

Chapter 11

Smart Cities, Secure Data: Navigating the Evolving Landscape of Data Protection Challenges



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Abstract The integration of technology and urban planning in the dynamic field of smart cities not only offers unprecedented opportunities but also poses significant challenges, especially in data protection.

In smart cities, the complex web of data from social dynamics to environmental indicators highlights the importance of sophisticated technology for data collection and analysis. Therefore, effective data visualization and communication are essential to transform complex data into actionable insights. Additionally, addressing the complexities of data ownership, management, and governance underscores the ethical obligations of responsible data governance.

Architectural strategies are explored to protect smart city infrastructures from dynamic threats, including network segmentation, encryption, and endpoint defense. In addition, challenges, such as cyberattacks, and vulnerabilities caused by Internet of Things (IoT) use are examined and preventative strategies to improve resilience are discussed. Insights from real case studies on incident response and crisis management are included. The importance of stakeholder collaboration and public awareness in strengthening cyber resilience is emphasized, as is the need to adapt data practices to evolving legal and ethical frameworks to ensure transparency and trust.

This study anticipates new trends and advocates for combining technological progress with ethical commitments, highlighting data protection as the key to sustainable urban planning. It integrates scientific and practical evidence and provides

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