**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

**AI-POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS**

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**Guide Name: Dr .S. VIJAYAKUMAR**

**SUBMITTED BY**

**SRIKRISHNAN K (19105104)**

**SRINITHI GAYATHRI S (19105105)**

**SRIVIKNESH S (19105106)**

**SRIVISHNU I (19105107)**

**FINAL YEAR B.E. (ECE)**

**PAAVAI ENGINEERING COLLEGE,**

**Paavai Nagar, NH-7, Pachal, Namakkal-637018, Tamil Nadu**

**LITERATURE SURVEY**

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| **S.no** | **Title of the**  **project** | **Advantages** | **Disadvantages** | **Technology**  **used** |
| 1 | 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  implements the  prediction of work  out parameters with the best  accuracy. |
| 2 | 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. | The system was trained using real-world cases with  several thousands of  clinical records,  discharge summaries, prescriptions, etc  through information  extraction using  Natural Language  Processing (NLP). |
| 3 | 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 is  constructed to analyze  the fit ness actions  along with dataset for  recognition and  evaluation. |
| 4 | 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. | It is a statistical  technique to model  endurance with the  help of serial  dependence of  observations. |
| 5 | 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. | By using intelligent algorithms, they able to  analyze people’s DNA, personal and lifestyle  data, and provide with  more exact and  personalized nutritional recommendations to individuals. |
| 6 | 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. | General algorithm and mathematical  formulation of the  task of compiling and optimizing a healthy  diet. |
| **7** | 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. | The computer  Optimization (COFNF algorithm) of the  food nutrition formula  is generated by the  matrix decomposition  based on the  consideration of the heterogeneous data. |
| 8 | 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. | The entropy weight  matter element  extension model was constructed in  combination with  Degree Resolution  Principle. |
| 9 | 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. | The iFit encompasses a  member management module, an acquisition device, a wireless  transmission (AWT)  module, a Game-based Evaluation (GBE)  module, a Personal  Health Management  (PHM) module. |
| 10 | 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. | It use Image processing and GPS. |