security and privacy of users and organisations with the help of technical loopholes and vulnerabilities and human greed and fear.

The following are some common malwares:

1. **Trojan Horse:** Trojan as the name suggests is inspired by the ancient Greek story of the misleading and deceptive Trojan horse that led to the fall of Troy. This virus is installed in the system like a legitimate looking program deceiving users of its true intentions (Mathew et al. 2010). Once