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HUMAN DISEASE DETECTION USING ML

[1]Y. Deepika Reddy [2] V. Sandhya Rani [3] S.K. Sathyanarayana

[1,2] Students , [3] Assistant Professor

[1,2,3] Department of Electronics and Communication Engineering

Sreenidhi Institute of Science and Technology, Hyderabad-501301, India

Abstract— **As everything becomes increasingly digitalized in this rapidly Human healthcare is one of society's most important issues. To ensure that patients receive the care they require as quickly as possible, it searches for the best diagnosis and thorough disease. Therefore, predicting diseases in their early stages is frequently a difficult undertaking. In order to do this, we would like to present a methodical viewpoint on the use of machine learning in the diagnosis of human diseases. Human Disease Detection using Machine Learning is a system that utilizes advanced algorithms and statistical models to predict diseases based in symptoms and other information entered by a user. The Disease Prediction system is built using Python Programming Language and incorporates a dataset from hospitals to train the Machine Learning model. The system utilizes Tkinter Interface, a Python module for creating graphical user interfaces, to provide a user-friendly and intuitive experience. Overall, the system is a valuable tool for the health care industry and individuals seeking to manage their health. It incorporates the fields of data mining, artificial intelligence, big data, and ML to make diagnoses, providing a cutting-edge approach to disease detection and prevention.**

Keywords: -Machine Learning, Tkinter, Disease prediction, Data mining

I. INTRODUCTION

In today's healthcare industry, disease diagnosis and treatment play a critical role in patient care. This system can help both users and healthcare professionals by providing a way to identify diseases quickly and accurately. Users can avoid go to hospitals or clinics by simply entering their symptoms and receiving an accurate diagnosis. Human Disease Detection Using Machine Learning is built using ML algorithms and the Python programming with a Tkinter.

By entering their symptoms or other useful information, the system can accurately determine the type of disease the patient is suffering from. Healthcare professionals can also benefit from the system by using it to gather information from patients and providing them with more precise diagnoses in a matter of seconds.

The purpose of the disease prediction project using ML is to address the issue of general diseases that often go unnoticed until they reach a critical stage. In today's highly competitive environment, people are so engrossed in economic development that they tend to neglect their health. By utilizing ML algorithms, this system provides accurate and efficient disease diagnosis. Doctors may sometimes make incorrect diagnoses, but with the assistance of ML, disease prediction systems can provide more. accurate and reliable results, leading to more successful treatments.

II. LITERATURE SURVEY

[1] K.M. Al-Aidaroos, A.A. Bakar, and Z. Othman conducted the investigation for the finest medical diagnosis mining technique.In this study, LR, KStar (K*), Decision Tree (DT), Neural Network (NN), and a simple rule-based algorithm (ZeroR) were all put up against Nave Baeyes in a side-by-side comparison. Using 15 real-world medical situations from the UCI machine

learning library, the effectiveness of all algorithms was assessed (Asuncion and Newman, 2007). In the trial, NB outperformed the other algorithms in 8 out of the 15 data sets, which led to the conclusion that Nave Baeyes produces better prediction accuracy outcomes than other methods. Treating chronic illness globally has been shown to be both time- and money-inefficient by Darcy A. Davis, Nitesh V. Chawla, Nicholas Blumm, Nicholas Christakis, and Albert-Laszlo Barabasi. In order to forecast prospective disease risk, the scientists conducted this investigation. This was done using CARE, a programme that simply requires a patient's medical history and ICD-9-CM codes to identify potential illness risks. CARE combines collective filtering techniques with clustering to estimate each patient's highest disease risks based on their personal medical history and those of patients who have similar medical histories. The authors have also established ICARE, an iterative version that incorporates ensemble principles for increased effectiveness.

. [2] These cutting-edge technologies can anticipate a variety of medical diseases in a single run and don't require any specialised knowledge. Thanks to ICARE's exceptional potential risk coverage, thousands of illnesses will receive more precise early warnings several years in advance. The CARE system may be utilised fully to study a wider range of illness backgrounds, pose never-before-asked questions, and promote talks about early identification and prevention.

[3] Jyoti Soni, Ujma Ansari, Dipesh Sharma, and Sunita Soni created this study paper to present a survey of current methods for finding information in databases utilising data mining techniques that are applied in modern medical research, particularly in the prediction of heart disease. To compare the effectiveness of predictive data.

[4] Techniques were used on the same dataset, and the results demonstrate that Decision Tree outperforms other predictive approaches such as KNN, Neural Networks, and Classification based on Clustering. In some cases, Bayesian classification even matches Decision Tree in terms of accuracy.

[5] Shadab In their work, Adam Pattekari and Asma Parveen used the Decision Tree, in which the customer submits data that is then compared to a predetermined set of values, to predict cardiac illnesses. Patients were able to submit fundamental information that was compared to the data as a consequence of this investigation, and heart disease was predicted. M.A. Nishara Banu and B. Gomathy used medical data mining techniques such association rule mining, grouping, and clustering I to analyse the numerous heart-related issues. A decision tree's objective is to display every potential choice consequence. Different rules are developed to produce the optimum outcome. Age, sex, smoking, being overweight, consuming alcohol, blood sugar, heart rate, and blood pressure were the criteria employed in this investigation. With ids ranging from 1 to 100, the risk level for numerous criteria is saved. (1-8). Higher IDs other than 1 reflect higher risk levels, whereas IDs less than 1 represent the typical level of prediction. The K-means clustering algorithm is used to analyse the dataset's pattern. The algorithm creates k groups from the data. Each point in the dataset receives a closed cluster. The average of each cluster's points is used to recalculate each cluster centre.

