iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 **Issue:** VI **Month of publication:** June 2021

DOI: https://doi.org/10.22214/ijraset.2021.34864

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue VI Jun 2021- Available at www.ijraset.com

Virtual Dietician for Diet Plan Recommendation

Ajay Thakar[1], Sampada Dhore[2], Rutuja Deshmukh[3], Mohit Kumawat[4], Prof. Nitin Dhawas[5]
[1, 2, 3, 4, 5]*Information Technology, SPPU*

Abstract: ***In this fast and busy schedule life, people are not giving importance to the quality of food they are eating. They tend to neglect their eating patterns and habits. The fast-food consumption rate is alarmingly high and this consequently has led to the intake of unhealthy food. This leads to various health issues such as obesity, diabetes, an increase in blood pressure etc. Hence it has become very essential for people to have a good balanced nutritional healthy diet. There are many applications which are booming to help people so that they can have control over their diet and hence can reduce weight or they can help them to keep them fit and healthy. The project is proposing healthy food habits and dieting patterns so that anyone can know the number of calories burned, the intake of macro nutrients and so on using on data mining tools. This tool is used for discovering hidden patterns and customer eating habits from different types of data sources. This system will help in tracking and improving the individual's health and the type of food which they can avoid leading towards the risk of illness. A balanced diet means that the intake of each necessary nutrient meets its adequate demand and actual caloric intake balances with calories burned. Additionally, making a diversity of choices from various types of food is also essential to reduce the risk of developing chronic diseases. This diet recommended system focuses on every individual based on their eating habits and body statistics. This research helps in the prediction of a healthy diet for any individual and nutrition is to doctor to design a diet plan as per patient's need.***

Keywords: Machine Learning, Pre-processing, Data Extraction, Classification by Decision Tree.

I. INTRODUCTION

People nowadays suffer from a variety of health issues and are unable to adequately manage their health due to their hectic schedules. As a result, after consulting with a dietician, they need a proper diet structure. That is why we are creating a website that will enable people to take care of their health and fitness without having to spend a lot of time doing so by consulting with a dietician. We are building a website that will assist them in receiving proper diet information. Based on this information, the bot will determine the proper diet structure for the customers using the BMI (Body Mass Index) and BMR. The appropriate dietician for the logged-in user will be shown by artificial intelligence dietician. This program advises the user about what to do, such as exercise tips, online fitness instruction, diet plans, and so on.

II. MOTIVATION

There are several diet plans available these days, both online and offline. However, users are not provided with a proper diet plan, so we are developing this framework to provide users with a proper diet plan. As well as reducing the health problem.

III.OBJECTIVE

A. Eat a healthy diet to avoid health problems.
B. Creating a diet schedule without disrupting everyday activities.
C. To make the operation more efficient and time-consuming

IV.PROBLEM STATEMENT

A. Diet charts are typically created using conditioning algorithms in the previous method.
B. Data mining, which promotes the use of databases and relies solely on databases, resulting in data entry errors and a lack of emphasis on health issues.

V. LITERATURE SURVEY

1) Paper Name: DIETOS: a recommender system for adaptive diet monitoring and personalized food suggestion
Author: Agapito G., Calabrese B., Guzzi P. H., Cannataro M
Abstract: Mobile applications for weight and diet control are becoming increasingly common. Despite *the fact that the most common apps are rarely tested in clinical settings and are not backed by medical evidence, they are still widely used. To evaluate the efficacy of apps for weight and diet control, further research is required. Furthermore, there are few examples of food recommender systems that provide nutritional information regarding appropriate food options while still taking into account the*

©IJRASET: All Rights are Reserved

user's physiological status and environmental circumstances. We suggest DIETOS (DIET Organizer Scheme), a recommender system for adaptive nutrition content distribution aimed at improving the quality of life of both healthy people and those suffering from chronic diet-related diseases. The proposed system will create a user's health profile and offer personalized dietary recommendations based on that profile. The profile is built using interactive real-time questionnaires generated by medical doctors and collected by users. The health profile contains information about one's current health and the possibility of developing chronic diseases in the future. The system's first prototype (available at http://www.easyanalysis.it/dietos) contains a list of traditional Calabrian foods compiled by nutritionists (Calabria is a region of the southern Italy). DIETOS can advise not only the use of specific foods that are consistent with one's health status, but it can also include dietary recommendations for certain pathologies or health conditions.

