

Article Writing

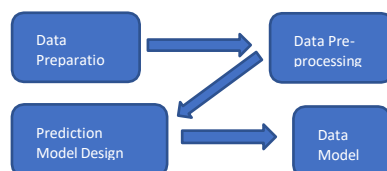
Disease is a part and parcel of living being. Growing economically leads to find different ways to address them. Many diseases are evolved over the period which are difficult to identify, such as COVID-19 which can cause lung complication such as pneumonia, Asthma etc. Health is the most crucial aspect of life it needs to be taken care and treated before in hand. Lungs is a vital organ of the body which purify the blood by oxygenating. It has two separate chambers which branches out from main inlet and outlet. It can be infected through different means such as fungi, bacteria, and by harmful air such as carbon dioxide and poisonous gas which cause Lung disease which is one of that kind which needs to be diagnosed on time and accurately and treated, currently lung is infected by the bacteria which is spreading quickly through air which is highly dangerous and causing loss of life. In the process of addressing the Lung diseases new systems, tools, technique have been studied one such system is "Automated Lung X-Ray Result System", It is used to detect

the lung infection and predict results by using historical data. Deep learning techniques such as transfer learning method is used to predict the results by using lung x-ray image inputs. Deep learning method such as deep CNN model is used to provide accurate results (99.34 % classification accuracy).

What deep learning techniques predicts lung infections in patients, answering this Question by exploring, how to blend feature extraction technique with transfer Learning Methods to Develop Automated lung x-ray result system. The objective is to provide automated system to predict lung infection.

To study area of through system of methods is the methodology, By the study of reference research paper, Transfer learning method suites best for the prediction of lung infection through Automated lung infection prediction system. Dataset is picked from Kaggle and Process or steps to be followed on this dataset shown below diagrammatically,

Fig-1: Flow of proposed lung infection detection

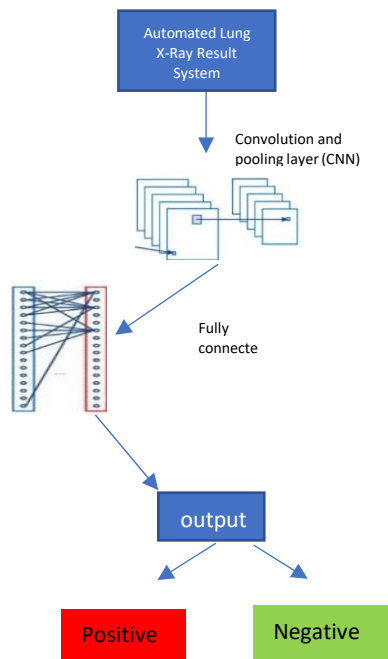


Data preparation is the stage where data will be collected and converted into proper format before loading into the platform, Next step is to process the data, processing data includes reshaping of image splitting data into train and test followed by Model design method where it



uses Deep Learning to extract feature on a train data set and learn the patterns ,finally the Model prediction method will predict the accuracy and gives the output, this is how the flow looks.

Fig 2: Architecture of Automated Lung X-RayResult System



This is the complete Architecture of the Automated Lung X-ray Result System, it is a system which takes image as an input and here black and white image have been taken as the dataset is from Kaggle it provided the black and white, it has three thousand images and the image color is essential for faster process because of its pixel and has only two color to process. After that image will be sent to the Automated Lung X-ray Result System which will be built by deep learning code, coded in python language, most likely coded on Jupyter notebook. As soon the image passes through the code first its going to get divided into several parts and choose proper portion of the image and this is what called as feature extraction and here image will be segmented then it is going to be pooled after that it will be connected completely to form a structure once it is done it will be compared with the train set of the data and checks for the matching if it matches the infected image as in train and test has both infected and non- infected images in equal number it will look for the best match and gives out the result. If the result matches the infected x-ray image it gives the output as positive else shows negative, then user will know their result just by uploading image to the system and clicking result button.

Scope of this research can be expended to predict various disease such as (CVD) cardiovascular disease, diabetics so on. It does not stop there it can be extended to agriculture field to predict soil quality. Now the dataset has considerable instances which gives room to experiment on more sophisticated images and the number of images could be increased and check for the feasibility, also the dataset is of black and white so colored instances can be used and check for the processing time and their accuracy.

