

Disease Prediction Model through Machine Learning Approach

Abstract: Now-a-days, people face various diseases due to the environmental condition and their living habits. So the prediction of disease at earlier stage becomes important task. But the accurate prediction on the basis of symptoms becomes too difficult for doctor. The correct prediction of disease is the most challenging task. To overcome this problem data mining plays an important role to predict the disease. Medical science has large amount of data growth per year. Due to increase amount of data growth in medical and healthcare field the accurate analysis on medical data which has been benefits from early patient care. With the help of disease data, data mining finds hidden pattern information in the huge amount of medical data. We proposed general disease prediction based on symptoms of the patient. For the disease prediction, we use K-Nearest Neighbor (KNN) and Convolutional Neural Network (CNN) machine learning algorithm for accurate prediction of disease. For disease prediction required disease symptoms dataset. In this general disease prediction the living habits of person and checkup information consider for the accurate prediction. The accuracy of general disease prediction by using CNN is 84.5% which is more than KNN algorithm. And the time and the memory requirement is also more in KNN than CNN. After general disease prediction, this system able to gives the risk associated with general disease which is lower risk of general disease or higher.

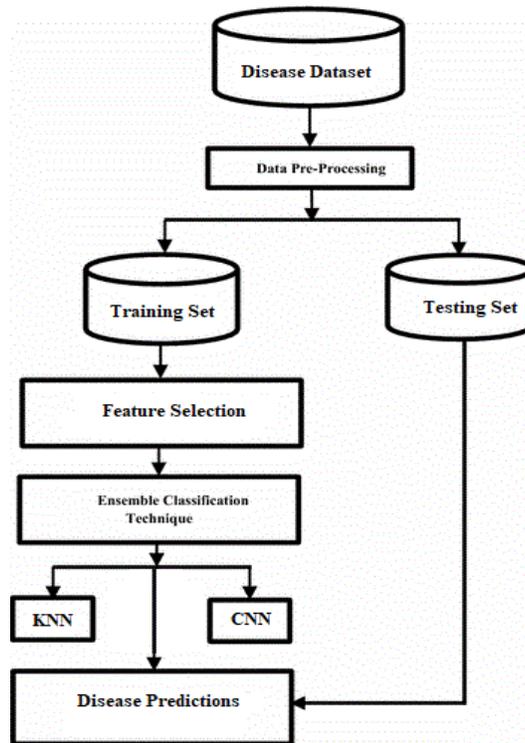
Introduction:

Artificial Intelligence made computer more intelligent and can enable the computer to think. AI study consider machine learning as subfield in numerous research work. Different analysts feel that without learning, insight can't be created. There are numerous kinds of Machine Learning Techniques like Unsupervised, Semi Supervised, Supervised, Reinforcement, Evolutionary Learning and Deep Learning. These learning's are used to classify huge data very fastly. So we use K-Nearest Neighbor (KNN) and Convolutional neural network (CNN) machine learning algorithm for fast classification of big data and accurate prediction of disease. Because medical data is increasing day by day so usage of that for predicting correct disease is crucial task but processing big data is very crucial in general so data mining plays very important role and classification of large dataset using machine learning becomes so easy.

It is critical to comprehend the accurate diagnosis of patients by clinical examination and evaluation. For compelling determination decision support systems that depend on computer may assume an indispensable job. Health care field creates enormous information about clinical evaluation, report in regards to patient, cure, subsequent meet-ups, medicine and so

forth. It is intricate to orchestrate appropriately. Quality of the data association has been influenced due to improper management of the information. . Upgrade in the measure of data needs some legitimate way to concentrate and process information viably and efficiently. One of the many machine- learning applications is utilized to construct such classifier that can separate the data based on their characteristics. Data set is partitioned into two or more than two classes. Such classifiers are utilized for medical data investigation and disease prediction.

Today machine learning is present everywhere so that without knowing it, one can possibly use it many times a day. CNN uses both the structured and unstructured data of a hospital to do classification. While other machine learning algorithms only work on structured data and time required for computation is high also they are lazy because they store entire data as a training dataset and uses complex method for calculation.



work flow for Disease Prediction Using ML

Conclusion:

Machine Learning (ML) techniques are crucial in different business fields. Healthcare field facing more problems and it is becoming more expensive. Several ML techniques are used to rectify them. Various ML techniques are being used for prediction of various diseases like heart

disease, breast cancer, diabetic disease and thyroid disease. Identifying the processing of raw healthcare data will help in the long term saving of human lives and early detection of abnormalities in health conditions. However, the mortality rate can be drastically controlled if the disease is detected at the early stages and preventative measures are adopted as soon as possible. So, I would like to do a detailed study on various existing algorithms being used in predicting diseases and analyze them. Then I would like to do my research with various machine learning algorithms or even try few hybrid techniques as well for improving the overall accuracy in the prediction of diseases and reduce the overall deaths that occur due to various diseases.

By

G. Swapna Rani