Geo Waste Classification Using Deep Neural Networks

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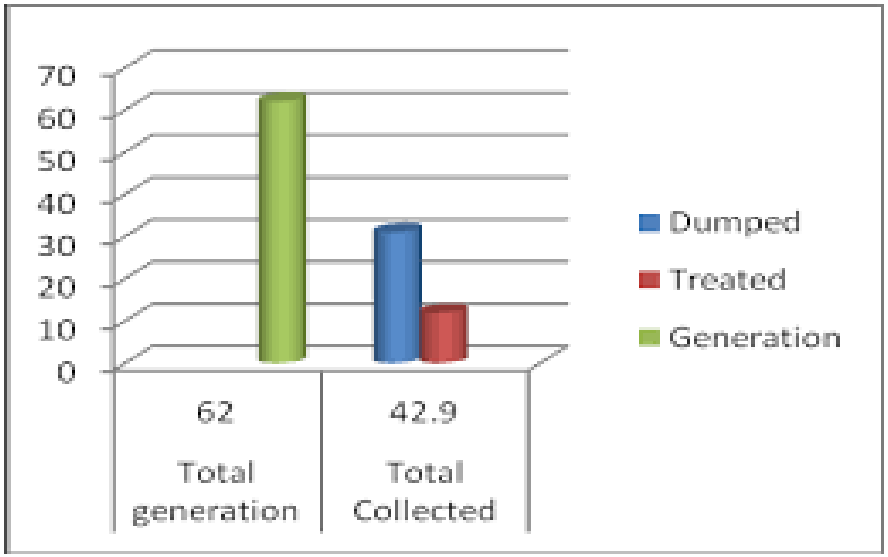
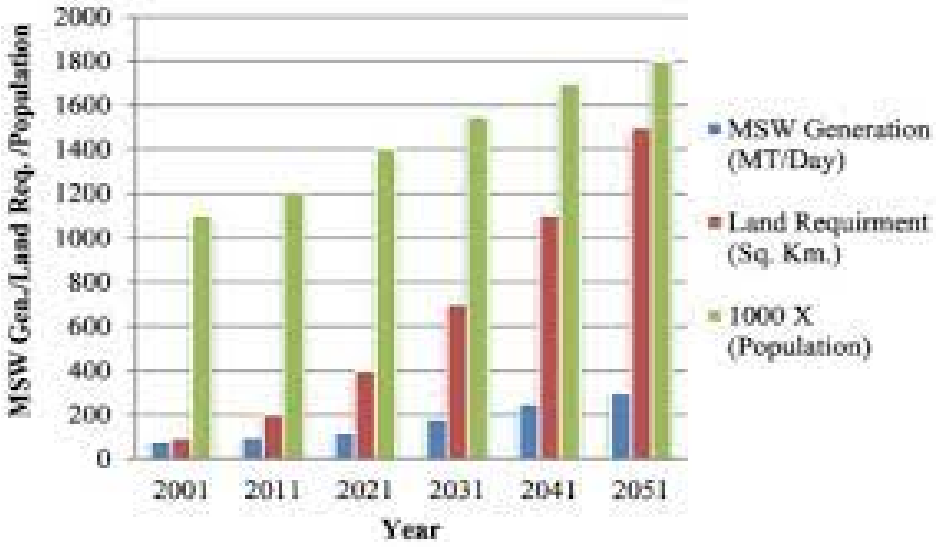
Contents

Introduction

- Rising Waste Generation has been a major concern in present situation.Globally solid waste has raised upto, 2.01 billion tonnes annually in 2016.
- such vast amount of waste can have a long-lasting impact on planet.These can be through environmental degradation, drastic climate changes etc.

solid waste growth





Problem Statement

- The proposed system classifies waste.

Objectives

- Enhance Recycling Rates
- Environmental Impact Reduction
- Public Awareness & Promote Sustainability

Literature survey

SNo	Title	Author	Algorithm used	Year
1	A Survey on Waste Detection and Classification Using Deep Learning	HARUNA ABDU AND MOHD HALIM MOHD NOOR	CNN	2022
2	Illegal Trash Thrower Detection Based on HOGSVM for a Real-Time Monitoring System	Nibir Sarker,Sudipto Chaki, Avishek Das,Md. Shafiul Alam Forhad	HOG, SVM	2021

Literature Survey

SNo	Title	Author	Algor- ithm used	Year
3	Automatic Detection and Classification System of Domestic Waste via MCCNN	Jiajia Li, Jie Chen, Bin Sheng	YOLO v3	2021
4	Waste Management Using Machine Learning and Deep Learning Algorithms	Khan Nasik Sami Zian Md Afique Amin Raini Hassan	SVM, Random Forest,Decision tree	2020

Literature Survey

SNo	Title	Author	Algorithm used	Year
5	An automatic classification method for environment: Friendly waste segregation using deep learning	S. Sudha,M. Vidhyalakshmi,K. Pavithra,K. Sangeetha,V. Swaathi	deep learning algorithm	2018

Methodology

- "Trash Net" data set is used in implementation of these model.
- Methods used are CNN and YOLO.

Tools used

- CPU
- RAM: 8GB
- Software: Python
- Operating System: Windows

Progress

- Identified and collected data set.
- CNN model is implemented and analyzed.

References

1. Shahab, S., Anjum, M. and Umar, M.S., 2022. Deep learning applications in solid waste management: A deep literature review. International Journal of Advanced Computer Science and Applications, 13(3).
2. Majchrowska, S., Mikołajczyk, A., Ferlin, M., Klawikowska, Z., Plantykow, M.A., Kwasigroch, A. and Majek, K., 2022. Deep learning-based waste detection in natural and urban environments. Waste Management, 138, pp.274-284.

Thank you