DEPARTMENT OF COMPUTER SCIENCE ENGINEERING IBM – LITERATURE SURVEY

AI-POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS

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**LIST OF PROJECTS**

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| **S.NO** | **TITLE OF THE PROJECT** | **ADVANTAGES** | **DISADVANTAGES** | **TECHNOLOGY** |
| 1 | Improved health and fitness plans | analyse the details entered by the users, body parameters, and goals. Once the analysis is complete | It becomes difficult to get a 100% customised routine in physical classes or gyms. AI-based apps have eradicated this problem | Apps & Applications |
| 2 | Impeccable nutritional evaluation | These new-age apps have the feature of analysing the entire content of your meal by simply scanning a picture of your plate | Based on your body’s requirements and Health | Fitness apps |
| 3 | Fitness and Physical Activity | has produced an increase in the number of studies that try to evaluate consumer behaviours | It reduces the man power  requirements, It’s required only for AI | sport application |

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| 4 | Health care Chatbots | Chatbots can provide a tireless, constant source of interaction for patients with the healthcare system | Despite the obvious pros of using healthcare chatbots, they also have major drawbacks.  Increased costs | Chatbots |
| 5 | AI- in health Care | These technologies can identify patterns and deliver automated insights that help with common applications such as health monitoring, managing medical records, treatment design and even digital consultations | it can be difficult to access some of the data necessary to provide AI learning with the breadth and depth of information it needs | Using algorithms and data |
| 6 | Health monitor using sensor | Health monitoring from using a smart sensors. It can identify and monitored | It doesn’t accurately Monitoring | Breathing Sensors |

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| 7 | Fitness exercise | improve your physical fitness, well being and quality of life, exercise can be part of the equation. | Overdoing it and neglecting to rest can expose you to the negatives of exercise. In addition to being more likely to sustain injuries, exercising too much can leave you feeling weak, | Fitness equipment |
| 8 | Physical exercise during COVID-19 pandemic | increasing day by day make the situation alarming. Exponential growth in covid-19 cases has led to the isolation of billions of peoples | during the initial phase of lockdown, The participants had a negative situational perception and a lack of motivation for fitness exercise. | Physical equipment |
| 9 | Physical activities | an increase in the number of studies that try to evaluate consumer behaviour towards the use of sports applications | This systematic review is a critical evaluation of the evidence from quantitative studies in the field of assessment of consumer behaviour | Physical activities, sports app |
| 10 | Nutrition updates-plant based diets | The goal of our diet should be to improve our health.  That include vegan, vegetarian and Mediterranean diets. | Generally, patients on a plant-based diet are not at risk for protein deficiency Proteins are made up of amino acids, | Physical mode |

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| 11 | Recommender System with Artificial Intelligence for Fitness Assistance System | It has an ability to learn, analyze, predict, and make a suggestion as well as communicate  to human through AI. | It predicts and train data to give the suggestion for  the fitness workout but it was not more accurate and appreciable in risk cases. | The Artificial  Neural Network with Logistic Regression |
| 12 | IntelliDoctor – AI based Medical Assistant | This application tracks the user physical activities like periodic step count and their  calories intake and calculate BMI. | Though it has lot of facilities it can lag due to internet connection and it doesn’t track the  user performance activity. | Natural Language Processing (NLP). |
| 13 | Efficient Fitness action Analysis based on Spatio-Temporal feature Encoding | It recognizes fitness  actions from image sequences and propose an action evaluation method, which can be  applied in artificial intelligence (AI) fitness system. | Recognition accuracy of  complex dynamic movements are direction less. | A geometrical registration metric ianalysis |

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| 14 | Endurance based Personalized Fitness Planner | It provides a device to predict future endurance of a test subject for particular exercise regime. | It doesn’t capture the subtle effect of various other  personal and environmental factors. It focuses  on only few parameters. | statistical technique to model endurance |
| 15 | Personalized Nutrition Solution based on Nutrigenomics | This application provides nutrition recommendation by findings of  nutrigenomics at the population sub-groups and  even individual level. | It has an able to  Provide with more precise and Personalized  nutritional advice to individuals but supplement for various parameters were missing. | Intelligent algorithms, they able to  analyze people’s DNA |
| 16 | Information Technology in the Mobile  Application of Analysis and Correction of the Diet of Individual  Healthy Nutrition | It is socially important and relevant for ensuring public health. | minimal deviation from the norms of healthy nutrition  with possible interchangeability and compatibility  of food products. | Algorithm and mathematical formulation of the |

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| 17 | Computer Optimization  of Food Nutrition Formula Based on the Consideration of Adaptive Genetic Algorithm | A kind of computer optimization method for the food nutrition formula based on the consideration of the adaptive genetic algorithm | The algorithm was difficult to Understand but provide good accuracy. | Computer Optimization (COFNF algorithm) |
| 18 | Intelligent computer Service system for public fitness based on Fusion of Entropy weight Matter element extension model | The Intelligent Computer service System for public Fitness operates and applies the entropy weight matter element extension model. | It is used for Theoretical references but it is not as much accurate. | Entropy weight  -Degree Resolution Principle. |
| 19 | The iFit: An Integrated Physical Fitness Testing System to Evaluate the Degree of Physical Fitness of the Elderly | It represents an integrated physical fitness testing  system (iFit) that evaluates the physical fitness of  older adults. | A standard deviation for balance  time is needed to instruct elderly users to retest in the case of unexpected accidents. | wireless transmission (AWT)  module, a Game-based Evaluation (GBE) module, a Personal Health Management (PHM) module. |

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| 20 | Fitness Tracking and Advisory Application | This application enables a user to track his/her fitness and also get advices  and fitness related information in the form of a report at  the end and it will  enable the users to calculate their heart rate, blood pressure, and  other health related parameters. | It doesn’t matter in high risk situation and need to consult doctors. | Image processing and GPS. |