

Literature survey

Food Calorie and Nutrition Analysis System and based on Mask R-CNN

Author:

Meng-Lin Chiang; Chia-An Wu; Jian-Kai Feng; Chiung-Yao Fang ;

Assistant Professors, Department of CSE, NTN University, Taipei, Taiwan

Abstract:

Over the past few decades, obesity has become a serious problem. Obesity is associated with many of the leading causes of death, such as chronic diseases including diabetes, heart disease, stroke, and cancer. The most effective way to prevent obesity is through food intake control, which involves understanding food ingestion, including the nutrients and calories of each meal. To assist with this issue, this study develops a food calorie and nutrition system that can analyze the composition of a food based on a provided image. Further, we introduce a newly collected dataset, Ville Cafe, for food recognition. This dataset contains 16 categories with 35,842 images, including salad, fruit, toast, egg, sausage, chicken cutlet, bacon, French toast, omelet, hash browns, pancake, ham, patty, sandwich, French fries, and hamburger. The system is based on a Mask Region-based Convolutional Neural Network (R-CNN) with a union postprocessing, which modifies the extracted bounding boxes and masks, without the non-maximum suppression (NMS), to provide a better result in both analytics and visualization. The recognition accuracy for the combination of Ville Cafe and the Food-256 Datasets was 99.86%, and the intersection over union (IoU) was 97.17%. The food weight estimation experiment included eight classes: salad, fruit, toast, sausage, bacon, ham, patty, and French fries.

A Framework to Estimate the Nutritional Value of Food in Real Time Using Deep Learning Techniques

Author: [Raza Yunus](#); [Omar Arif](#); [Hammad Afzal](#); [Muhammad Faisal Amjad](#); [Haider Abbas](#); School of Electrical Engineering and Computer Science, National University of Sciences and Technology, Islamabad, Pakistan

Abstract:

There has been a rapid increase in dietary ailments during the last few decades, caused by unhealthy food routine. Mobile-based dietary assessment systems that can record real-time images of the meal and analyze it for nutritional content can be very handy and improve the dietary habits and, therefore, result in a healthy life. This paper proposes a novel system to automatically estimate food attributes such as ingredients and nutritional value by classifying the input image of food. Our method employs different deep learning models for accurate food identification. In addition to image analysis, attributes and ingredients are estimated by extracting semantically related words from a huge corpus of text, collected over the Internet. We performed experiments with a dataset comprising 100 classes, averaging 1000 images for each class to acquire top 1 classification rate of up to 85%. An extension of a benchmark dataset Food-101 is also created to include sub-continental foods. Results show that our proposed system is equally efficient on the basic Food-101 dataset and its extension for sub-continental foods. The proposed system is implemented as a mobile app that has its application in the healthcare sector.

NutriTrack: Android-based food recognition app for nutrition awareness

Author: [Arnel B. Oca](#); [Jane M. Fernandez](#); [Thelma D. Palaoag](#), University of the Cordilleras, Baguio City, Philippines.

Abstract:

One of the emergent concerns of human life is about health and wellness. Undeniably, health and nutrition are one of the valuable aspects of life. Thus, technological innovations to help enhance and even promote health awareness is essential. With the advent of mobile computing, it is much easier to be aware of health information because of its mobility and availability. Much mobile application is being developed to serve as a tool for health monitoring and nutritional guide. Mobile applications have the ability to support health needs like detecting heart rate, classifying food, and many more. Taking advantage of technology, utilization of it hereby addresses certain issue and problems of human life, especially in health. In this study, the researcher's attempts to design and develop an Android-based food recognition application that could be used as a health awareness tool for non-health conscious individual. The application lets the user take the photo of the food and show its nutritional contents. Implementing Mifflin-St Jeor method in determining daily calorie consumption, users shall be aware of their required calorie intake. Moreover, the researchers' have studied its effect on people's health awareness on food nutrition by the randomly selected respondents. Finally, this paper presents an analysis of the impact of the food recognition app to change people's concept of food nutrition.

Problem Statement

1. A Heart patient can have to follow a proper diet when intake a food so he wants to find the calories ,nutrients and fats,proteins level in the food.
2. Hari wants to maintain his diet to loss his weight , but he wants to how to observe the intake food nutrients.And he don't know which foods are needs to take and to avoid such foods.

3.Harshaa wants to keep her balanced diet because she is a model and actress, so she needs informations of calories which presents in the food.

4.Aravind have to follow maintain proper diet, to keep his body weight in constant, to prevent obese.

5.In children have to take proper nutrients to boost immunity and that improves growth level of their body ,by the analysis of nutrients which present in the intake food.

6.Raj is defected by poor eye sightness so he wants to improve his eye sightness and doctor suggested to take food which contains Vitamin A which helps slightly to improve the eye sightness.

7.The obesity causes to increase the cholestral level in blood which cause heart disease like Heart attack,stroke,narrow heart arteries, by this way to prevent the fatty foods.

8.To know the necessary nutrients level to live healthy life