TO PREDICT COVID-19 USING AGE AND BODY TEMPERATURE

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Abstract: Corona virus (COVID-19) is a highly contagious disease which can be easily spread through air and close contact with covid infected humans. The virus maybe diminutive but its highly injurious for our health. They first attack the human respiratory system causing severe breathing problems like difficulty in breathing or shortness of breath. The most usual symptoms are fever, dry cough, tiredness. Machine learning (ML) has proved to be vital in predicting Covid-19 risks. Temperature screening using machine learning is also a way to predict Covid-19.

Keywords - Covid-19, machine learning (ML), temperature screening

I. INTRODUCTION

Corona virus (COVID-19) is a global outspread infectious disease which affects all age group people easily. Older people those with underlying medical issues will have severe illness of covid. More than 110 countries are brutally affected by this virus. Millions of people were dead and hundred millions of active cases are recorded worldwide. Some of the usual symptoms are fever, dry cough, tiredness, shortness of breath. From the usual symptom of fever, cold it further leads to infection with the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV). Machine learning (ML) is a type of Artificial Intelligence (AI) which brings out patterns using an algorithm. Logistic Regression algorithm is used to predict the chances of affecting covid by comparing the age and body temperature of the individual with the given dataset (records). If the body temperature is higher than normal body temperature (98.6°F) then that person has more chances of positive covid case. Normal body temperature or lower body temperature(< 98.6°F) probably they have negative covid case.

II. RELATED WORKS:

Coronavirus Disease (COVID-19) is a global pandemic with an exponential growth rate and an incompletely understood transmission process [4]. The most common symptoms of the virus include shortness of breath, fever, cough, loss of smell and taste, headache and muscle ache [9]. The recent development of machine learning-based tools for healthcare providers allows novel ways to combat such global pandemics. The term machine learning encompasses the collection of tools and techniques for identifying patterns in data [12].

Generally, testing to find covid-19 positive cases relies heavily on Reverse Transcription-Polymerase Chain Reaction (RT-PCR), which is time consuming and has false-negative error. Thus, developing new approaches for detecting patients at a faster rate with higher accuracy is a matter of importance [6].

Computed tomography (CT) is a test that provides a window into pathophysiology that could shed light on several stages of disease detection and evolution [3] [13]. Artificial intelligence (AI) has the potential to aid in rapid evaluation of CT scans for differentiation of COVID-19 findings from other clinical entities. For instance, the average processing time for a trained deep learning algorithm to identify COVID-19 on CT chest was 4.51seconds, as compared to an average of 10minutes 9seconds required by a radiologist.15,26 This means that if an AI algorithm is trained to have equal accuracy as a radiologist, it will report results about 135 times faster than a radiologist [8] [10]

AI-based algorithms can readily identify CT scans with COVID-19 associated pneumonia, as well as distinguish non-COVID related pneumonias with high specificity in diverse patient populations [13]. AI algorithm aims to classify chest CT scans as positive vs. negative for COVID-19 pneumonia and in positively classified CT scans, it delivers a saliency map for visualization of AI-associated predictions. While useful for general visualization of AI output, this does not delineate COVID-19 burden, which may be more accurately depicted by segmentation algorithms. The test success metrics are highly dependent upon pretest background prevalence, and testing practices may vary according to exposure rates and phase of pandemic [2].

Artificial intelligence tools can be used to collect and analyze large amounts of data (such as patient name, age, gender, etc), identify trends, stratify patients based on risk, and propose solutions to population instead of the individual [5].

Artificial intelligence method applied in screening important index regarding to COVID-19 diagnosis. The data set is pre-

processed, including numerical value[1]. In the case of rapid increase in number of new and suspected COVID-19 cases, artificial intelligence (AI) can be used efficiently for the detection or characterization of COVID-19 on imaging [11] [7].
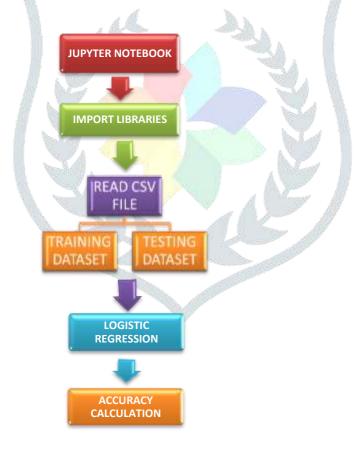
III. METHODOLOGY

A. DATA MINING

Out of the original source, data mining is a practice of analysing huge databases to generate and accumulate new information. Many MNC's use this process to collect user intervened data. Data mining has manytechniques, one of which is classifier. We use logical regression algorithm to predict covid dataset.

B. LOGICAL REGRESSION:

This supervised learning method gives the probability of a target variable. Logistic regression uses fairlycommon machine learning algorithm that's accustomed predict categorical outcomes. Logistic regression uses classification algorithm, used when the worth of the target variable is categorical in nature. Logistic regression ismost ordinarily used when the information in question has binary output, so when it belongs to at least one class oranother, or is either a 0 or 1. The following steps for logistic regression**:**

- **STEP 1:** Generate a dataset and download necessary packages.
- **STEP 2:** Splinter the dataset into test and training dataset.Training set - used to train the model.
  Testing set – describes the evaluation of the models.
- **STEP 3:** Visualization gives a better scope of interactivity of the algorithm to convey a betterunderstanding of the data set.
- **STEP 4:** Define a prediction value using logistic regression.

C. FLOWCHART

IV. RESULT

One of the common Covid-19 symptoms is fever. Almost 78% of the cases, fever was the common symptom but some people will not experience fever and some have no symptom at all. Fever will give rise to the body temperature above normal level (98.6°F). Many infections causes fever, but if the person has fever of 100.4°F or above, they should stay home and get a medical advice because this fever may be a early symptom of Covid-19. Using Logistic Regression, age and body temperature of the individuals are compared and the chances of affecting Covid-19 is predicted. In the above picture, the known output (know0/P) in the dataset may be positive or negative but the predicted values will be positive or negative by comparing the age and body temperature attributes. If the positive covid person has normal or low body temperature, he/she maybe negative in the future. If the negative covid person has high body temperature (>98.6°F), he/she maybe covid positive in the future.

V. CONCLUSION AND FURTHER WORK

In this paper, dataset incorporation, importing packages and visualization are performed in the Jupyter Notebook. Logical regression is used to predict the covid health status (positive/negative) of the people. According to WHO (World Health Organisation) Covid-19 a deadly respiratory illness has also the chances spreading viruses from animals to human. To have constant and feasible immunity every people should vaccinate themselves. Wearing mask and maintaining physical distance will protect from Corona virus.

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