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Medi-Care:Personalised Medical Recommendation and Diet Planner

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***Abstract*—Currently Disease diagnosis is one of the biggest challenges faced by the medical world. In developing countries, there is often a lack of specialist doctors available in towns and cities and in rural areas people may not know how to diagnose their symptoms until they arrive at hospital which can mean that diagnosis and treatment are delayed.**
We have made a website Medicare which takes the user's symptoms and our trained model predicts the diseases with their probability along with prescribed medications and precautions.. Pie chart is added in the report to make user understand the probability of diseases predicted by the model. In addition to above mentioned features we have also added features like BMI calculator which calculates the user's BMI by taking their weight and height and gives them diet according to their BMI. We have also designed a plan feature which provides user the details of fat, calories and protein of different varieties of food of their choice. We have made a vault feature where user can store their doctor's prescriptions or files related to them. And for any confusion or query related to medical purpose user can clear their doubts via our chatfeature.

Keywords: Sysmptoms, Diseases, Health monitoring, Machine Learning, Health-Life Balance, Secure Vault,Bmi,Height,Weight,Nutritional Analyst

I. INTRODUCTION

The proposed Medicare system is designed as a web-based platform that allows early disease prediction and efficient health management. Users can input their observed symptoms and the system uses trained machine learning models to identify possible diseases and compute corresponding probabilities. For each diagnosed disease, the system extracts set of medications and precautionary measures that will help user to decide what action he or she should perform. To increase understanding for users, results of predicted diseases are presented by pie charts.

The disease prediction feature on this Platform will also be clubbed with a Body Mass Index (BMI) feature which will tell the user the health he/she is into at present and also suggest the best possible Diet Plan. The Diet Planner Section will have the list of Food Item with their Nutritional Values (TV) i.e. calories, fats and proteins. User can store his/her Medical Prescription and Health related Records securely locked in the Platform itself through his/her User ID & Password. Additionally, the Platform shall also feature a Chatbot / Virtual Assistant that will guide and resolve the medical related queries of the end users. This Platform shall provide an integrated and most user friendly approach to all the users by covering Disease Prediction, User Monitoring and lots of support to users.

II. LITERATURE SURVEY

Manoj Kumar, Kishore Balabantaray, Santosh Kumar Routray and Gopal Roy, "Real-time Multi Level Chronic Disease Prediction and Recommendation Model Using Deep Learning," Research Paper, International Journal of Advanced Research (IJAR), Volume 4 Issue 6 Version 1.0, June 2017, p. 1, doi: 4451945,issn:24546354,10.43095/14541945105406 v1.0,
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Manoj Kumar, Kishore Balabantaray, Santosh Kumar Routray and Gopal Roy, "Real-time Multi Level Chronic Disease Prediction and Recommendation Model Using Deep Learning," International Journal of Advanced Research (IJAR), vol. 4 Issue 6 Version 1.0, June 2017, pp. 1410–1417. doi: 4451945.

Manoj Kumar, Kishore Balabantaray, Santosh Kumar Routray and Gopal Roy, "Real-time Multi-Level Chronic Disease Prediction and Real-Time Recommendation Model using Deep Learning Concept," vol. 5, no. 7, pp. 35–40, 2025.

Lee et al. (2024) in this paper aimed to design and train the prediction models of major chronic diseases such as diabetes, hypertension, hyperlipidemia, and cardiovascular disease. The datasets for training and validation were collected from a health examination database which comprises more than 3.2 million samples of in-patient data, out-patient data and laboratory test results. Additionally, several feature engineering approaches were implemented to enhance the accuracy of the models based on different machine learning algorithms such as logistic regression, random forest, gradient boosting, extreme gradient boosting. Experiment results demonstrated that all models of the experiments obtained an accuracy of more than 80%, with XGBoost being the most competitive model. Overall, the study found that the designed machine learning models using a common data model in the healthcare dataset are able to provide early chronic disease prediction in order to achieve the goals of preventive healthcare.

Sood, S. & Sharma, S. Disease Prediction using Symptom(s) through Machine Learning Technique. Int J Adv Res (IJAR) - IJAR : International Journal Advanced Research Volume 13, Special Issue 1, February 2024, pp. 1-4, https://www.ijar.net/Downloads/Papers Volume 13, Special Issue 1, February 2024/Sood_Sharma_IJAR_13_1_2024_1_4.pdf. Accessed: 26 Feb 2024. This paper focuses on predicting diseases based on users' provided /asked symptoms using machine learning models. In this study, we have utilized some famous machine learning classifiers including Decision Tree, K-Nearest Neighbor, Naïve Bayes, and Random Forest, in order to classify the diseases and found a very decent accuracy. The collected dataset of diseases and its related symptoms are used to train and validate the proposed model. The used model is implemented using supervised machine learning approach. The proposed system not only takes the asked symptoms as an input but also returns the associated probability of diseases. The results indicate that the proposed model achieves an accuracy of more than 90% in disease prediction. The results are also used to improve early disease prediction and healthcare decision-making systems.

