LITERATURE SURVEY

AI-NUTRITIENT ANALYZER FOR FITNESS ENTHUSIASTS

INTRODUCTION:

Artifificial intelligence (AI) as a branch of computer science, the purpose of which is to imitate thought processes, learning abilities and knowledge management, fifinds more and more applications in experimental and clinical medicine. In recent decades, there has been an expansion of AI applications in biomedical sciences. The possibilities of artifificial intelligence in the fifield of medical diagnostics, risk prediction and support of therapeutic techniques are growing rapidly. The aim of the article is to analyze the current use of AI in nutrients science research. The literature review was conducted in PubMed. A total of 399 records published between 1987 and 2020 were obtained, of which, after analyzing the titles and abstracts, 261 were rejected. In the next stages, the remaining records were analyzed using the full-text versions and, fifinally, 55 papers were selected. These papers were divided into three areas: AI in biomedical nutrients research (20 studies), AI in clinical nutrients research (22 studies) and AI in nutritional epidemiology (13 studies). It was found that the artifificial neural network (ANN) methodology was dominant in the group of research on food composition study and production of nutrients.

EXISTING SOLUTION:

Kruseman et alSixty percent of fifitness instructors self-rated their nutritional knowledge as insufficient. The level of effffective knowledge of athletic trainers and strength and conditioning specialists is acceptable, but in the case of coaches, not. Forty-six US states prohibit the practice of dietetics and nutrition without a minimum education and training level. In spite of this, the trainers give advice and charge for it without adequate performance.Low levels of modern nutritional qualifification; most important sources are health magazines.

The nutritional advice of trainers should be limited to nonmedical nutritional information. A considerable part of the nutrition content of websites of gyms is at-risk and low quality, misrepresenting the roles and limitations of personal trainers. The personal trainer’s confifidence was relatively low in nutrition and high in communication and advancing.There is a considerable gap between the level of education in the fifield of nutrition of trainers and the knowledge they need. Low level of nutritional knowledge.Low level of nutritional knowledge of trainers; complex teams including dietitians should be organised. Preferred sources of information of trainers are Google and community media.

CONCLUSION:

In this paper, we aimed to develop a practical deep learning based food recognition system for dietary assessment within the edge computing service infrastructure. The key technique innovation in this paper includes: the new deep learning-based food image recognition algorithms and the proposed real-time food recognition system employing edge computing service paradigm. Our experimental results on two challenging data sets using our proposed approach have demonstrated that our system has achieved the three major objectives: (1) it outperforms the results from all existing approaches in terms of recognition accuracy; (2) it develops a real-time system whose response time is close to the minimal of existing techniques; and (3) it saves the energy by keep the energy consumption equivalent to the minimum of the existing approaches. In the future, we plan to continue improving performance of the algorithms (in terms of detection accuracy) and system (in terms of response time and energy consumption).

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