Nutrition Analyzer for fitness enthusiasts

Abtract

Endurance athletes rarely compete in the fasted state, as this may compromise fuel stores. Thus, the timing and composition of the pre-exercise meal is a significant consideration for optimizing metabolism and subsequent endurance performance. Carbohydrate feedings prior to endurance exercise are common and have generally been shown to enhance performance, despite increasing insulin levels and reducing fat oxidation. These metabolic effects may be attenuated by consuming low glycemic index carbohydrates and/or modified starches before exercise. High fat meals seem to have beneficial metabolic effects (e.g., increasing fat oxidation and possibly sparing muscle glycogen). However, these effects do not necessarily translate into enhanced performance. Relatively little research has examined the effects of a pre-exercise high protein meal on subsequent performance, but there is some evidence to suggest enhanced pre-exercise glycogen synthesis and benefits to metabolism during exercise. Finally, various supplements (i.e., caffeine and beetroot juice) also warrant possible inclusion into pre-race nutrition for endurance athletes. Ultimately, further research is needed to optimize pre-exercise nutritional strategies for endurance performance.

Introduction

Food is essential for human life and has been the concern of many healthcare conventions. Nowadays new dietary assessment and nutrition analysis tools enable more opportunities to help people understand their daily eating habits, exploring nutrition patterns and maintain a healthy diet. Nutritional analysis is the process of determining the nutritional content of food. It is a vital part of analytical chemistry that provides information about the chemical composition, processing, quality control and contamination of food.

The main aim of the project is to building a model which is used for classifying the fruit depends on the different characteristics like colour, shape, texture etc. Here the user can capture the images of different fruits and then the image will be sent the trained model. The model analyses the image and detect the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).

Project flow

The user interacts with the UI (User Interface) and give the image as input.Then the input image is then pass to our flask application.And finally with the help of the model which we build we will classify the result and showcase it on the UI.

To accomplish this, we have to complete all the activities and tasks listed below

Data Collection.

Collect the dataset or Create the dataset

Data Preprocessing.

Import the ImageDataGenerator library

Configure ImageDataGenerator class

ApplyImageDataGenerator functionality to Trainset and Testset

Model Building

Import the model building Libraries

Initializing the model

Adding Input Layer

Adding Hidden Layer

Adding Output Layer

Configure the Learning Process

Training and testing the model

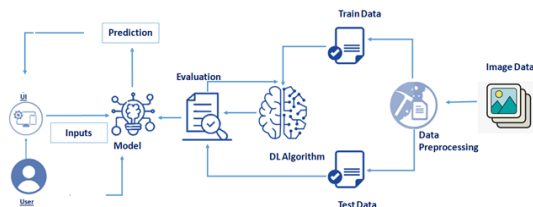Save the Model

Application Building

Create an HTML file

Build Python Code

Technical Architecture.

Hardware Requirement

8GB RAM

Laptop/Desktop

Windows/Mac/Linux OS

Software Requirement

Python

IBM cloud

IBMwatson

Deep learning

Html

Conclusion

Endurance athletes rarely compete in the fasted state, as this may compromise fuel stores. Thus, the timing and composition of the pre-exercise meal is a significant consideration for optimizing metabolism and subsequent endurance performance. Carbohydrate feedings prior to endurance exercise are common and have generally been shown to enhance performance, despite increasing insulin levels and reducing fat oxidation. These metabolic effects may be attenuated by consuming low glycemic index carbohydrates and/or modified starches before exercise. High fat meals seem to have beneficial metabolic effects (e.g., increasing fat oxidation and possibly sparing muscle glycogen). However, these effects do not necessarily translate into enhanced performance. Relatively little research has examined the effects of a pre-exercise high protein meal on subsequent performance, but there is some evidence to suggest enhanced pre-exercise glycogen synthesis and benefits to metabolism during exercise. Finally, various supplements (i.e., caffeine and beetroot juice) also warrant possible inclusion into pre-race nutrition for endurance athletes. Ultimately, further research is needed to optimize pre-exercise nutritional strategies for endurance performance