LITERATURE SURVEY ON

“AI POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS”

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INTRODUCTION		BODY OF REVIEW			RESULTS	FUTURE SCOPE
YEAR	TITLE	PROBLEM DEFINITIONS	METHODOLOGY	INPUT PARAMETER		
27 dec 2021 published online	AI based automatic detection of citrus fruit and leaves diseases using deep neural network model	To fully utilize these capabilities, early detection of diseases, pests, & nutritional deficiencies, to create an android application that can take images and diagnose them. **PROPOSED WORK:** The system is designed with deep learning and image processing in mind: a convolutional neural network is trained using transfer learning and data augmentation, among other techniques, and then used to create an android application that can take images and diagnose them.	***TOOLS USED:*** Python machine learning. ***ALGORITHMS USED:*** Designed with deep learning and image processing a convolutional neural network.	In this work, a system is proposed that, based on visible light spectrum images of its leaves, allows the detection in the field of conditions in citrus crops, providing a rapid response without the high costs and complications of other methods.	***ADVANTAGES:*** Low cost. Complications are low in designing. Accuracy rates of more than 90%. ***DISADVANTAGES:*** Artificial intelligence offers unparalleled opportunities of progress and applications in nutrition. There remain gaps to address to potentialize this emerging field.	AI revolutionizes fitness through fitness equipment that makes home workouts smarter and better. the AI technologies currently used in the agricultural and food industries and some of the important applications of AI in areas such as immunity-boosting foods, dietary assessment, gut microbiome profile analysis and toxicity prediction of food ingredients. These applications are likely to be in demanded in future.

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January 2018	A Mathematical AI-Based Diet Analysis and Transformation Model.	This study aims to helps the user to know the nutrients present and gives the perfect diet planner considering the user's medical problem, and also can make small changes in the user's diet to make it well balanced while considering the requirements and possible medical problems. **PROPOSED WORK:** The work proposed in this paper focuses on the development of interactive AI-based mathematical functionality as an effective solution to support continuous nutritional management.	***MODULES USED:*** Diet analysis module Optimization module Diet transformation module. ***ALGORITHMS USED:*** Fuzzy set and fuzzy arithmetic Search space metaheuristic Proposed transformation algorithm.	A record for each patient is created which contains his/her physical parameters, level of physical activity, and possible medical problems.	***ADVANTAGES:*** To maintain health and increase life expectancy and to decrease the frequency of cardiovascular diseases. ***DISADVANTAGES:*** It takes many calculation for obtaining the energy values. Requires huge sets to train the model.	The future work will be aimed to intend to deal with optimizing diet, based on cost as an additional objective function. It would enlarge the state space of metaheuristic search algorithm and would greatly help in finding more optimized solution.

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2021 Feb	Artificial Intelligence in Nutrients Science Research.	The aim of the article is to analyze the current use of AI in nutrients science research. **PROPOSED WORK:** The development of AI systems in dietetics may lead, to a partial replacement of medical personnel and reducing the need for personal contact with a nutritionist. In the face of contemporary epidemiological threats, this seems to be of significant importance.	***TOOLS USED:*** Machine learning. ***ALGORITHMS USED:*** Modeling datasets with non-linear dependencies. Raw data can be both literature and experimental data.	Artificial intelligence as a branch of computer science, the purpose of which is to imitate thought processes, learning abilities and knowledge management, finds more and more applications in experimental and clinical medicine.	***ADVANTAGES:*** The use of AI systems in dietary assessments enables personalized nutrition, which in some diseases is a priority. ***DISADVANTAGES:*** The problem in nutrients research is not currently obtaining more and more advanced algorithms	The further dynamic development of dietary systems using AI technology may lead to the creation of a global network that will be able to both actively support and monitor the personalized supply of nutrients.

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