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### Patent Search

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#### Abstract:

IOT AND MACHINE LEARNING APPLICATIONS IN WASTE MINIMIZATION AND RECYCLING FOR SMARTER CITIES The method for the development of the energy conversion, emission estimation, and waste pyrolysis are all enhanced by artificial intelligence and chemical analysis. We also describe how artificial intelligence can lower costs and increase efficiency in waste management systems for smart cities. Bluetooth facilitates short-range data monitoring via an Android app, while IoT allows real-time data control and location. The accuracy of waste label classification, sensors data estimation, and system usability scale (SUS) are listed and interpreted in order to assess the effectiveness of the developed model. Cities will produce waste at an alarming rate, necessitating more intelligent waste collection methods. Waste collection must be timely, and travel must be made in real time based on waste conditions. For different combinations of three sensor values, such as the amount of biodegradable and nonbiodegradable waste, concentration of toxic gas, a machine learning technique like KNN is used to generate an alert message. The intelligent GUI was used to track the corresponding unfilled trash bin, which were filled with waste at varying levels. FIG. 1

#### Complete Specification

Description: IOT AND MACHINE LEARNING APPLICATIONS IN WASTE MINIMIZATION AND RECYCLING FOR SMARTER CITIES

#### Technical Field

[0001] The embodiments herein generally relate to a method for IoT and machine learning applications in waste minimization and recycling for smarter cities.

#### Description of the Related Art

[0002] The more basic waste management procedures were used, with a few people picking up trash from the streets and putting it in appropriate locations. The trash was dumped in these locations after the trucks were full. But as artificial intelligence advances, the waste management sector is undergoing a dramatic shift in the direction of sustainability and financial success. Remarkably, the reports show how the recycling process depends on appropriate household waste management. The results are incalculable if we combined contemporary technology with the waste management system. A hospitable biological environment is the outcome of proper waste management. Urban development is the goal of smart city development, which integrates ICT and IoT technologies to manage a city's assets and stay safe. Smart cities encompass smart people, smart governance, smart businesses, smart living, smart mobility, smart environments, and smart economies. Quality of life is provided by smart cities. The development and deployment of domain-specific IoT systems are accelerated by enabling technologies such as web development tools, cloud computing data, lightweight communication protocols, open-source server programs, and advanced smart sensors.

[0003] A rapidly developing technology, artificial intelligence is becoming more and more popular across a range of industries, especially waste management. The management of solid waste can be completely transformed by integrating robotics and artificial intelligence into the construction and operation of urban waste treatment plants.

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