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Smart Cities and Urban Computing

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Abstract: *The rapid pace of urbanization has intensified the need for sustainable, efficient, and technology-driven city management systems. Smart cities, empowered by urban computing, leverage advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), cloud computing, and big data analytics to enhance the quality of life for citizens. Urban computing integrates data collected from various urban sources—such as sensors, transportation systems, and social media platforms—to analyze and optimize city operations. This fusion enables intelligent decision-making in critical areas including traffic management, energy consumption, healthcare services, waste management, and public safety. Furthermore, it promotes citizen engagement and supports environmentally conscious urban planning. Despite its immense potential, the implementation of smart cities faces challenges related to data privacy, interoperability, cybersecurity, and ethical governance. This paper explores the concept of smart cities, the technological foundations of urban computing, and their transformative role in building sustainable, connected, and resilient urban environments for the future.*

Keywords: Smart cities, Urban computing, Smart transportation, waste management, green technology, urban innovation

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