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A Comprehensive Review on the Internet of Things Network

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Abstract
The Internet of Things (IoT) is becoming increasingly important due to its pervasive impact on various aspects of modern society and its potential to drive significant advancements in technology, industry, and everyday life. IoT relies on various technologies, including wireless communication protocols (e.g., Wi-Fi, Bluetooth, cellular), sensors and actuators, cloud computing, and data analytics. Researchers all around the world are working to improve the performance of the IoT network. Until now, the realization of full IoT has not been achieved and is not satisfactory according to its vision. Still, IoT technologies are emerging and expanding to meet the requirements of evolving new use cases. This paper reviews state-of-the-art developments on IoT by researchers, professionals, and IoT organizations. The article also focuses on the economical, regulatory, and ethical perspectives regarding the deployment of IoT. The paper also evaluates and contrasts several IoT research tools such as the testbed and simulator. At last, the article explores the path of research on IoT that helps future researchers by providing useful resources and strategic guidelines. © 2025 by the authors.

Author Keywords
internet of things; sensors; simulation; smart system; testbed

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