**lITERATURE SURVEY ON**

**“AI POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS”**

By**:**

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| INTRODUCTION | | **BODY OF REVIEW** | | |  |  |
| **YEAR** | **TITLE** | **PROBLEM**  **DEFINITIONS** | **METHODOLOGY** | **INPUT PARAMETER** | **RESULTS** | **FUTURE**  **SCOPE** |
| **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. | ***TOOLS USED:***  Python machine learning. | 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%. | 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. |
| **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. |
| ***ALGORITHMS USED:***  Designed with deep learning and  image processing  a convolutional neural network. | ***DISADVANTAGES:***  Artificial intelligence offers unparalleled opportunities of progress and applications in nutrition. There remain gaps to address to potentialize this emerging field. |

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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. | ***MODULES USED:***  Diet analysis module  Optimization module  Diet transformation module. | 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. | 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. |
| ***ALGORITHMS USED:***  Fuzzy set and fuzzy arithmetic  Search space metaheuristic  Proposed transformation algorithm. | ***DISADVANTAGES:***  It takes many calculation for obtaining the energy values.  Requires huge sets to train the model. |
| **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. |

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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. | ***TOOLS USED:***    Machine learning. | 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. | 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. |
| **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. |
| ***ALGORITHMS USED:***  Modeling datasets with non-linear dependencies.  Raw data can be both literature and experimental data. | ***DISADVANTAGES:***  The problem in nutrients research is not currently obtaining more and more advanced algorithms |

**References:**

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