

Submission Summary

Conference Name

International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS)

Paper ID

735

Paper Title

Geo Waste Classification Using Deep Neural Networks

Abstract

The increasing global waste generation has elevated waste management to critical concern. It is observed that globally solid waste has surged, hitting 2.01 billion tons annually in 2016, with predictions of 3.40 billion tons by 2050. Such vast amounts of waste can lead to severe environmental degradation, loss of biodiversity and generation of green house gases which have a long-lasting effect on planet. Existing methods, relying on manual sorting and implementation of IOT. All of the reviewed surveys focus on object detection and a few on waste detection and classification. However, none of them comprehensively surveyed the available benchmarked dataset and the deep learning models for single and multi-object detection on the waste detection and classification. This project proposes deep learning models, specifically convolutional neural networks (CNNs) and Mask regional convolutional neural networks (MRCNNs), to address these challenges and enhance waste management. The proposed method involves training deep learning models on a comprehensive dataset of waste materials, enabling automated and accurate sorting based on visual and textual characteristics. This project's significance lies in its potential to revolutionize waste management by automating classification and recycling processes, reducing human labor, enhancing recycling efficiency, and minimizing waste sent to landfills, thereby reducing environmental pollution and conserving resources. Therefore, it provides the way for smarter and more sustainable waste management practices, contributing to a cleaner and healthier planet.

Created

27/05/2024, 17:32:18

Last Modified

27/05/2024, 17:33:08

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Submission Files

PAPER (1).pdf (1.2 Mb, 27/05/2024, 17:31:52)
