SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES

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PROJECT OBJECTIVE

ABSTRACT:

Traditional waste management system operates based on daily schedule which is highly inefficient and costly. The existing recycle bin has also proved its ineffectiveness in the public as people do not recycle their waste properly. With increase in population and industrialization of nation throughout the globe, waste has become great concern for all of us. With the development of Internet of Things (IoT) the traditional waste management system can be replaced with smart sensors embedded into the system to perform real time monitoring and allow for better waste management. The aim of this research is to develop a smart waste management system using Lora communication protocol and Tensor Flow based deep learning model. The system also adapt with network environment, to manage all information from waste management. The GPS module is used to locate the system for easy pickup and to track the bin by using GPS and the very bins are provided with the ID name. Object detection and waste classification is done in TensorFlow framework with pre-trained object detection model. Ultrasonic sensor is embedded into each waste compartment to monitor the filling level of the waste. RFID module is embedded for the purpose of waste management personnel identification. As the result we proposed a prototype of smart waste-bin that suitable for many kind of conventional waste-bin.