2) Paper Name: Meal Preference Extraction and Its Rating Scale for Diet Analysis Using Associative Mining
Author: Mohd Anuaruddin Bin Ahmadon, Shingo Yamaguchi
Abstract: In this paper, we suggest a framework for obtaining meal preferences for diet requirement analysis aimed at restaurant customers, as well as a recommendation scale to test them. From a universal workflow, we used associative mining, filtered the results, and extracted the preferred meal in the form of workflows. The workflow depicts dietary preferences in terms of meal combinations from various categories. After extracting a workflow, we tested it using a rating scale to quantify the strength of the recommendation. Finally, we compared the extraction preference rating scale to a traditional menu focused on regularly ordered meals to assess the method's effectiveness.

3) Paper Name: Automatic Diet Recording based on Deep Learning
Author: Ligang Hu, Wei Zhang, Chenwang Zhou
Abstract: Diet assessment is critical in the prevention and treatment of many diseases, but keeping a detailed long-term diet record requires too much time and resources. We want to create an automated diet recording system that can increase the automation level of diet recording using deep learning algorithms in order to make it more efficient and affordable. In addition, this paper contains two inputs. After training and evaluating several deep learning models on commonly used food image datasets, and after fusing several popular convolution neural network models, the to 1 accuracy on UEC FOOD 100, UEC FOOD 256, Food 101, and Chinese Food Net dataset scan reach84.0 and 79.8 learning models, we built an automatic diet recording prototype system, which performs well during the test in a real can. This paper's findings indicate that deep learning can achieve high accuracy in the automated identification of dietary items, which could aid in disease prevention and recovery research.

4) Paper Name: Towards Developing Type 2 Fuzzy Logic Diet Recommendation System for Diabetes
Author: Heba Abdelgader Mohammed, Hani Hagras
Abstract: Diabetes is a metabolic disorder that has an effect on human productivity and quality of life. Patients with diabetes face a difficult challenge of monitoring and controlling blood glucose levels in order to prevent severe diabetic complications. It's also challenging for doctors to manually interpret vast amounts of blood glucose data in order to customize care to and patient's needs. Diabetes should be treated with a balanced diet and physical activity, which will help patients prevent severe complications. As a result, equipment must be used to assist diabetics and physicians in controlling the condition and reducing its complications. Diabetes diet recommendations have been made using a variety of methods. However, any strategy must be able to deal with the inherent complexities that come with differing people's views and desires.
This paper describes our ongoing efforts to develop a type 2 fuzzy logic-based diet recommendation system for diabetes to aid in the development of a balanced lifestyle and disease control.

5) Paper Name: Diet-Menu Problem Modelling and Applications
Author: Oksana Pichugina
Abstract: A food-menu problem is formulated, and a mathematical model is built to shape a daily nutrition menu plan in terms of dishes with the lowest expense, thus fulfilling the constraints of a standard diet problem as well as constraints on menu component relationships. The model is a Boolean linear model. It is modified and expanded in two ways, including a sequence of day's diet-menu management that leads to the formulation of models in the form of linear integer programs. These models can be used in the home to prepare balanced and beneficial diets, as well as in large-scale catering and food processing

©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue VI Jun 2021- Available at www.ijraset.com

