AI-Driven Smart Cities: Improving Urban Infrastructure and Services

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Abstract: *This research explores the transformative role of artificial intelligence (AI) in shaping smarter cities, focusing on its applications across urban infrastructure, public services, and sustainability. AI-driven systems are revolutionizing how cities manage traffic, energy, waste, and public safety, leading to more efficient, responsive, and resilient urban environments. Key case studies, including Singapore, Barcelona, Toronto, and Pune, illustrate the diverse impacts of AI on improving urban mobility, reducing energy consumption, enhancing public safety, and optimizing resource management. However, the integration of AI into city planning and governance also raises important ethical considerations, particularly regarding data privacy, algorithmic bias, and equitable access to technology's benefits. For urban planners and policymakers, balancing innovation with these ethical concerns is essential to building public trust and ensuring that AI contributes positively to urban life. This research underscores the importance of transparent governance, ethical frameworks, and citizen engagement in the successful deployment of AI in smart cities. Ultimately, AI holds significant potential to enhance the liveability and sustainability of cities, but its success depends on how well its implementation is managed in line with broader social and ethical considerations*

Keywords: Artificial Intelligence (AI), Smart Cities, Urban Infrastructure, Public Services, Sustainability, Traffic Management, Public Safety, Ethical Considerations, Urban Planning, Data Privacy