Literature Survey

AI-powered Nutrition Analyzer for Fitness Enthusiasts

1.THE INFLUENCE OF AI-powered Nutrition Analyzer for Fitness Enthusiasts

Chair and Department of Humanities and Social Medicine, Medical University of Lublin, 20-093 Lublin, Poland 2 BioMolecular Resources Research Infrastructure Poland (BBMRI.pl), Poland 3 Faculty of Medicine, Medical University of Lublin, 20-059 Lublin, Poland; magda.suchodolska.1998@interia.eu * Correspondence: jaroslaw.sak@umlub.pl

Artificial intelligence (AI), from time to time called machine intelligence is simulation of human intelligence in machines. It is the intellect exhibited by machines,in contrast to the natural knowledge demonstrated by humans. ts yet another online platform which uses deep learning and image recognition to analyse what the users eat and determine what is trending in terms of each popular dish that the user eats and consumption time. The machine learning facilitates provisions like recognition of past meals, make hierarchical predictions-that is detect high-level categories likebeverages and soup as well as specific dishes and ingredients.It also integrates with their Food Knowledge Graph that contains a large set of commonly eaten foods, with nutrition facts, and hierarchical structure. The platform also further breaks down the nutrition information calories, macro and micro nutrients as well as ingredients.

2.Artificial Intelligence in Nutrients Science Research:

A Review Jarosław Sak 1,2,* and Magdalena Suchodolska 3 Chang Liu, Yu Cao, Senior Member, IEEE, Yan Luo, Member, IEEE, Guanling Chen, Member, IEEE, Vinod Vokkarane, Senior Member, IEEE, Yunsheng Ma, Songqing Chen, Member, IEEE, Peng Hou

Literature has indicated that accurate dietary assessment is very important for assessing the effectiveness of weight loss interventions. However, most of the existing dietary assessment methods rely on memory. With the help of pervasive mobile devices and rich cloud services, it is now possible to develop new computer-aided food recognition system for accurate dietary assessment.

However, enabling this future Internet of Things-based dietary assessment imposes several fundamental challenges on algorithm development and system design. In this paper, we set to address these issues from the following two aspects: (1) to develop novel deep learning-based visual food recognition algorithms to achieve the best-in-class recognition accuracy; (2) to design a food recognition system employing edge computing-based service computing paradigm to overcome some inherent problems of traditional mobile cloud computing paradigm, such as unacceptable system latency and low battery life of mobile devices. We have conducted extensive experiments with realworld data. Our results have shown that the proposed system achieved three objectives: (1) outperforming existing work in terms of food recognition accuracy; (2)reducing response time that is equivalent to the minimum of the existing approaches; and (3) lowering energy consumption which is close to the minimum of the state-of-the-art.

3.Diet and Nutrition Expert System for Meal Management and Nutrition Counseling

Prof. Megha V. Gupta
Computer Engineering, New Horizon Institute of Technology and Management NHITM, Thane, India meghavgupta@outlook.com Ms. Priya Bhattacharjee
B.E. Student, Computer Engineering New Horizon Institute of Technology and Management NHITM, Thane, India
priyabhattacharjee31@gmail.com
Ms. NavyaKotian
B.E. Student, Computer Engineering New Horizon Institute of Technology and Management NHITM, Thane, India
nsk714@gmail.com
Ms. GrishmaVipat
B.E. Student, Computer Engineering New Horizon Institute of Technology and Management NHITM Thane, India
grishmavipat24@gmail.com

"Your body is your temple"

As people across the globe are becoming more health conscious, eating more healthy food and avoiding junk food, a system that can measure calories and nutrition in every day meals can be very useful for maintaining one's health. Food calorie and nutrition measurement system is very beneficial for dieticians and patients to measure and manage their daily food intake. We also know that it"s

difficult to find an affordable nutritionist or a dietician across the street; therefore, we have proposed a system .DIET AND NUTRITION EXPERT SYSTEM. The proposed system is a responsive android application which contains the knowledge and data regarding the fitness of a person and nutrition content values. This application consists of the user interface which will be publicly displayed on the application i.e. the basic information regarding the fitness and nutrition values such as how to maintain good health by adapting healthy eating habits which includes the intake of calories, proteins and carbohydrates etc. in proper proportion. A dietician consults a person based on his schedule, body type, height and weight. The system too asks all this data from the user and processes it. It asks about how many hours the user works, his height, weight, age etc. The system stores and processes this data and then calculates the nutrient value needed to fill up users' needs.

4.Pre-Exercise Nutrition: The Role of Macronutrients, Modified Starches and Supplements on Metabolism and Endurance Performance

1Human Performance and Sports Nutrition Lab, Department of Nutrition, Food, and Exercise Sciences, Florida State University, Tallahassee, FL 32306, USA; E-Mails: ude.usf.ym@b21bwc (C.W.B.); ude.usf.ym@b31bad (D.A.B.)
2Biokinetics, Exercise and Leisure Sciences, University of KwaZulu-Natal, Durban, 4000, South Africa
*Author to whom correspondence should be addressed; E-Mail: ude.usf@eebsmrom; Tel.: +1-850-644- 4793; Fax: +1-850-645-5000.

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.