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Abstract:

ABSTRACT Performance enhancement and cost-effectiveness are the critical factors for most industries. There is a variation in the performance and cost matrices based on the industrial sectors; however, cybersecurity is required to be maintained since most of the 4th industrial revolution (4IR) are based on technology. Internet of Things, IoT, technology is one of the 4IR pillars that support enhancing performance and cost. Like most Internet-based technologies, IoT has some security challenges mostly related to access control and exposed services. Artificial intelligence (AI) is a promising approach that can enhance cybersecurity. This chapter explores industrial IoT (IIoT) from the business view and the security requirements. It also provides a critical analysis of the security challenges faced by IoT systems. Finally, it presents a comparative study of the advisable AI categories to be used in mitigating IoT security challenges.

Complete Specification

Description:FIELD OF INVENTION
This is designed to be used as a reference to study the effectiveness of Artificial intelligence (AI) and to enhance the security techniques for mitigating the threats faced by IIoT deployment.
BACKGROUND OF INVENTION
The 4th Industrial revolution (4IR) is the current era where industry is driven by technology. It encourages the co-operation between scientific knowledge and experience with business mindset and requirements. The key technologies that allow 4IR to be sustained are additive manufacturing techniques, Autonomous and collaborative robotics, Industrial Internet of Things (IIoT), Big data analytics, Cloud Manufacturing techniques. The current scenarios show the benefits of IIoT in improving QoS industries, starting from predictive maintenance, reaching remote controlling of assets, and deploying Digital Twin concept that allows virtualizing the operations environment and permits the owner to be proactive when any anomalies are detected. Even though IIoT adds value to the traditional industry, there should be a balance between the operational benefits and the security level.
SUMMARY
Internet of Things (IoT) considers the interconnection between several devices, i.e., industrial systems, intelligent sensors, autonomous vehicles, mechanisms and terminals, mechanical systems, and so on. Alternatively, it can be termed as a network of physical things or objects that are connected with limited communication, computation, and storage capabilities along with embedded electronics (i.e., sensors and actuators), connectivity of network, and software that enables these things to exchange, analyze, and collect data. IoT relates to our everyday life, extending from smart devices in the household, i.e., smart meters, IP cameras, smoke detectors, smart

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