

COVID SAFETY MEASURES USING MACHINE LEARNING

¹Mr. Ghuge Akash D, ²Miss. Dighe Gayatri N, ³Miss. Kote Ashwini B, ⁴Miss. Wagh Jagruti A, ⁵Prof. Patil Pradeep A.

^{1,2,3,4}UG Students, ⁵Project Guide

¹Department of Computer Engineering,
SND College of Engineering and Research Centre, Yeola, India

Abstract: The Covid-19 outbreak has taken the world completely unawares, exposing the vulnerability of public health systems in coping with infectious pandemic. The current death toll of the pandemic is staggering, and it is the need of an hour to eradicate the virus at the earliest and prepare a system that stands tall to armor the world in case the future holds any unpredictable biological or health crisis of this scale. Since December 2019, Novel coronavirus disease has been shown an extensive impact on social, mental, personal, and economic fields throughout the world. In this pandemic situation, people are worried and interested to know what is going on in the upcoming days. Therefore, it is very important to provide relevant information about how many people are affected and will infect in near future. Moreover, they need to know how to spread different symptoms and prevention steps of this disease. This research work proposes a complete COVID-19 safety measures which helps people to defend against it. This is first of its kind application that uses machine learning to combat the need. Machine learning model to be built to deal with various safety measures. By using the technology, it alerts the people who are in need of it. The proposed approach will provide an intuitive way to understand the risk of being getting affected based on the immunization of respiratory system of an individual. The risk factor will provide a basis for personification and to take safety measures in this long-lasting pandemic situation.

Keywords: Covid-19, Machine learning, personification, privacy, prediction, symptoms.

I. INTRODUCTION

The Covid-19 outbreak has taken the world completely unawares, exposing the vulnerability of public health systems in coping with infectious pandemic.

[1] Since December 2019, Novel coronavirus disease has been shown an extensive impact on social, mental, personal, and economic fields throughout the world. In this pandemic situation, people are worried and interested to know what is going on in the upcoming days.

[2] Therefore, it is very important to provide relevant information about how many people are affected and will infect in near future. This research work proposes a complete COVID-19 safety measures which helps people to defend against it.

II. MOTIVATION

In this project we mainly work on Covid safety measures. As people should be aware about the diseases like covid and their safeties. So here we work on safety of people in individual level. Where a person can know about his/her current body status, what are the safeties he/she need to take, what is his/her covid status, how person can built his immunity by regulating his diet plan and many more things. We are using a machine learning technology to work on this project.

III. PROBLEM DEFINITION

With promising advancements made in the field of Science and Technology, we can curb the spread of the disease and trace all the contacts by using an appropriate Detection, Tracking and Alerting. Hence, we propose solutions to control the current havoc underlined by the assistance of latest technologies like machine learning algorithms like Random Forest. The process of identifying safety measures will be useful to prevent further spread of covid-19.

IV. LITERATURE SURVEY

This chapter contains the existing and established theory and research in this report range. This will give a context for work which is to be done. This will explain the depth of the system. Review of literature gives a clearness and better understanding of the exploration/venture. A literature survey represents a study of previously existing material on the topic of the report. This literature survey will logically explain this system.

A Detection, Tracking and Alerting System for Covid-19 using Geo-Fencing and Machine Learning

The experimental results show that the App is success fully able to detect the presence of Covid based on user symptoms and create geophone around the user to detect and track the user as and when the user steps out from the safety zone of his House.

COVID-19: Update, Forecast and Assistant – An Interactive Web Portal to Provide Real Time Information and Forecast COVID-19 Cases in Bangladesh

In this paper, an informative web portal has been developed which is not only provided upcoming aspects but also predicted COVID-19 cases in recent days.[3] Hence, it generates short-time forecasting curve and estimates these conditions of the next couple of days

Face Mask Detection Using Open-CV

With the increasing number of COVID cases all over the world, a system to replace humans to check masks on the faces of people is greatly needed. This system satisfies that need.[4] This system can be employed in public places like railway stations and malls.