III. EXISITING SYTEM

Traditional methods for disease prediction involve several risk factors and utilize various algorithms, such as datasets and programs. These models classify patients into high-risk and low-risk categories based on the tests done in a category. However, these systems are only useful in clinical circumstances and not in larger health-related industries. To incorporate disease prediction in various health-related industries, we have utilized ML and supervised learning methods to build a more accurate prediction system.

In conclusion, traditional disease prediction models have limitations that prevent their use in large health-related industries. By utilizing ML and supervised learning methods, we can build a more accurate and reliable disease prediction system that can benefit both patients and healthcare providers. Our ML-based system aims to overcome these limitations by utilizing large datasets and advanced algorithms that can identify patterns and correlations that traditional methods may miss.

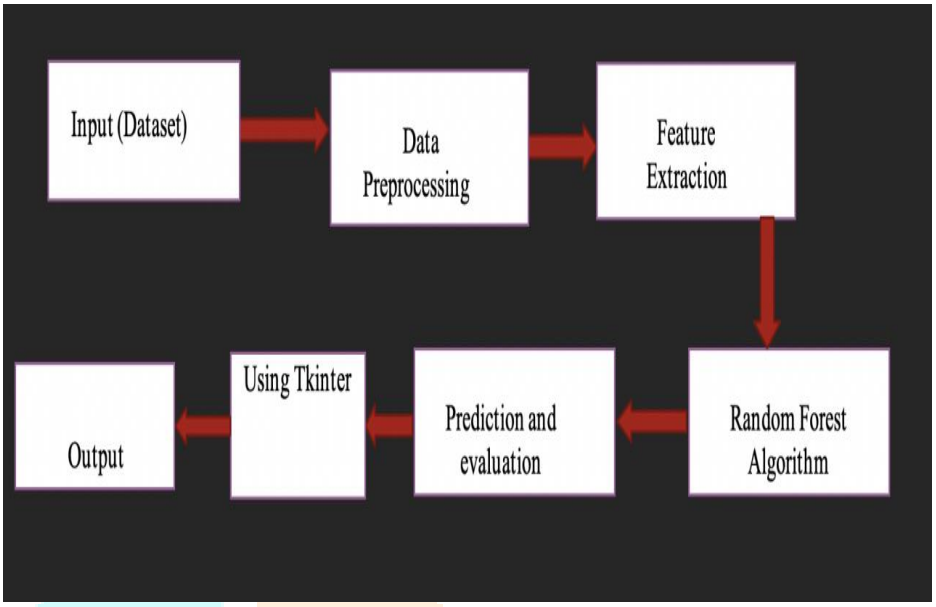
IV. PROPOSED SYSTEM

In this research, the data collected from the patient's symptoms undergoes preprocessing and feature selection, in which the user selects various symptoms. Then data undergoes classification using the Random Forest algorithm. Next step involves risk analysis, where the structured and unstructured forms of data are combined to provide an overall risk analysis required for predicting the disease . The proposed system aims to improve disease prediction accuracy and reliability by utilizing ML techniques and algorithms.

By combining structured and unstructured data, the system can provide a more comprehensive risk analysis and prediction of diseases, benefiting both patients and healthcare providers. In view construction of a system that can forecast a patient disease on basis of their symptoms, this suggested system for disease prediction using ML can employs a number of different methodologies, algorithms, and tools. To determine the precise percentage of the

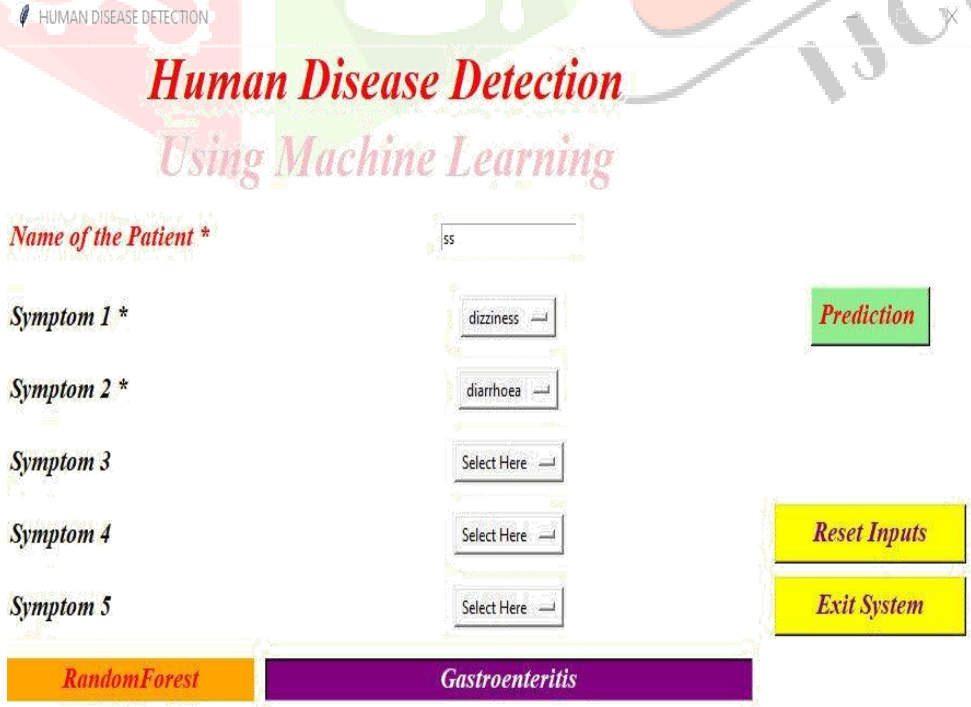
disease, the system compares the patient's symptoms with th e dataset that was previously accessible in the system.