Al-qarni and Algarni (2025) "Disease Prediction from Symptom Descriptions Using Deep Learning and NLP Technique". In this study, we aim to detect diseases from unstructured free-text symptom descriptions using recent Natural Language Processing (NLP) techniques and deep learning models. We develop a model that uses word-embeddings based text preprocessing in addition to state-of-the-art deep learning models such as LSTMs and CNN-LSTMs as well as GRU networks to predict diseases from symptom descriptions. A comparison study with standard machine learning classifiers including Decision Trees is also provided. We use two datasets that includes 24 and 41 diseases descriptions. The result of the experimental study shows promising results for early disease prediction for remote healthcare systems. Very high accuracy are achieved by the proposed model, up to 99.90% achieved by CNN-LSTM model. Combining NLP and deep learning techniques improves significantly the performance of disease prediction.

Padhy, S., Nanda, P. & Dash, G. Multiple Disease Prediction Using Novel Artificial Intelligence Techniques. Artificial Intelligence for Health (2024)Early disease prediction using Artificial Intelligence (AI) techniques can save considerable cost and improve the life of human being. In this paper, a novel methodology for prediction of diseases is proposed. A robust system for prediction of diseases has been designed and implemented, which predicts the likelihood of a patient to suffer from certain diseases based on various factors like symptoms, past medical history, geographical location, etc. along with personal health-related data like daily habits, eating habits, exercise habits, etc. Using healthcare datasets, diseases are predicted based on collected data. The data is preprocessed using several data preprocessing techniques like handling missing values, outliers, data normalization, etc. After preprocessing, AI/Machine

Learning algorithms such as Logistic Regression, Decision Tree, Random Forest, Support Vector Machine, and K-Nearest Neighbor are employed to train and validate the models. The proposed models have achieved maximum accuracy of 98.6%. The results clearly show that the proposed methodology improves the early disease prediction using AI techniques, thereby reducing healthcare costs.

Jyoshnavi (2025) of India designed and developed "Medicare: A Web-Based Disease Prediction and Healthcare Management System" for their research project on "Disease Prediction using Machine Learning Technique based on User Entered Symptoms". In this research work, the system uses machine learning algorithms in order to predict diseases on basis of entered symptoms by user along with accuracy level and further provides the required medications and precautions to cure that disease. Additionally, the system incorporates some useful visualizations like pie charts in disease prediction results and also offers a lot of features like BMI calculator for healthy checkup, diet planner that provides details of nutritional food and safe medical record storage in secure vault. A chatbot is also designed to reply any kind of medical queries asked by user. The outcomes of this research work assure of early disease prediction and increased healthcare accessibility and support for users.

Research Objectives

Create a web-based interface using existing tools, which will query the user for symptoms and then use machine learning techniques to predict diseases based on the input provided by the user.

This application provides accurate predictions with respective probability scores and informs about medications and precautions for given lesions.

Use data visualization to make information about the site's usage more understandable, such as this pie chart.

We need to incorporate health monitoring into the app. Like it calculates BMI and does diet planning with corresponding nutritional analysis.

Create a secure site for storing patients' medical history and chatbot which will operate in real time.

Problem Statement

Healthcare is an essential component of human well-being and on no account should it be a far reaching or impossible to access service. Many parts of the world today are severely understaffed when it comes to their healthcare system. Patients often have difficulty identifying the cause of symptoms leading to a late stage of diagnosis and treatment. Patients and doctors alike encounter difficulties in locating the right specialist for particular health cases. Moreover, doctors have trouble managing to reach their patients and time-efficiently handling them.

Traditionally, healthcare requires in-person visits which can be very time-consuming and expensive. Currently, there are no comprehensive online platforms that allow users to manage health records, log and track nutrition information, or obtain prompt advice on minor health concerns. Poor visualization tools often render sensitive medical information impossible to interpret for most individuals.

In order to provide accessible healthcare at an affordable cost, an integrated system is required to predict/ detect diseases at an early stage, health monitoring, diet plan, secure health records storage, and real-time healthcare support.

