DESIGN & ANALYSIS OF COVID-19 SYMPTOMS PREDICTION & PLASMA RECOMMENDATION BY GPS MAPPER

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Abstract: **The world is reworking in a digital era. However, the field of medicine was quite repulsive to technology. Recently, the advent of newer technologies like machine learning has catalyzed its adoption into healthcare. The blending of technology and medicine is facilitating a wealth of innovation that continues to improve lives. With the realm of possibility, machine learning is discovering various trends in a dataset and it is globally practiced in various medical conditions to predict the results, diagnose, analyze, treat, and recover. Machine Learning is aiding a lot to fight the battle against Covid-19. For instance, a face scanner that uses ML is used to detect whether a person has a fever or not. Similarly, the data from wearable technology like Apple Watch and Fit bit can be used to detect the changes in resting heart rate patterns which help in detecting corona virus. According to a study by the Hindustan Times, the number of cases is rapidly increasing. Careful risk assessments should identify hotspots and clusters, and continued efforts should be made to further strengthen capacities to respond, especially at sub-national levels. The core public health measures for the Covid-19 response remain, rapidly detect, test, isolate, treat, and trace all contacts. The work presented in this paper represents the system that predicts the number of corona virus cases in the upcoming days as well as the possibility of the infection in a particular person based on the symptoms. The work focuses on Linear Regression and SVM models for predicting the curve of active cases. SVM is least affected by noisy data, and it is not prone to over fitting. To diagnose a person our application has a certain question that needs to be answered. Based on this, the KNN model provides the maximum likelihood result of a person being infected or not. Tracking and monitoring in the course of such pandemic help us to be prepared.**

Index Terms **- Covid-19 Symptoms, Plasma Recommendation, SVM, KNN, Linear Regression Algorithms.**

I. INTRODUCTION

Corona virus disease (covid-19) is a newly identified corona virus that causes an infectious illness. the majority of persons infected with the covid-19 virus will have mild to moderate respiratory symptoms and will recover without needing any particular therapy. People over the age of 65, as well as those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer, are at a higher risk of developing serious illness. when an infected individual coughs or sneezes, the covid-19 virus transmits largely through droplets of saliva or discharge from the nose, thus respiratory etiquette is particularly crucial. there are no particular covid-19 vaccinations or therapies available at this time. however, several clinical trials exploring possible therapies are now underway. the severe acute respiratory syndrome coronavirus-2 (sars-cov-2), a contagious virus belonging to the corona viridian family of single-stranded, positive-sense rna viruses, causes covid-19, which stands for "corona virus disease-2019." sars-cov-2, like the influenza virus, targets the respiratory cells and lead symptoms such as cough, fever, tiredness, and shortness of breath. in December 2019, the covid-19 was first reported to be affecting human life in wuhan, Hubei province, china. since then, the covid-19 has grown throughout the globe like wildfire, with a presence in 213 nations and autonomous territories. the fast increase in the number of covid-19 events throughout the world has highlighted the necessity for quick actions to prevent the outbreak from becoming catastrophic. nevertheless, before examining potential technology solutions for covid-19 pandemic effect management, the system must first conduct a thorough examination of covid-19, including its clinical characteristics, diagnosis, treatment, and economic impact.

in wuhan city, hubei province, south china, 27 instances of unexplained pneumonia have been recorded since december 31, 2019. the chinese government and the world health organization (who) identified a novel coronavirus (2019-ncov) as the causal virus on january 7, 2020. this virus is related to the virus family that caused the severe acute respiratory syndrome (sars) outbreak in south china in 2002-2003. after 17 january 2020, the 2019-ncov spread quickly over most of mainland china, resulting in approximately 7000 infected cases by the end of january.the amount of cumulative cases of the 2019-cov in the first month has surpassed the entire number of sars cases in 2003, implying that this new virus has more infectivity than the sars virus. since about january 23,

2020, the chinese government has taken severe efforts to prevent the virus from spreading, including issuing public health warnings, temporarily halting public transportation between several major cities, and even placing the largest afflicted city under quarantine.

the absence of rigorous diagnosis criteria for the 2019-ncov is another reason. it is quite challenging to establish precise testing regime for a new virus in a timely manner. in fact, the 2019-ncov's symptoms are quite similar to those of the flu. this added to the difficulty of the assessment. last but not least, the lack of an epidemic detection and forecasting model negated the chance to halt the development of the pandemic from the outset.

II. LITERATURE REVIEW

Akhtaruzzaman M [1] This study examines how financial contagion occurs through financial and nonfinancial firms between China and G7 countries during the COVID-19 period. The empirical results show that listed firms across these countries, financial and non-financial firms alike, experience significant increase in conditional correlations between their stock returns. However, the magnitude of increase in these correlations is considerably higher for financial firms during the COVID-19 outbreak, indicating the importance of their role in financial contagion transmission.