VI. SYSTEM ARCHITECTURE

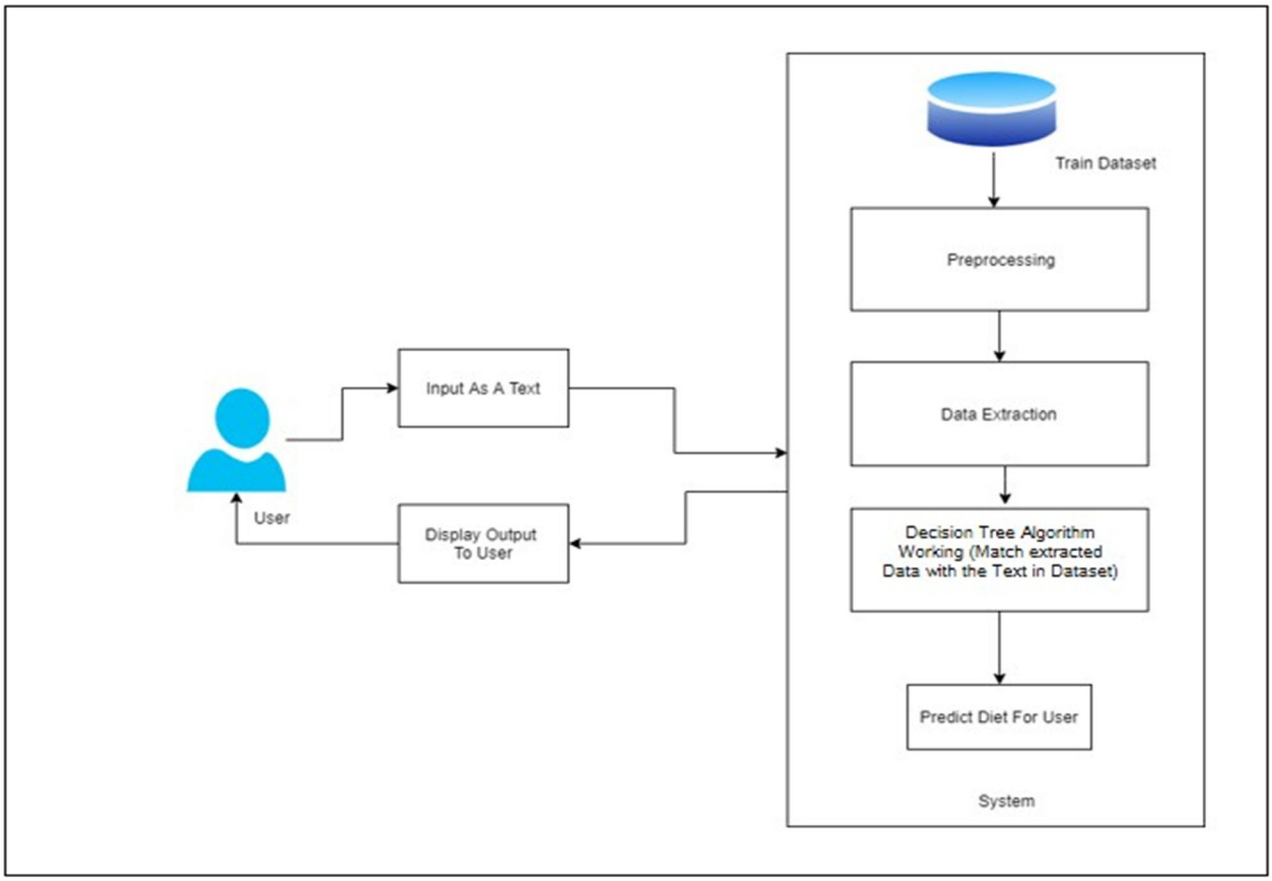


Fig 1 Architecture Diagram

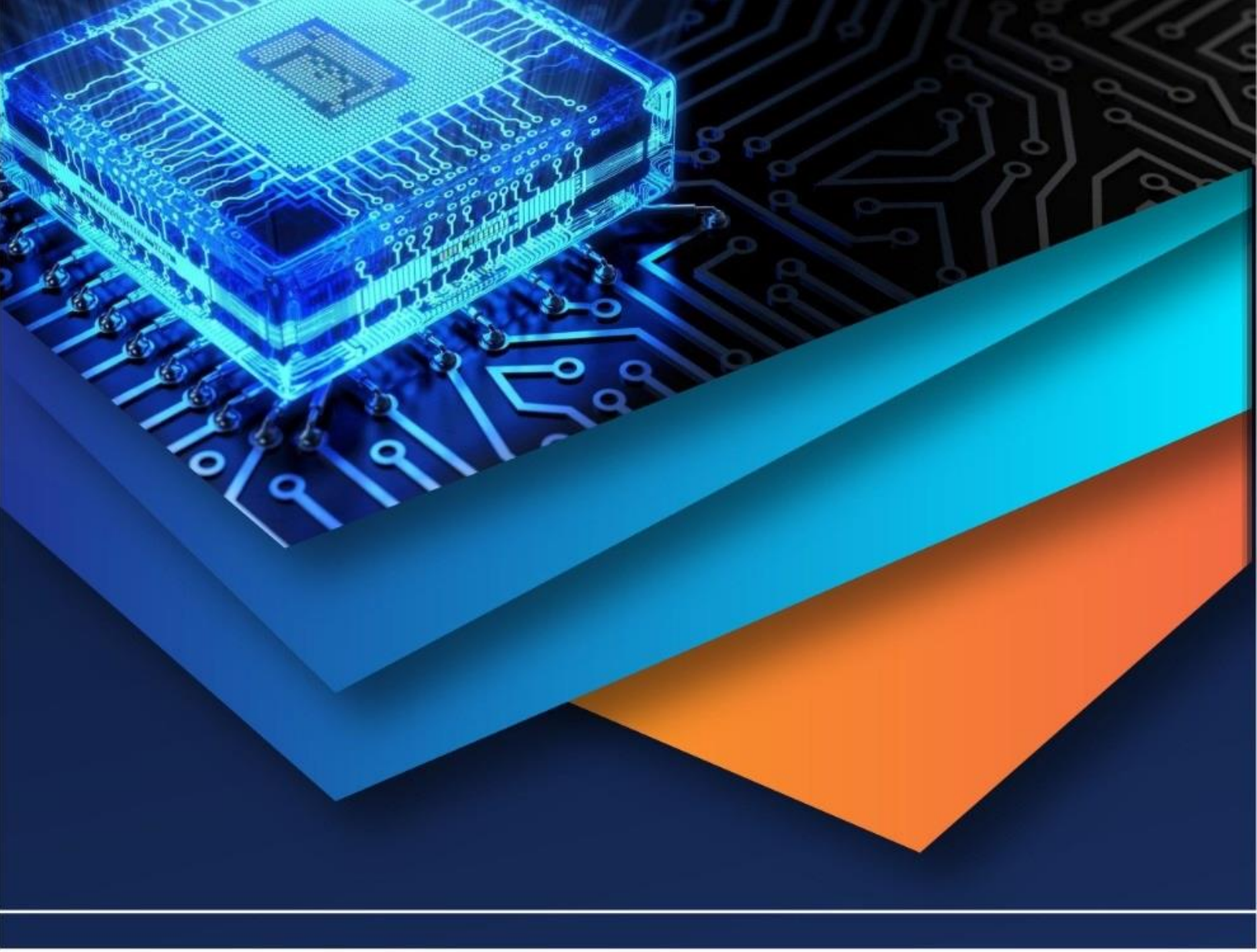
VII. CONCLUSIONS

The "Virtual Dietician for Diet Plan Recommendation" allows the consumer to be aware of his or her current diet data. This software package is robust enough to survive a regressive facility for people with disabilities. This app cuts down on the time and expense of professional diet advice. This website is extremely beneficial to health care providers and dieticians. This product reduces the time compass and expense of master eating routine guidance

REFERENCES

[1] K. Soomro, K. Munir, R. McClatchey, "Incorporating semantics in patternbased scientific workflow recommender systems: Improving the accuracy of recommendations,"2015 Science and Information Conference (SAI), London, pp. 565–571, 2015.
[2] S.H. Liao, H.K. Chang, "A rough set-based association rule approach for a recommendation system for online consumers, Information Processing Management," Vol. 52, Issue 6, pp. 1142–1160, 2016.
[3] M. A. Bin Ahmadon, S. Yamaguchi,"User Workflow Preference Analysis Based on Confidence and Lift Value of Association Rule," Proc. of IEEE GCCE 2018, pp.578–581, Nara, 2018.
[4] X.Amatriain, J.M.Pujol, "Data Mining Methods for Recommender Systems," Recommender Systems Handbook, Springer US, pp.39–71, 2015.
