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Research Article

A Legal and Security Study on Data Privacy in Smart Cities with a Focus on IoT and Blockchain

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Abstract

The advancement of smart cities and the expansion of the Internet of Things (IoT), along with the need to reduce energy consumption in green smart cities, signify a revolution in urban planning and management. Despite social improvements and increased efficiency, these advancements bring new challenges, particularly in the realm of security and privacy protection. The widespread use of sensors and smart devices leads to the collection and processing of vast amounts of data, which, if mismanaged, can pose significant threats to data security and individual privacy. Blockchain, as an emerging technology, offers new capabilities for enhancing security and privacy. This study conducts a detailed examination of the impact of existing policies and laws on security and privacy in smart cities and analyzes the role of IoT and blockchain technologies in improving these areas. It also explores the security and privacy challenges and the integration of these technologies into urban management. The aim of this research is to optimize the use of modern technologies while ensuring the security and privacy of citizens in smart cities, thereby enhancing overall efficiency and public welfare while safeguarding citizens' privacy rights.

Keywords: Smart cities, Privacy, Internet of things, Blockchain, Data security.

Highlights

- Addressing new challenges, particularly in the areas of security and privacy in smart cities.
- Examining management methods in collecting and processing large volumes of information, considering the increase in sensors and smart devices in smart green cities.
- Analyzing security and privacy issues in smart cities and the impacts of modern technologies on contemporary life.
- Investigating methods to create social improvements in alignment with the revolution in urban planning and city management.

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