FOOD WASTE MANAGEMENT

MINI PROJECT – I

SYNOPSIS

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Acknowledgement

It gives us a great sense of pleasure to present the synopsis of the B.Tech mini project undertaken during B-Tech III Year. This project is going to be an acknowledgement to the inspiration, drive and technical assistance will be contributed to it by many individuals. We owe special debt of gratitude to Mrs. Ruchi Gupta, Senior Technical Trainer , for providing us with an encouraging platform to develop this project, which thus helped us in shaping our abilities towards a constructive goal and for his constant support and guidance to our work.

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ABSTRACT

Food wastage is increasingly becoming a topic of concern due primarily to the negative impact it has on the economic and agricultural industry. The Research show that over 190 million Indians remain undernourished while India's food waste worth over 92,000 crores. According to the Food Waste Index Report 2021, published by United Nation Environment Program. (UNEP) the previous year, an estimated 931 million tons of food, or 17% of the total food available to consumers in 2019, ended up in households, retailers, restaurants, and other food services, waste bins. So, the main objective of this is to analyze and detect the amount of food present in plate after finishing the meal so that we can find out how much food waste by each days. This project also provides a demo of better implementation with future enhancement in food in imposing the penalty over the Food Waste generated by person. This project was developed for the Android platform and other electronic devices using various application.

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INTRODUCTION

Food waste management in India is becoming a critical problem due to the continuous increase of the Indian population. Indians waste the maximum amount of food as much as the whole of the UK consumes – a data point which will not be most indicative of our love of surfeit, because it is of our population. Most of the food is wasted in weddings, canteens, hotels, social and family functions, and households. Still, food wastage is a horrendous issue, so is food waste management in India. Our streets, garbage bins, and landfills are spoiling our environment and have sufficient evidence to prove it. At a time when 811 million people go to bed hungry every night, a third of all food produced to eat is wasted or lost.

In this mini project, I and our team designed a machine learning algorithm for detecting the amount of food left by a person and analysing the data regarding the wastage of food. For now, the result is shown in an android application as a user graphical interface.

SOFTWARE AND HARDWARE REQUIREMENTS

- IntelliJ IDEA Ultimate
- Android Studio
- Anoconda3/ Jupyter
- MATLAB Framework
- Android/ Laptop Device
- 8 GB RAM
- Window 11

PROJECT DESCRIPTION

The purpose of this project is to develop an application/ algorithm for detecting the amount of food waste by using machine-learning technology. It allows for flexible data format and deliver of its data so that each analysis application can receive only the information it needs and in the format required.

WORKING

A Consumer has to register his profile, by authentication and authorization.

A Consumer can get food in plate. A consumer consume a food.

After consumption of food the consumer left a pate with left food.

Now image of plate is taking with left food. After image capturing, our machine matches that image with prestored image of food waste.

After match found it tell how much food is wasted by user in plate.

IMPLEMENTATION

This projected is implemented with various technology like Image processing, machine learning technique and application design.

For the image processing the MATLAB framework is used in which first the image is processed by resizing it in fix ratio and extracting the features by various image enhancement technique. The segmented part of an image is then matched with prestored image.

As the part of Machine learning, the image result get classified either the person wasted the food or not. The Framework and language used for this phase is Anaconda3 Jupyter and Python language. With various predefined module like TensorFlow and Keras the image is processed and gives the output as result.

Finally, as far of now the result is displayed individually in users mobile. The designed application is get installed in user and the user click the picture of plate before putting the plate to dustbin and get the output as he/ she make how much people get feeded with this wasted food or simply how much wasted.

REFERENCES;

Books:

- Digital Image Processing by Rafael C. **Gonzalez**
- Life 3.0_ Being Human in the Age of Artificial Intelligence
- DIP by Sridhar, S.

Websites

- www.tensorflow.com
- https://app.supervised.ly
- www.deeplearningAI.com
- www.youtube.com

Faculty Guidelines:

Mr. Ruchi Gupta (Senior Technical Trainer in GLA University)

GitHub Repository link:

https://github.com/Yash-Kumar-Gupta-0845/Mini-Project-1