[5] C. Liu, Y. Cao, Y. Luo, G. Chen, V. Vokkarane, and Y. Ma, "DeepFood: Deep Learning-Based Food Image Recognition for Computer-Aided Dietary Assessment," in International Conference on Inclusive Smart Cities and Digital Health, 2016, pp. 37–48.
[6] A.Myersetal. "Im2Calories: Towards an Automated Mobile Vision Food Diary, "in IEEE International Conference on Computer Vision, 2015, pp. 1233–1241.
[7] H. Hassannejad, G. Matrella, P. Ciampolini, I. D. Munari, M. Mordonini, and S. Cagnoni, "Food Image Recognition Using Very Deep Convolutional Networks," in International Workshop on Multimedia Assisted Dietary Management, 2016, pp. 41–49. College Short Form Name, Department of Computer Engineering 2020 41
[8] Y.Probst, D.Nguyen, M.Rollo, andW.Li, mHealth Diet and Nutrition Guidance. 2015.
[9] Y. Probst, D. T. Nguyen, M. K. Tran, and W. Li, "Dietary Assessment on a Mobile Phone Using Image Processing and Pattern Recognition Techniques: Algorithm Design and System Prototyping," Nutrients, vol. 7, no. 8, pp. 6128–6138, 2015.
[10] N. Martinel, C. Piciarelli, G. L. Foresti, and C. Micheloni, "Mobile Food Recognition with an Extreme Deep Tree,"inInternationa conference on Distributed Smart Camera, 2016, pp. 56–61.

©IJRASET: All Rights are Reserved



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)