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Exploring the integration of internet of things and sensor technology in healthcare

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Abstract:

The Internet of Things (IoT) stands as an innovative technological paradigm, housing billions of sensors across diverse applications. At the core of IoT lie sensors, pivotal in gathering data for analysis. With its extensive reach spanning smart cities, agriculture, education, and notably healthcare, IoT and sensors play a transformative role. Particularly in healthcare, IoT has emerged as a critical tool in tackling global health crises, exemplified in the recent battle against COVID-19. The pandemic has underscored the growing necessity for remote and digital healthcare solutions, driving up demand for IoT-enabled patient monitoring systems. This paper aims to delve into various applications, technologies, and challenges within the realm of healthcare IoT. Extensive searches across databases like Google Scholar, Elsevier, PubMed, ACM, ResearchGate, Scopus, and Springer were conducted to gather insights. By highlighting key applications of IoT in healthcare, this paper endeavors to provide valuable research directions for healthcare stakeholders, academia, and researchers to address prevailing challenges. Through efficient utilization of IoT, the healthcare system can deliver enhanced treatments while optimizing resources. Moreover, by integrating IoT with smart technologies, not only does computational efficiency improve, but it also facilitates pervasive, profitable, and accessible healthcare services. Lastly, this paper addresses future avenues and hurdles, offering pragmatic suggestions to bolster the IoT healthcare system's resilience in combating COVID-19 and potential future pandemics.

Keywords:

COVID-19, healthcare system, Internet of Things, IoT application, sensors, smart technology