Smart Civilization for Detecting Littering On Roads

Batch - 10

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Hackathon Details

Title : Developer week hackathon (Nation's Largest challenge driven hackathon).

Event platform : Eventbrite.

Dates : 24 January – 8 February (2022).

Mode of Event : Online.

Theme : Mainly this Hackathon is focus on latest coding technology with new problem statement to achieve it.

Abstract

In this project we are going to detect litter on roads based on civilization. In this we use algorithm which proposed by fix IT. This algorithm takes images from google streets API and identify the litter on roads. To implement this project we use Object detection , Data sets , Training the dataset , Litter detection , Tensor flow , dataset of civilization in last previous and upcoming years.

THE ALGORITHM

- Will utilize the Google Streets API

- Will display the street image with outlines of the litter that is visible along with percentages based on the accuracy.

Introduction

In this project we use litter detection algorithm that will identify the litter on roads visually when we give a particular image of roads. The main purpose to implement to keep roads clean which can help people health and helps in good climatic conditions. We use different tools in this algorithm they are tensor flow , Amazon webserver or IBM (Any cloud storage) , Jupiter notebook , Windows with putty if we use Amazon webserver.

   The population must be updated according to increase in level of cost of living.

Problem statement

The main problem in cities and villages are litter on roads but the litter present in village and cities are different due to level of population. If the level of population is more there is more chance in littering than low population. This litter creates more problems to humans in different ways by health issues, collisions caused by items on roads, Flood risks, detrimental of environment etc .Based on the civilization we are going to find litter on roads as more it requires that can identify and inform to higher officals to overcome it.

Aim and Objectives

The main aim of taking this is to overcome the litter on roads and keep the roads clean to overcome many problems in cities.

Objective:

- Prevent littering and dumping
- Prevent the littering and dumping of waste items, especially in areas where there is an absence of a suitable collection infrastructure.
- Develop practices for sound collection and disposal of municipal waste
- Identify and demonstrate realistic best practices that can be adopted by local, regional, and national authorities.
- Promote a global evolution of efficient resource management
- Promote sufficient value of secondary plastics as part of a resource efficient circular economy.

SRS – (Software and Hardware requirements)

Software requirements:

- Windows 7/8/10/11 or XP.
- Jupiter notebook.
- Putty.
- AWS or Cloud Storage.

Hardware requirements:

- RAM 512MB minimum with 500 GB storage support.
- Processor Intel i3 or i5 or i7

Existing system

- In Existing system, to identify the litter on roads for municipality in an area. To identify litter it takes more time in a particular area because some items are very small that can't able to identify easily by human eyes that will not clean city.
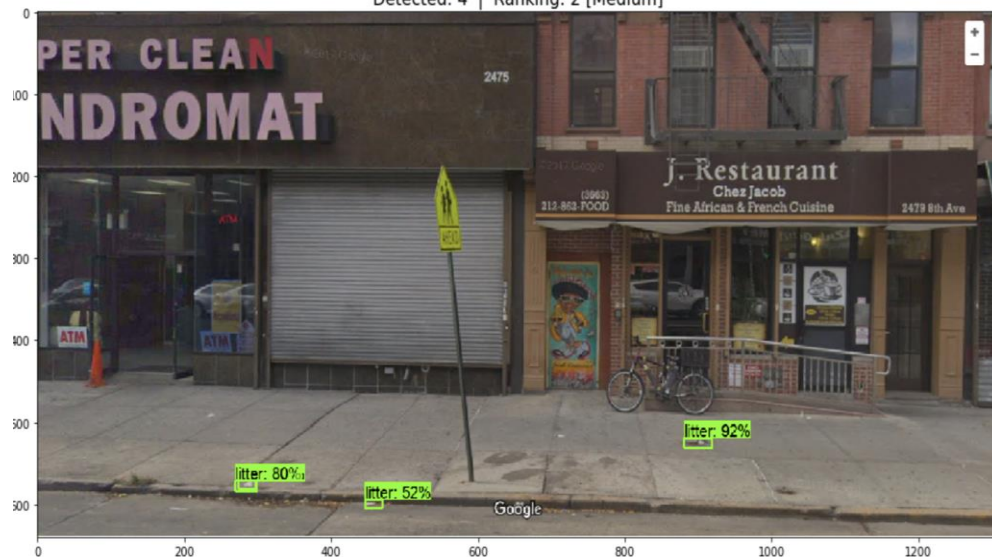
Proposed system

- In proposed system, we use level of population in an area it is easy to find the litter on roads. We use dataset based on the data provided we detect the litter by using litter detection algorithm. This can save time of workers and helps in clean the area easily by seeing the monitor were the litter is present.

Detected: 4 | Ranking: 2 [Medium]

Detected: 6 | Ranking: 3 [High]

Detected: 0 | Ranking: 1 [Low]

Conclusion

- It is believed that a culture of anti-littering goes hand in hand with the culture of road safety. When someone litters, they litter their own roads, their own community, their own paths. The same can be said of irresponsible and unsafe driving behaviors where people feel disconnected in their cars and disconnected from the community causing a threat to their fellow road user.

- By increasing the love for our neighborhood, community and people we might not only reduce litter but also improve our attitude towards safety on the road!

References:

- https://www.arrivealive.mobi/roadside-litter-environmental-protection-and-road-safety
- https://www.conserve-energy-future.com/causes-problems-solutions-littering.php
- https://ww.globalcitizen.org/en/content/india-roads-recycled-plastic/
- https://en.wikipedia.org/wiki/Litter