ABSTRACT

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 maintaining 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 build a model which is used for classifying the fruit depending 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 to the trained model. The model analyses the image and detects the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).

LITERATURE SURVEY

1 FoodAI: Image Recognition via Deep Learning for Smart Food Logging

Goyen sahoo,wang hao,shu ke,hung le,2019

An important aspect of health monitoring is effective logging of food consumption. This can help management of diet-related diseases like obesity, diabetes, and even cardiovascular diseases. Moreover, food logging can help fitness enthusiasts, and people who wanting to achieve a target weight. However, food-logging is cumbersome, and requires not only taking additional effort to note down the food item consumed regularly, but also sufficient knowledge of the food item consumed (which is difficult due to the availability of a wide variety of cuisines). With increasing reliance on smart devices, we exploit the convenience offered through the use of smart phones and propose a smart-food logging system: FoodAI, which offers state-of-the-art deep-learning based image recognition capabilities. FoodAI has been developed in Singapore and is particularly focused on food items commonly consumed in Singapore. FoodAI models were trained on a corpus of 400,000 food images from 756 different classes.

In this paper we present extensive analysis and insights into the development of this system. FoodAI has been deployed as an API service and is one of the components powering Healthy 365, a mobile app developed by Singapore's Heath Promotion Board. We have over 100 registered organizations (universities, companies, start-ups) subscribing to this service and actively receive several API requests a day.

FoodAI has made food logging convenient, aiding smart consumption and a healthy lifestyle.

2 Smartphone Apps and the Mobile Privatization of Health and Fitness

Brad Millington,2014

This paper presents an in-depth study of prominent health and fitness-themed smartphone apps. Results of the study first highlight the emphasis placed on self-improvement with apps such as MyFitnessPal, as activities including exercise tracking are deemed means for achieving health and fitness goals. At the same time, and in the style of “mobile privatization,” apps connect individual users to the “outside world” as well, mainly by facilitating network ties between (and further surveillance of) like-minded consumers. This activity is said to be possible “on the go,” as apps capitalize on the portable nature of smartphone hardware. Acknowledging that these ways of “conducting conduct” might engender productive and rewarding outcomes, the paper concludes with critical reflections on the app model of service provision and its alliance with a neoliberal approach to health and fitness promotion.

3 Push Notifications in Diet Apps: Influencing Engagement Times and Tasks

Jill Freyne,Jie Yin,Emilly Brindall,Gilly A.Hendrie,2017

Background: Smartphones have reached levels of popularity and penetration where they are now suitable for use in population health interventions. A key feature of smartphones is push notification or in app messaging service, which can be used to alert users to messages or instructions pertaining to an installed app. Little evidence exists as to the persuasive power of these messages.

Method: We conducted a 24-week live user evaluation of push notifications used in a behavior-based mobile app for a meal replacement program to understand the role of push notifications in persuading users to engage with self-monitoring tasks.

Results: User perception of the prompts were verified through questionnaires, which in conjunction with the interaction logs show that users were tolerant of multiple daily prompts. The decline in compliance to the tasks set, however, shows that while the participants did not object to receiving prompts, they were less likely to respond to them as the study progressed.

Conclusions: Push notifications and user tasks are appropriate mechanisms to engage users with mobile technology in the short term.

4 A Survey on AI Nutrition Recommender Systems

Kosmas Dimitropoulos,Petros Daras,2019

The goal of this work is to provide an overview of existing approaches regarding AI nutrition recommender systems. A breakdown of such systems into task-specific components is presented, as well as methodologies concerned with each individual component. The components of an idealized AI nutrition recommender system are presented and compared to state-of-the-art approaches in the corresponding area of research. Finally, identified issues in some of these areas are also discussed.

5 Chatbot for fitness management using IBM Watson

Sai Rugved Lola,Rahul Dhadvai,Wei Wang,2021

Chatbots have revolutionized the way humans interact with computer systems and they have substituted the use of service agents, call-center representatives etc. Fitness industry has always been a growing industry although it has not adapted to the latest technologies like AI, ML and cloud computing. In this paper, we propose an idea to develop a chatbot for fitness management using IBM Watson and integrate it with a web application. We proposed using Natural Language Processing (NLP) and Natural Language Understanding (NLU) along with frameworks of IBM Cloud Watson provided for the Chatbot Assistant. This software uses a serverless architecture to combine the services of a professional by offering diet plans, home exercises, interactive counseling sessions, fitness recommendations.