Abdullah M. Alawadhi [2] This study investigates whether contagious infectious diseases affect stock market outcomes. As a natural experiment, we use panel data regression analysis to measure the effect of the COVID-19 virus, which is a contagious infectious disease, on the Chinese stock market. The findings indicate that both the daily growth in total confirmed cases and in total cases of death caused by COVID-19 have significant negative effects on stock returns across all companies.

Guido Alfani [3] This article provides an overview of recent literature on plagues and other lethal epidemics, covering the period from late Antiquity to ca. 1800. We analyze the main environmental and institutional factors that shaped both the way in which a plague originated and spread and its overall demographic and socioeconomic consequences. We clarify how the same pathogen shows historically different epidemiological characteristics, and how apparently similar epidemics could have deeply different consequences. We discuss current debates about the socioeconomic consequences of the Black Death and other plagues. We conclude with historical lessons to understand modern "plagues."

Mohsin Ali [4] The novel Corona virus disease (COVID-19) has quickly evolved from a provincial health scare to a global meltdown. While it has brought nearly half the world to a standstill it has affected the financial markets in unseen ways by eroding a quarter of wealth in nearly a month. This paper investigates the reaction of financial markets globally in terms of their decline and volatility as Corona virus epicenter moved from China to Europe and then to the US. Findings suggest that the earlier epicenter China has stabilized while the global markets have gone into a freefall especially in the later phase of the spread. Even the relatively safer commodities have suffered as the pandemic moves into the US.
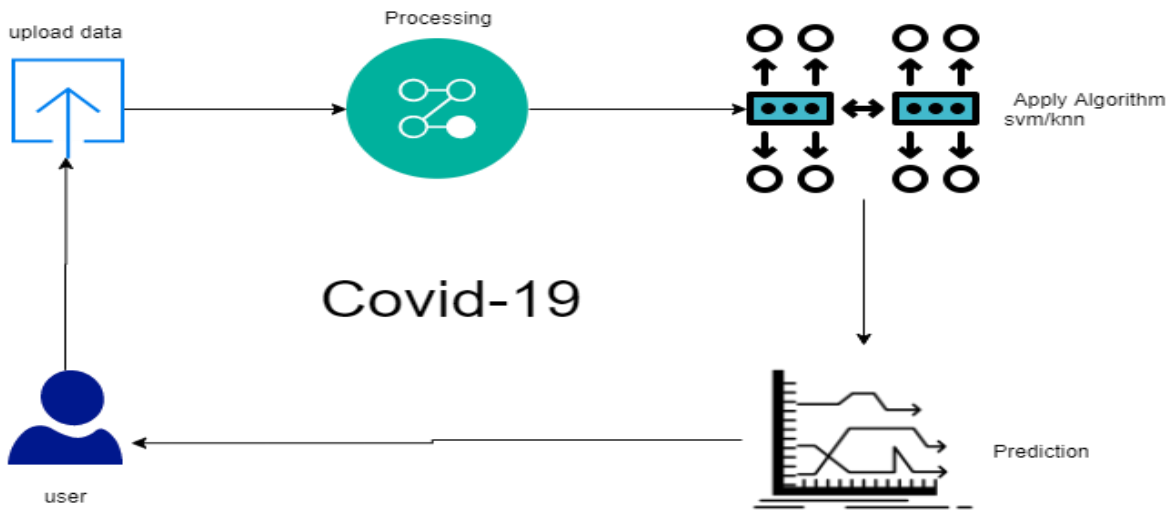
C Ambros [5] Through a survey of the literature on the economics of the corona virus (COVID-19) pandemic, this study explores the effects of the pandemic and proposes potential policy directions to mitigate its effects. Our survey reveals that adverse economic effects have been observed due to the COVID-19 pandemic in addition to fatalities. Furthermore, the survey indicates the need for greater coordination at national and international levels. This study concludes by suggesting coordination among monetary, macro prudential, and fiscal policies (trio) to mitigate the adverse economic effects of COVID-19. Finally, this study explores potential directions for future research.

Apergis N [6] This paper investigates the effect of the COVID-19 and oil prices on the US partisan conflict. Using daily data on world COVID-19 and oil prices, monthly data on the US Partisan Conflict index, and the MIDAS method, the finding suggests that both COVID-19 and oil prices mitigate US political polarization. The finding implies that political leaders aim low for partisan gains during stressful times.

Baker S.R [7] No previous infectious disease outbreak, including the Spanish Flu, has impacted the stock market as forcefully as the COVID-19 pandemic. In fact, previous pandemics left only mild traces on the U.S. stock market. We use text-based methods to develop these points with respect to large daily stock market moves back to 1900 and with respect to overall stock market volatility back to 1985. We also evaluate potential explanations for the unprecedented stock market reaction to the COVID-19 pandemic. The evidence we amass suggests that government restrictions on commercial activity and voluntary social distancing, operating with powerful effects in a service-oriented economy, are the main reasons the U.S. stock market reacted so much more forcefully to COVID-19 than to previous pandemics in 1918-19, 1957-58 and 1968.

