

PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT-1

DATE:	29 OCT 2022
TEAM ID:	PNT2022TMID39847
PROJECT:	AI-powered Nutrition Analyzer for Fitness Enthusiasts
MAXIMUM MARKS:	4 Marks

IDENTIFYING THE PROBLEM STATEMENT:

It is necessary to identify the problem for any problem. In our project the problem we are trying to overcome obesity by using Nutrition Analyzer for fitness enthusiasts

UNDERSTANDING THE PROJECT OBJECTIVES:

Identifying the method to solve the problem. Selecting the best the algorithms, software and technology to develop an application that enables Nutrition Analyzer for fitness enthusiasts

FINDING BASE PAPERS FOR REFERNCE:

Look for base papers that were previously published that aimed at solving similar problems.

Try to take adaptations from it and makes modifications for the drawbacks of the previous papers.

Fruit Recognition using Image Processing

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Abstract: The ability to identify the fruits based on the quality in food industry is very important nowadays where every person has become health conscious. There are different types of fruits available in the market. However, to identify best quality fruits is cumbersome task. Therefore, we come up with the system where fruit is detected under natural lighting conditions. The method used is texture detection method, color detection method and shape detection. For this methodology, we use image segmentation to detect particular fruit. Fruit Detection project is implemented in MATLAB image processing toolbox. The project is implemented for both Real time and Non-Real time. The proposed method has four stages: First is Pre-Processing and second is Feature Extraction and third is Segmentation and fourth Recognition. In case of Non-Real time, the first stage is used to browse the image, second stage is extraction of the features from images using Grey Level Co-occurrence Matrix (GLCM), RGB and Color Histogram. System will convert the image from RGB to grayscale image for further processing. The color histogram represents the distribution of colors in an image. Since image is captured under different illumination condition. In the third stage, the three extracted image is obtained in the form of red, green and blue. In the fourth stage, the extracted features are used as input to Support Vector Machine (SVM) classifier. Then name of the fruit is output is obtained.

The proposed method is based on the use of Support Vector Machine (SVM) with the desirable goal of accurate and fast classification of fruits. Support Vector Machines (SVMs) is a classification method based on machine learning theory. SVMs have significant advantages because of their high accuracy, elegant mathematical tractability, and direct geometric interpretation. Besides, they do not need a large number of training samples to avoid overfitting. The task here is to automatically detect and classify the fruits image acquired from database. Assuming that the different images are present and some are overlapped on one another. The proposed work mainly gives a review that what steps are performed throughout the entire process to detect particular fruit. Since image is captured under different natural condition. The framework mainly consists of two phases. In the first phase textural features are extracted from fruit and in the second phase fruit is classified as detected fruit. The measurements obtained from the study of textural feature are given as input to the SVM classifier for training in order to classify it. Finally, system will detect objects and will display as an output. The objective of Fruit Recognition using image processing is to design a incremental model to recognize the fruits based on size, shape and colour of the

LITERATURE SURVEY:

Collecting as many related papers to our project. Trying to understand the algorithm and method they used, searching for alternate methods to implement our project.

EMPATHY MAP:

Analyze the problem properly and the categories the aim of the project into;

1. What we see?
2. What we think and feel?
3. What we hear?
4. What we say and do?
5. Pain and gain