Travelers-Tracing and Mobility Profiling Using Machine Learning in Railway Systems

Introduced a new strategy to address crowded train carriages, stations, and platforms that are highly susceptible to spreading the disease supported by mobility prediction accuracies using ML classifiers.[5] Our strategy also exploits the technologies including Wi-Fi, RFID, Bluetooth, and UWB to effectively track daily train travelers with different age groups in the LUO network

Personification and Safety during pandemic of COVID19 using Machine Learning

In this research, it is evident that machine learning models are well learnable with the knowledge which is provided to them through embedded media dataset and it supports the claims of subject matter experts in personification. Given the data about list of symptoms as expected by this research, pertained models can provide the safety score with more than 95 percent accuracy.

Machine learning screening of Covid-19 patients based on X-Ray images for imbalanced classes

This work emphasized the utility of using transfer learning approaches when the dataset used was limited to detect COVID-19 images

Large Scale Scientific Computing in the Fight against COVID-19

It has been proved invaluable tools for public health officials and policymakers struggling to contain the spread of the virus and to ensure the availability of critical care facilities to support patients experiencing the most devastating effects of the disease.

V. PROPOSED SYSTEM

In our proposed system we are analyzing the facts and figures about COVID disease and identifying the safety measures which will prevent further increase in spread and as well provide better life balance to people. The historical dataset will be analyzed by using machine learning algorithm. Then the data pre-processing is used to transform the raw or inconsistent data into understandable format, here Decision Tree is used for training and classification of data. In this system User can access the web application which provides safety measures information.

VI. METHODOLOGY AND ALGORITHM

The algorithm in which every operation is uniquely defined is called deterministic algorithm. The algorithm in which every operation may not have unique result, rather there can be specified set of possibilities for every operation, such algorithms are called Non deterministic algorithms. Non deterministic means no particular rule is followed to make guess.

• ALGORITHM

RANDOM FOREST ALGORITHM

Random forest is popular machine learning algorithm that belong to supervised learning technique. It can be used for both classification regression problem in ML. it is based on the concept of ensemble learning, Which is process of combining multiply classifier to solved complex problem and to improve the performance of the model.

STEPS FOR RANDOM FOREST AALGORITHM.

Step 1

In Random forest 'n' number of random records are taken from the data set having 'k' number of records.

Step 2

Individual decision tree are constructed for each sample.

Step 3

Each decision tree will generate an output.

VII. MATHEMATICAL MODEL

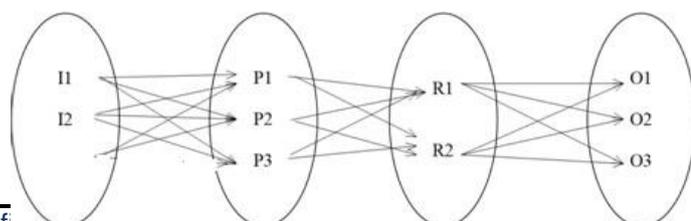
Let 'S' be system having sets of parameter Set

$$S = \{ \{ I \}, \{ R \}, \{ P \}, \{ O \} \}$$

I is set of all inputs giving to system

R is a set of Rules that drive your input set.

P is set of all processes in system.



O is set of output expected from system.
 Output (O) :{ O1, O2, O3}
 Where,
 O1 = COVID Prediction
 O2 = Dataset Modification
 O3 = Lifestyle Description.

VIII. SYSTEM ARCHITECTURE

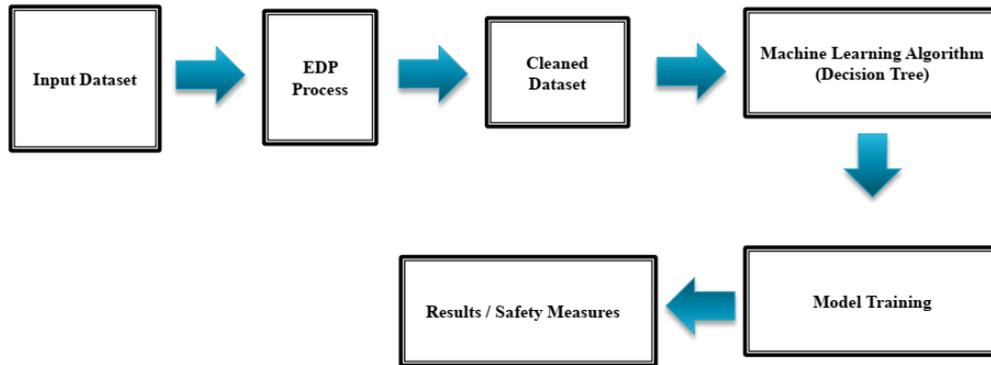


Fig -1: System Architecture Diagram

IX. SNAPSHOT

Covid-19 Safety using Machine Learning..
[My Account](#) [Train Data](#) [Important Symptoms](#) [Covid Prediction](#) [Diet Plan](#) [Logout](#)

