Submission Summary

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10th International Conference on Electrical Energy Systems 2024

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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
bio-diversity and generation of green house gases which have a
long-lasting effect on planet. Existing methods, relying on manual
sorting and implementation of IOT. Reviewed surveys focused
on object detection and on waste detection and classification.
But none of them surveyed the benchmarked dataset and
the deep learning models. This work proposes deep learning
models, specifically convolutional neural networks (CNN's) and
Mask regional convolutional neural networks (MRCNN's), 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 work's significance lies in its potential to revolutionize waste
management by automating classification and recycling processes,
reducing human labor, enhancing recycling efficiency, and min☐imizing 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.
Index Terms—Convoultuional neural network (CNN),Support
vector machine (SVM), MobileNetv2, YOLO Architecture, Mask
regional convoulutional neural network (MRCNN).

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