Patent Search

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Inventor

Name	Address	Country
O.V.Subrahmanyam	Assistant Professor, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
T. VAJRESH	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
N. BHARATH MANIKANTA SAI	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
P. SATYA ANANDA RAJU	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
MD.AB.SIDDHIK	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
P.TEJAMANIKANTASWARUP	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
P.SRAVAN RAM KUMAR	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India
R. REVANTH	Student, Department of CSE(AI&ML), Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India

Applicant

Name	Address	Country
Vishnu Institute of Technology	Vishnu Institute of Technology, Sri Vishnu Education Society, Vishnupur, Bhimavaram, Andhra Pradesh 534202	India

Abstract:

The present disclosure relates to systems and methods, and provides a Smart Garbage Monitoring System (100) for monitoring garbage levels in multiple dustbins in and providing centralized monitoring through a cloud-connected mobile application. The Smart Garbage Monitoring System (100) includes an ESP32 microcontroller ultrasonic sensor module (104), and a garbage level percentage conversion (106) that converts measured fill distance into a standardized fill-level metric. The Smart G Monitoring System (100) is configured to monitor garbage levels in multiple dustbins in real time and provide centralized monitoring through a cloud-connected mob application in response to continuous operation. This configuration prevents garbage overflow and improves waste collection efficiency for municipal waste manager

Complete Specification

Description:TECHNICAL FIELD
[001] The present invention relates to the field of Internet of Things (IoT) based Smart Garbage Monitoring Systems, wherein each dustbin is equipped with sensors microcontroller to measure garbage levels and transmit data through wireless communication to a cloud database for centralized mobile dashboard monitoring an generation.
BACKGROUND
[002] The field of Internet of Things based waste monitoring has seen significant development in recent years, driven by rapid urbanization and population growth i and semi-urban areas. Municipal corporations and local governing bodies are increasingly required to manage large volumes of solid waste generated across geographically distributed public locations. Traditional waste collection infrastructure, however, has not kept pace with this growth, resulting in persistent challenge to hygiene, sanitation, and public health. The accumulation of garbage in public spaces contributes to environmental degradation and creates conditions conducive spread of communicable diseases.
[003] Conventional municipal waste collection systems typically operate on fixed schedules and rely on manual inspection by sanitation workers to determine whet dustbins require emptying. Such approaches consume considerable manpower and time, and may result in collection vehicles visiting bins that are not yet full or, conversely, failing to service bins that have already overflowed. This inefficiency leads to increased operational costs and suboptimal utilization of municipal resourc Overflowing dustbins in public areas generate foul odors and may pose risks to the surrounding environment and public health.
[004] Monitoring systems that have been proposed in some cases attempt to address fill-level detection at individual bins using locally mounted indicators or rudim

View Application Status