III. PROPOSED METHODOLOGY

In the proposed system, system are creating an effective and easier way for the application to predict the corona virus attacks at the very earlier stages and can provide medication the patients to prevent the corona virus attack at the very beginning stages. Our application records the behavior of the patient and based on that it compares the data with the datasets collected by the corona virus attack events data and based on the Machine Learning using SVM and KNN algorithms , Deep learning models that use patient data to detect associations between many variables in order to learn to handle incoming information employ huge quantities of training data from coronal virus infection patients datasets to learn to interpret incoming information of a new patient to detect the corona virus attack of the patient along with the stages. Because of the earlier prediction, the patient can be saved from corona virus attack, which leads for improving the country's healthcare sector.

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IV. WORKING OF K-MEANS CLUSTERING ALGORITHM

The KNN algorithm is a sort of supervised machine learning method that may be used to solve both classification and regression predicting problems. However, in industry, it is mostly utilized to solve classification and prediction issues.

- **Lazy learning algorithm** − Because it does not have a specific training phase and uses all of the data for training while classifying, KNN is a lazy learning algorithm.

- **Non-parametric learning algorithm** − Because it makes no assumptions about the underlying data, KNN is also a non-parametric learning method.

The KNN method predicts the values of new data points using 'feature similarity,' which implies that the new data point will be assigned a value depending on how closely it resembles the points in the training set. With the aid of the steps below, we can grasp how it works. –

Step 1 − We need a dataset to implement any algorithm. As a result, we must load both training and test data at the first phase of KNN.

Step 2 − The value of K, i.e. the closest data points, must then be chosen. Any integer can be used as K.

Step 3 − For each point in the test data do the following −

- **3.1** − Calculate the distance between each row of training data and the test data using one of the following methods: Euclidean, Manhattan, or Hamming distance. The Euclidean technique is the most widely used method for calculating distance.

- **3.2** − Now, based on the distance value, sort them in ascending order.

- **3.3** − Next, it will choose the top K rows from the sorted array.

- **3.4** − Now, it will assign a class to the test point based on most frequent class of these rows.

Step 4 – End

In our project, we compare k values with train data sets utilising KNN methodologies such as Euclidean and Manhattan, where values are clustered based on the closest distance. We use the train data set to find the closest matches of exam choice to test data, and then use that information to forecast content values.

V. LINEAR REGRESSION

One of the most basic and widely used Machine Learning techniques is linear regression. It's a statistical technique for performing predictive modeling. Sales, salary, age, product price, and other continuous/real or numeric variables are predicted using regression analysis.

The linear regression technique demonstrates a linear relationship between such a dependent (y) variable and one or more unrelated (y) variables, thus the name. Because linear regression reveals a linear connection, it determines how the value of the variance in the dependent variable as the independent variable variable changes. The connection between the variables is represented by a sloping straight line in the regression analysis.

VI. SVM

Support Vector Machine (SVM) is a machine learning algorithm approach for solving classification or regression issues. It is, however, mostly used to address classification problems. Each data item is modeled as follows in n-dimensional space (where n is the number of features), with the pixel value being the SVM algorithm's value for a certain position. Then we locate the hyper plane that best differentiates the 2 classes to complete classification.

VII. RESULTS AND DISCUSSION

In this paper, system are creating an effective and easier way for the application to predict the corona virus attacks at the very earlier stages and can provide medication the patients to prevent the corona virus attack at the very beginning stages. Our application records the behavior of the patient and based on that it compares the data with the datasets collected by the corona virus attack events data and based on the Machine Learning using SVM and KNN algorithms , Deep learning models that use patient data to detect associations between many variables in order to learn to handle incoming information employ huge quantities of training data from coronal virus infection patients datasets to learn to interpret incoming information of a new patient to detect the corona virus attack of the patient along with the stages. Because of the earlier prediction, the patient can be saved from corona virus attack, which leads for improving the country's healthcare sector.

Fig 2: Covid Report Page.

VIII. CONCLUSION

Through getting rid of the unreliable records via objective evaluation, system provided epidemic prediction below exclusive situation with respect to outstanding-degree anti-epidemic degree and medical institution remedy represented with the aid of way of the two version parameters, i.e., contamination rate and removal price. The projections are likely to be useful in determining how to control the ongoing 2019-nCoV transmission in India. Scientific-service factors, such as improving diagnosis speed and hospitalization capacity, should be given specific emphasis in control techniques. In the long run, the severity of the 2019-nCoV might be kept to a minimum. The sensitivity of the variables also underlined the necessity of openness and transparency in exposing the data application to the general public fitness. It may be feasible to confirm and update this early COVID-19 projection when more information becomes available.

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