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OBJECT RECYCLABLEOR NON-RECYCLABLEUSING TENSORFLOW

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Abstract— Our project title is "OBJECT RECYCLABLE OR NOT- RECYCLABLE USING TENSORFLOW". In our project we aregoing to develop this website to scan andidentify the objects which are recyclableor not using Tensorflow. This projects make understand the people who didn't know about the reusable of any products in the environment that can recycled and change to any other usage in the stages.

Introduction

We have developed a obejcts scanner thatused to scan the objects in the picture and identify's the objects in the picture and shows whether the object can be used forrecycling purpose or not in the environment. Many people doesn't know which products can be used for recycle.
Our projects helps to identify the objects with description details.

Objectives

The main objective of our project is to provide whether the object can be Reused or not with the help of a camera. It helps to Identify the product which can be Reused or which have to be destroyed permanently.

Processing

This scanner used Machine learning and Image processing algorithms allows scanning detection of the products.

Machine LearningAlgorithms

Linear Regression - Linear Regression is a machine learning algorithm based on supervised learning. It performs a regression task. Regression models a target prediction value based on independent variables that are used to find our productsin the images .

Decision Tree - Decision Tree algorithm belongs to the family of supervised learning algorithms. The goal of using a Decision Tree is to create a training modelthat can use to predict the class or value of the target variable by learning simple decision.

KNN - The k-nearest neighbors (KNN) algorithm is a simple, supervised machine learning algorithm that can be used to solve both classification and regression problems.

Logistic Regression - Logistic regression is basically a supervised classification algorithm. In a classification problem, the target variable(or output), y, can take only discrete values for given set of features(or inputs).It defines the objects X axis and Yaxis in the Image for detection.

Image ProcessingAlgorithms

Contrast Enhancement algorithm - Contrast enhancement is a process that makes the image features stand out moreclearly by making optimal use of the colors available on the display or output device. Contrast manipulations involve changing the range of values in an imagein order to increase contrast.

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Canny edge detector algorithm - Canny edge detection is a multi-step algorithm that can detect edges with noise supressed at the same time. Smooth the image with aGaussian filter to reduce noise and unwanted details and textures.

Scale-invariant feature transform algorithm - The scale-invariant feature transform (SIFT) is a feature detection algorithm in computer vision to detect anddescribe local features in images.

Speeded Up Robust Features algorithm - speeded up robust features (SURF) is a patented local feature detector and descriptor. It can be used for tasks such as object recognition, image registration, classification, or 3D reconstruction. It is partly inspired by the scale-invariantfeature transform (SIFT) descriptor.

all this algorithms are involved in identifying the objects in the images by using there pexels in the picture according to the positions of X axis and Y axis with their alignments in the sectors.

Steps for AnalysingObjects

In Mobile View :

Step 1 : Choose your Browser in your Mobile phone.

Examples : (Google Chrome, Mozilla Firefox, Brave, UC Browser)

Step 2 : Change your Mobile Browser mode to Desktop mode for better view andPerformance.

Step 3 : In the search box copy & paste ourURL link to get display our Web App.

Step 4 : You will see our Welcome screenthat in the page as (Can I Recycle that).

Step 5 : Click Start and Enter into the image uploading page and Click ChooseImage.

Step 6 : After Choosing the image its Shows dialogue box button in the bottomend as (Is this Recyclable ?).

Step 7 : It verifys the object is something it shows object name and ask questions what kind of c 172 s (yes or no).

Step 8 : If you are choosing yes then it shows a description with image and informs you that the object in the image be recycled or not for day to day life purposes.

Step 9 : If your pressing no then it shows some kind of message as its seems there isno image to detected in the picture.

Step 10 : After the object is verified in thepicture then if you need to see the information again with different pictures Choose the bottom button as (Start again).

In Desktop View :

Step 1 : Choose your Browser in your Personal Computer.

Examples : (Google Chrome, Mozilla Firefox, Brave, UC Browser)

Step 2 : Desktop mode has better view and Performance.

Step 3 : In the search box copy & paste our URL link to get display our Website.

Step 4 : You will see our Welcome screenthat in the page as (Can I Recycle that).

Step 5 : Click Start and Enter into the image uploading page and Click ChooseImage.

Step 6 : After Choosing the image its Shows dialogue box button in the bottomend as (Is this Recyclable ?).

Step 7 : It verifys the object is something it shows object name and ask questions what kind of object as (yes or no).

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Step 9 : If your pressing no then it shows some kind of message as its seems there is no image to detected in the picture.

Step 10 : After the object is verified in the picture then if you need to see the information again with different pictures Choose the bottom button as (Start again).

Technologies Involved

Work Plans

The OBJECT RECYCLABLE ORNOT-RECYCLABLE USING TENSORFLOW Website is created using Tensorflow library. A Tensorflow library performs a Image processing technique to identify the objects. It verifys with server side objects which have been already available in the Internet it gets interlinked with object in the image and classifies product in the image.

HTML :

The Hypertext Markup Language, is a standard for describing the structure and presentation of information via the Internet. Web developers use HTML keywords or tags to instruct the Web browser application how to format and display the content of Web pages.

CSS :

It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based markup language.

JavaScript :

JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive.

Advantages of proposedplan

It helps to identify the Objects which are recyclable or not.

It displays the correct result.

Without touching the object we can check whether it is recyclable or not.

Conclusion

Thus by using the scanner we can able to identify the Objects and it will provide the necessary details to be recycled or not. we hope our technology can be deployed to the real world one day to benefit mankind.

Future Scope

If the object is recyclable then it will display how it can be recycled.

If not it will display how the product the destroyed completely.

In the Future many more products which cannot be recycled can refomated and used by our projects ideas and informations.

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