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A GLYCEMIC LOAD CALCULATOR WITH IMAGE DETECTION

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ABSTRACT

A GLYCEMIC LOAD CALCULATOR WITH IMAGE DETECTION

The present invention relates to a glycemic load calculator with image detection. The proposed system uses image classification method to determine the food item which the user wants to classify. The present invention initially considers five different parameters namely dietary fiber, glycemic index, calories, protein, and fat. It includes continuous logging of these parameters with respect to the data provided initially by the user suggesting the necessary changes. Nutrition logging is also important in preventing diabetes, managing existing diabetes, and preventing, or at least slowing, the rate of development of diabetes complications. It is, therefore, important at all levels of diabetes prevention.

A GLYCEMIC LOAD CALCULATOR WITH IMAGE DETECTION

Technical field of invention:

The present invention relates to the field of information technology and more specifically relates to a glycemic load calculator with image detection.

Background of the present invention

The background information herein below relates to the present disclosure but is not necessarily prior art.

At times, people's habits must change in order that we will accomplish our goals and grow as a private. Thanks to the development in people's standards of living and therefore the eating practices followed by the overall population, health risk rates are increasing at an alarming speed.

People got to control their daily calorie intake and that they got to monitor what they consume during a day. Eating healthier food is that the most elementary method to avoid any life-threatening disease and maintain a healthy lifestyle. However, although food packaging accompany nutrition (and calorie) labels, it's still not very convenient for people to refer. Food has always been an essential component in human life and attracted people's attention quite before. Currently, food supplies depend on human visual inspection to gauge the qualified food ingredients and label them properly. This process is extremely laborious and tedious. Therefore, a food detection system which will automatically classify qualified food ingredients with their nutritional contents are imperative.

Obesity, cardiovascular disease, and cancer are all life-threatening disorders that can be prevented with a healthy diet and balanced nutrition. High-calorie intake can be harmful and result in numerous diseases like obesity, diabetes, among others. As a result, it appears that tracking daily meal intake is critical for ordinary individuals who want to reduce weight or maintain a healthy weight.

To accomplish this task, a mechanism is required that empowers the patients with a long-term solution and guide them to achieve constant and lasting changes to their dietary quality and calorie intake and although food packaging comes with nutrition (and calorie) labels, it is still not very convenient for people to reference.

Hence the present invention provides a system named glycemic load calculator with image detection.

Objective of the invention:

The primary object of the present invention is to provide a system called glycemic load calculator with image detection.

Summary of the invention

Accordingly present invention provides a glycemic load calculator with image detection. The proposed system uses image classification method i.e. yolo method to determine the food item which the user wants to classify. The present invention initially considers five different parameters namely dietary fiber, glycemic index, calories, protein, and fat. It includes continuous logging of these parameters with respect to the data provided initially by the user suggesting the necessary changes. Nutrition logging is also important in preventing diabetes, managing existing diabetes, and preventing, or at least slowing, the rate of development of diabetes complications.

Detailed description of invention

The present invention relates to a glycemic load calculator with image detection. The proposed system uses image classification method i.e. yolo method to determine the food item which the user wants to classify.

The present invention initially considers five different parameters namely dietary fiber, glycemic index, calories, protein, and fat. It includes continuous logging of these parameters with respect to the data provided initially by the user suggesting the necessary changes.

Basically YOLO stands for You Only Look Once. It is a real-time object recognition system that can recognize multiple objects in a single frame. YOLO recognizes objects more precisely and faster than other recognition systems. YOLO sees the entire image during training and test time so it implicitly encodes contextual information about classes as well as their appearance.

In the preferred embodiment, YOLO use input image for only once. YOLO divides the given image in a grid structure. Generally, set grid of 13 * 13 cells. For each of these small grid cells, predict 5 bounding boxes. A bounding box is just a rectangle that has an object inside it. YOLO gives output as a number called as confidence score. This is output which get from last layer of neural network. This output tells probability of an object available inside bounding box. From this score one cannot tell which object is there in that box.

For every box, there is a class predicted for every cell. User do image classification; and get a confidence score of all the available classes for that box. From this confidence score and bounding box, user finalize the score as final score. This final score tells us probability of bounding box containing an available object of a class.

Since the image have divided into 13 × 13, user got total 169 grid cells. All these grid cells is predicted for number of classes have (5 classes). So, get 169×5= 845 different bounding boxes. To discard repeated predictions of same object, user must discard some bounding boxes. Here user choose to discard boxes whose final score is less than 40% (one can change this threshold if user still get some repeated results). After removing class with final score less than threshold user can get final prediction.

Thus 845 bounding boxes are achieved. Out of that consider only three bounding boxes because user got highest predictions for that box. Although, got 845 different predictions, but user got all predictions in one go. Hence the neural network made all predictions at same time. That is why YOLO makes faster predictions.

The many features and advantages of the invention are apparent from the detailed specification, and thus, it is intended by the appended claims to cover all such features and advantages of the invention which fall within the true spirit and scope of the invention. Further, since numerous modifications and variations will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation illustrated and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS

1. A glycemic load calculator with image detection, characterize in that;

   utilizes image classification method i.e. yolo method to determine the food item which the user wants to classify;

   considers five different parameters namely dietary fiber, glycemic index, calories, protein, and fat;

   includes continuous logging of these parameters with respect to the data provided initially by the user suggesting the necessary changes.

2. The glycemic load calculator with image detection as claimed in claim 1 wherein the said system utilizes a real-time object recognition method that can recognize multiple objects in a single frame more precisely and faster than other recognition systems.

3. The glycemic load calculator with image detection as claimed in claim 1 wherein;

   YOLO use input image for only once and divides the given image in a grid structure of 13 * 13 cells;

   for each of these small grid cells predict five bounding boxes;

   YOLO gives output as a number called as confidence score which obtained from last layer of neural network;

   user do image classification and get a confidence score of all the available classes for that box;

   from this confidence score and bounding box user finalize the score as final score;

this final score tells probability of bounding box containing an available object of a class.