Enter Patient Details

AGE:

Gender:

Is Pain in your body (last 5 days):

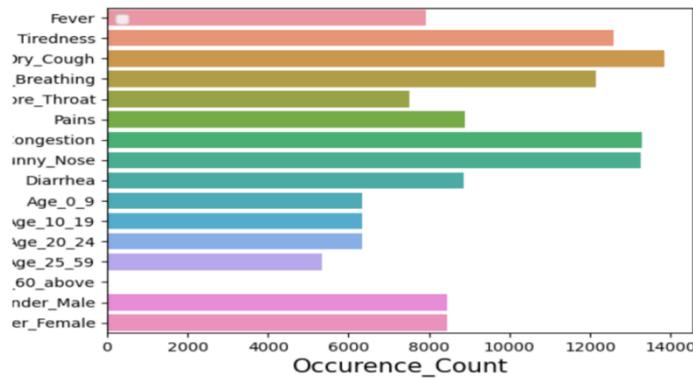
Fever(last 5 days):

Have you contacted any covid patient in last 5 days:

Throat Pain:

Have you Vaccinated:

Important Symptoms
Graph of Indicator vs Occurrence_Count of patients with Covid



Using Machine Learning

Registered Users Upload Data View Data Symptoms Analysis Model Accuracy

Covid symptoms based analysis...

Random Forest Classifier :75.09574915824916

Train Data

Patient Name	Age	Address	Category	First Dose of Vac.
SONAWANE RUPALI SUBHASH			VACCINATION	01/09/2021
BHAGWAT AVINASH NANASAHEB			VACCINATION	16/09/2021
GADEKAR GOKUL BHASKARRAO			VACCINATION	31/07/2021
PRWAR REKHA DHYGAN			VACCINATION	01/09/2021
JADHAV BHARTI SUNIL			VACCINATION	27/07/2021
KULKARNI MANJUSHRI RAJENDRA			VACCINATION	19/09/2021
RAJESH KUMAR			VACCINATION	29/09/2021
AJINKYA SANJAY BHANGALI			VACCINATION	02/01/2022
DHIRAWANI NIKITA VISHAL			VACCINATION	07/09/2021
SUTAR RAVINDRA CHANDRAKANT			VACCINATION	28/08/2021
BHANSALI MAYURI SANJAY			VACCINATION	27/07/2021
MATE SHARAD DHIRUBHAI			VACCINATION	22/08/2021
BAVEKAR ANUSHKA VIRAS			VACCINATION	27/08/2021
TARDE NILESH RAMESH			VACCINATION	31/07/2021
DHETE SAURASH BALASAHEB			VACCINATION	21/08/2021
SUSHIL RAVINDRA SHARMA			VACCINATION	14/09/2021
CHAUDHARI SWATI GORAKH			VACCINATION	07/08/2021
MORE PUNAM RAJENDRA			VACCINATION	27/07/2021

X. FUTURE SCOPE

As we are working on the covid safety measures using machine learning technology. As a dataset increase accuracy of project will be increases more. It'll be not only for covid but also for the diseases or pandemic like covid. So in future if such a pandemic occurs then people will be able to fight with the situation.

ADVANTAGES

- Disease is detected at early stage so that effective measures can be applied.
- Users can get the information about current status and safety measures.
- Preventive healthcare measures.
- Easy to use.

APPLICATIONS

- Hospitals
- Medical Domain
- Society

XI. CONCLUSION

As health care facilities are limited in number in developing countries as well as the ecosystem is not well prepared to defend against in developed countries, the spread of the pandemic can claim thousands of lives. The way to address the situation proactive measure to understand the health of an individual based on his medical status, history etc. Based on this data, it is evident from research that one can get a safety measure. These risk factors will raise an alarm to prepare him based on preconditions and to achieve personification. This can help to observe and identify the disease well before to reduce the mortality rate even further than today.

XII. Acknowledgment

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