Scope of the study

The Medicare system includes the web based implementation to predict early signs of disease by employing machine learning algorithms on users' entered symptoms. It will be able to predict multiple diseases with their corresponding probabilities, suggest medications and precautions and provide enhanced understanding to the user through graphical elements such as pie charts.

The project includes additional health monitoring features. Users can calculate their BMI and receive information about their diet based on their input. Nutritional information of food items selected by the user will be displayed with details of calories, fats and proteins. The system also includes a secure vault to store important medical information such as prescriptions and other important documents. These details can be easily viewed and managed by the user.

It incorporates a chatbot that could help users find some basic health related information. This project is meant to aid users in their initial decisions regarding their health, and to improve accessibility

to health information. It is NOT intended to substitute medical doctor's diagnosis.

III. METHODOLOGY

Our proposed Medicare system follows a systematic approach to build a predictive model to predict diseases and provide appropriate healthcare assistance. We use a relevant dataset sourced from Kaggle which contains all sorts of diseases and their corresponding symptoms. Using this dataset we train a machine learning model that would eventually form a part of our proposed Medicare system.

All acquired data is preprocessed to improve quality and usability. This includes a data cleaning step to remove missing, inconsistent or duplicate values. We apply techniques for feature engineering to select and transform variables that improve model performance.

A range of machine learning approaches have been investigated for model development including custom naive bayes, Gaussian naive bayes and Random Forest. The data has been split and trained with a number of different algorithms to evaluate the accuracy and performance. The hyperparameters of the fitting have also been optimised to improve the learning of the model.

All trained models are then evaluated using performance metrics like Accuracy, Precision, Recall and F1-Score. A model with best performance is then deployed as web based application and UI interfaces are implemented for disease prediction, result visualization and user guidance.

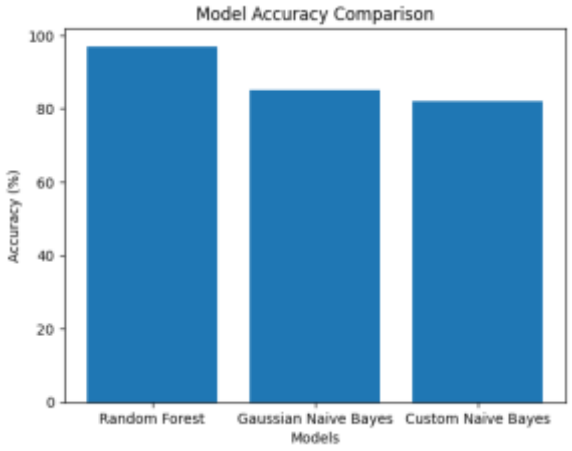
IV. Results and Discussions

In this paper, we present a web-based system for disease prediction and healthcare management using machine learning techniques. The performance of the system is evaluated using a symptom-based dataset collected from Kaggle, which includes multiple diseases and corresponding features. The data is processed and balanced to ensure accurate prediction across different disease categories.

The prediction results show that the model provides reliable probability-based outputs for multiple diseases, and the visualization using pie charts helps users easily understand the distribution of predicted diseases. The system effectively categorizes diseases based on user-input symptoms and provides appropriate medications and precautionary measures.

Users were also able to assess their health condition using BMI and diet planning features, which provide insights into nutritional intake and overall wellness. The secure vault ensures efficient storage and management of medical records, while the chatbot supports users in resolving basic medical queries.

The results indicate that the system achieves good prediction accuracy using algorithms such as Random Forest and Naïve Bayes. The findings highlight that machine learning models can significantly improve early disease detection and healthcare accessibility. Overall, the system demonstrates the potential to support users in making informed health decisions and reducing dependency on traditional healthcare methods



Model	Accuracy	Precision	Recall	F1-Score
Random Forest	97%+	97%+	97%+	97%+
Gaussian Naive Bayes	85%+	86%+	85%+	85%+
Custom Naive Bayes	82%+	—	—	82%+

V. CONCLUSION

Medi care provides user friendly platform for early disease prediction with probability of getting specific disease for a particular symptoms not only medical recommendation the medi care website also includes diet plan as of know people are more conscious about their healthy life by taking proper weight so that the medicare has features like bmi for

calculating their bmi and suggesting diet for them to maintain the body in healthy version. the one other feature is nutrition vault which is used to give the nutritional values like calories,fat ,protein for al the types of a specific food , vault is other feature which is used to store the prescriptions to store for a ling time securely and chat bot which is used to assist the user medical questions.IIn future it can be enhanced with subscription based vault storage,online doctor consultation,doctor appointment booking directly through our website. Additionally to ake multi language support that will make more accessible to the multiple user.

VII. REFERENCES

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