Literature Survey

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1	**Paper title**	CNN-Based Smart Waste Management System Using TensorFlow Lite and LoRa-GPS Shield in Internet of Things Environment (2021). Sallang, Nicholas Chieng Anak, Mohammad Tariqul Islam, Mohammad Shahidul Islam, and Haslina Arshad.
	Problem definition	Develop a smart waste management system using the deep learning model that improves the waste segregation process and enables monitoring of bin status in an IoT environment
	Methodology/ Algorithm	Deep learning Algorithm ,Genitic Algorithm and CNN methodology
	Advantages	Increasing the size of the dataset by adding more variants of waste images in each class and increase the types of waste to expand the coverage of waste detectable
	Disadvantages	➢ The small dataset can hardly improve the CNN-based object detection model to detect more waste precisely but only five types of common waste. ➢ The usage of batteries in the system requires the renewal of batteries after a period.

2	**Paper title**	From smart city to smart citizen: rewarding waste recycle by designing a data-centric iot based garbage collection service(2021). Pelonero, Leonardo, Andrea Fornaia, and Emiliano Tramontana.
	Problem definition	Main constituent of this system is a waste bin which will automatically segregate the waste by employing technologies such as Internet of Things and Machine Learning.
	Methodology/ Algorithm	Image classification algorithm
	Advantages	First version achieving an accuracy of 75% in classifying the waste as wet or dry whereas the second version achieves an accuracy of 90% when segregating the waste into six distinct categories.
	Disadvantages	Disposal measures to cater to the needs of each area. Moreover, the time taken by each bin to reach its threshold capacity it leads to down the accuracy

3	**Paper title**	From smart city to smart citizen: rewarding waste recycle by designing a data-centric iot based garbage collection service(2020.). Pelonero, Leonardo, Andrea Fornaia, and Emiliano Tramontana.
	Problem definition	The smart bin model by proposing an incentive system that focuses on door-to-door waste collection. Such a solution assists door-to-door garbage collection by using practical and affordable QR-codes and IoT sensors to accumulate
	Methodology/ Algorithm	DTD method, QR code methodology.
	Advantages	Allows gathering a great deal of data, as well as timely giving users a monitoring ability and incentives according to their activities.
	Disadvantages	QR code detection some time makes mistakes.

4	**Paper title**	A LoRaWAN IoT-Enabled Trash Bin Level Monitoring System (2021) .Ramson, SR Jino, S. Vishnu, A. Alfred Kirubaraj, Theodoros Anagnostopoulos, and Adnan M. Abu-Mahfouz.
	Problem definition	Development and validation of a selfpowered, LoRaWAN IoT enabled Trash Bin Level Monitoring System (IoT-TBLMS).
	Methodology/ Algorithm	LoRaWAN ,TBLMU, Dijkstra algorithm
	Advantages	System was validated by evaluating the accuracy of the sensor employed, maximum transmission distance between a TBLMU and a gateway, life expectancy of a TBLMU, battery charging time and cost. Based on the results obtained, the proposed IoT system is suitable for Municipality or Municipal Solid Waste Management Companies to manage municipal solid waste efficiently
	Disadvantages	System requirement of accuracy in LoRaWAN is less.

5	**Paper title**	IOT Based Smart Waste Management System(2021). Gayathri, N., A. R. Divagaran, C. D. Akhilesh, V. M. Aswiin, and N. Charan.
	Problem definition	Measuring the food waste and providing rewards for the users, where it shows the real-time food wastage of every individual on a screen and in a website for future reference
	Methodology/ Algorithm	Optimization Technique.
	Advantages	People to take necessary amounts of food so that the wastage of food can be reduced
	Disadvantages	No prior information