a. ARCHITECTURE/WORKFLOW



b. RESULTS

In this human disease detection using project the patient needs to enter the symptoms in the below page. The patient must enter his name before giving the data about symptoms. After giving all the user data the Patient will get the related disease by clicking on the prediction.



V. CONCLUSION

We discussed that Human Disease Detection using ML that it can effectively forecast diseases based on patients' demographic data and symptoms, the Disease Prediction using Machine Learning project is a crucial tool for the healthcare industry. The healthcare sector nowadays is crucial to treating patients, and this initiative will be a great help to medical staff members. Patients can identify the ailment they have by simply entering their symptoms and other pertinent data, which can help them avoid going to the hospital or clinic.

The workload of doctors can be greatly reduced if the healthcare sector accepts this project, and they would be able to forecast ailments properly and fast. The Illness Prediction system offers forecasts for a variety of prevalent illnesses that, if untreated or disregarded, can develop into fatal illnesses and cause issues for the patient and their family.

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VII. REFERENCES

1 Acharya, U. R., Fujita, H., Oh, S. L., Hagiwara, Y., Tan, J. H., & Adam, M. (2017). Application of deep convolutional neural network for automated detection myocardial infarction using ECG signals. Information Sciences, 415–416, 190–198. https://doi.org/10.1016/j.ins.2017.06.027.

2. Chitra, K. and. (2018). Classification Of Diabetes Disease Using Support Vector Machine. 3(2), 1797–1801. https://www.researchgate.net/publication/320395340 .

3 Cinarer, G., & Emiroglu, B. G. (2019). Classificatin of Brain Tumors by Machine Learning Algorithms. 3rd International Symposium on Multidisciplinary Studies and Innovative Technologies, ISMSIT 2019 - Proceedings. https://doi.org/10.1109/ISMSIT.2019.8932878 .

4 Durai, V. (n.d.). Liver disease prediction using ML. 5(2), 1584–1588.

5 Fan, C. H., Hsu, Y., Yu, S. N., & Lin, J. W. (2013). Detection of myocardial ischemia episode using morphological features. Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society,EMBS, 7334–7337. https://doi.org/10.1109/EMBC.2013.6611252 .

6 Huang, F. J., & LeCun, Y. (2006). Large-scale learning with SVM and convolutional nets for generic object categorization. Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition, 1(July 2006), 284–291. https://doi.org/10.1109/CVPR.2006.164 .

7. Ko, J., Swetter, S. M., Blau, H. M., Esteva, A., Kuprel, B., Novoa, R. A., & Thrun, S. (2017). Dermatologist-level classification of skin cancer with deep neural networks. Nature, 542(7639), 115–118. http://dx.doi.org/10.1038/nature21056.

8. Murphy, K. P. (2012). Machine Learning - A Probabilistic Perspective - Table-of-Contents. The MIT Press, 1049.

9 Mcculloch, W. S., & Pitts, W. (1990). A logical calculus nervous activity. Bulletin of Mathematical Biology, 52(l), 99–115.

10. Najim Adeen, I. M., Abdulazeez, A. M., & Zeebaree, D. Q. (2020). Systematic review of unsupervised genomic clustering algorithms techniques for high dimensional datasets. Technology Reports of Kansai University, 62(3), 355–374.

11. Naqi, S. M., Sharif, M., & Jaffar, A. (2020). Lung nodule detection and classification based on geometric fit in parametric form and deep learning. Neural Computing and Applications, 32(9), 4629–4647. https://doi.org/10.1007/s00521-018-3773-x Pan, J., & Tompkins, W. J. (1985).

12. Stuart, P. J., Crooks, S., & Porton, M. (2002). An interventional program for diagnostic testing in the emergency department. Medical Journal of Australia, 177(3), 131–134. https://doi.org/10.5694/j.1326- 5377.2002.tb04697.x.

13. Tajbakhsh, N., Shin, J. Y., Gurudu, S. R., Hurst, R. T., Kendall, C. B., Gotway, M. B., & Liang, J. (2016). Convolutional Neural Networks for Medical.