CoviTech - Covid Detection and Control

A Project Report

Submitted by

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INTRODUCTION

SCOPE

Our project offers users the ability to upload their CT scans and discover if they are infected with the virus in less than a minute. We built a user-friendly website that is easily navigable and ensures a fast and efficient output. Our Deep Learning model performs well in experiments with randomly picked CT scans, according to the results. This project could aid clinical practitioners in manual screening.

PURPOSE

Machine learning (ML) is increasingly being used in sectors and has majorly benefitted the healthcare sector. Deep learning, a new machine learning method based on a convolutional neural network, was introduced in 2012. Deep-learning methods allow computational models with several processing layers to learn data representation over several abstraction layers using deep-learning techniques. They use images, words, and audio to train a computer model to perform categorization tasks. Deep-learning models feature high accuracy and can improve human output in certain instances. Given COVID-19’s exponential spread, detecting it is currently one of the world's most important goals. The incidence of COVID-19 dispersion over the world is investigated in this project. Using real-world datasets, we describe an artificial-intelligence strategy based on a deep convolutional neural network (CNN) to detect COVID-19 patients on the basis of their CT scan image.

DESCRIPTION OF MODULES

We created a platform that offers an extraordinary and accurate system for the detection and diagnosis of COVID-19. Firstly, we'll be introducing the languages and frameworks used.

We chose the pages and features for our website by keeping in mind the user's perspective and what the user will find useful related to COVID-19. Other than the home page we decided to include a news page, resources page and a model page.
The homepage consists of information about us as well as the services we offer. This page allows the user to find information about us and creates trust for our website. It also provides quick links to visit the other pages so the user can access the various services available on our website. The homepage has a slider and multiple images to create a better UI experience and give a calming and professional feel to our user.

The news page can be accessed easily by the user and it gives the information about vaccine doses delivered around the world as well as top articles related to Covid-19 news around the world. We have also embedded videos which are not only trending but very informative. This page will aim to give the user a complete picture of the covid situation around the world and make the user feel equipped with all the information related to this pandemic.

The resources page is essential as it is where we have compiled our recommended covid resources such as hospitals which are treating COVID-19, hotels which are allowing quarantine and vaccination centres. The user will be able to select the area where they want to see these resources and they will be directed to our recommended hospital, hotel and vaccination centre in that area.

The model is the most unique part of our website where anyone visiting our site can upload a scan of their lungs and our model will determine with decent accuracy if they are likely to have COVID-19. We will store the user data if the user uses this feature so we have it in our records.

This feature will allow users to get an idea about their health before they can hear back from hospitals which at this point in time are packed and are busy with critical covid patients.

SOFTWARE/APIs /DATABASE

Software

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. HTML is a computer language used to create websites. These websites can then be viewed by anyone else connected to the Internet. It is relatively easy to learn, with the basics being accessible to most people in one sitting; and quite powerful in what it allows you to create. It is constantly undergoing revision and evolution to meet the demands and requirements of the growing Internet audience under the direction of the organisation charged with designing and maintaining the language.

Bootstrap is the popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website. Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website. It is absolutely free to download and use. It is a front-end framework used for easier and faster web development. It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many others. It can also use JavaScript plugins. It facilitates you to create responsive designs. Bootstrap allows for rapid, responsive development that is consistent and well supported by the development and design community.

With the increasing popularity of the web, some new web technologies emerged and introduced dynamics to web applications, in comparison to HTML, as a static programming language. **JavaScript** is the language that provides a dynamic web site which actively communicates with users. JavaScript is used in today's web applications as a client script language and on the server side. The JavaScript language maintains a readable code.

Database

PHPmyadmin is used to access databases and create customer databases to store information connected to a website. This is an open source administration tool for MySQL. It is primarily used by writing in PHP. We connect the database in our PHP files and then run MySQL commands to interact with the database. We are able to store, retrieve data from the database and table we created.

A database is a structured collection of data and **MySQL** is used as a relational database management system based on structured query language (SQL). It is very popular as it helps in accessing and managing databases.

Model

Technology	Reason
Keras	Preprocessing, ResNet50, Early Stopping, Model Checkpoint
Tensorflow	Generating GRAD-CAM
Python libraries(os, shutil, glob, pandas, numpy)	Work with paths/files/dataset

Initially, all the images were split into a train test folder. ImageDataGenerator from the Keras library was used for image augmentation. The model was compiled through Res-Net50 while using 'Adam' as the optimizer. Categorical cross entropy was used as the loss function (the data was categorical). While training the model, EarlyStopping and a dropout layer was introduced to prevent overfitting and overtraining. To visualize the Region of Interest a heat map was generated through Gradient Class Activation Map, by taking the gradient of the classes with respect to the final convolutional layer and then weighing it against the output of the layer.

CODE SNIPPETS

```
    <div class="container">
        <div class="row d-flex align-items-center">
            <div class="col-xl-6 offset-xl-1 col-lg-6 offset-lg-1 col-md-7 offset-md-1">
                <div class="header-info">
                    <span>"Let's Fight this Pandemic Together! Make sure you get vaccinated."</span>
                </div>
            </div>
            <div class="col-xl-5 col-lg-5 col-md-4">
                <div class="header-top-right-btn f-right">
                    <a href="modelpage.html" class="btn">Check</a>
                </div>
            </div>
        </div>
    </div>
</div>
<!-- menu-area -->
<div class="header-menu-area">
    <div class="container">
        <div class="row">
            <div class="col-xl-3 col-lg-3 col-md-5 d-flex align-items-center">
                <div class="logo">
                    <a href="index.html"><img src="img/logo/logo.png" alt=""></a>
                </div>
            </div>
            <div class="col-xl-9 col-lg-9 col-md-9">
                <div class="header__menu f-right">
                    <nav id="mobile-menu">
                        <ul>
                            <li><a href="index.html">About</a>
                            </li>
                            <li><a href="news.html">News</a>
                            </li>
                            <li><a href="resources.html">Resources</a>
                            </li>
                        </ul>
                    </nav>
                </div>
```

```
                </div>
                <div class="col-12">
                    <div class="mobile-menu"></div>
                </div>
            </div>
        </div>
    </div>
</header>
<!-- header end -->

<main>
    <!-- hero-area start -->
    <section class="hero-area">
        <div class="hero-slider">
            <div class="slider-active">
                <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img1.jpg" style="backg
                    <div class="container">
                        <div class="row">
                            <div class="col-xl-6 col-lg-8 col-md-10">
                                <div class="hero-text">
                                    <div class="hero-slider-caption ">
                                        <h5 data-animation="fadeInUp" data-delay=".2s">Stay Updated.</h5>
                                        <h1 data-animation="fadeInUp" data-delay=".4s">Covid News at Your Fingertips.</h1>
                                        <p data-animation="fadeInUp" data-delay=".6s">Stay up to date by finding all the important Co
                                    </div>
                                    <div class="hero-slider-btn">
                                        <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
                                    </div>
                                </div>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img2.jpg" style="backg
                    <div class="container">
                        <div class="row">
                            <div class="col-xl-6 col-lg-8 col-md-10">
```

```
                </div>
                <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img2.jpg" style="backg
                    <div class="container">
                        <div class="row">
                            <div class="col-xl-6 col-lg-8 col-md-10">
                                <div class="hero-text">
                                    <div class="hero-slider-caption ">
                                        <h5 data-animation="fadeInUp" data-delay=".2s">Trusted Resources.</h5>
                                        <h1 data-animation="fadeInUp" data-delay=".4s">Find Doctors & Vaccination Centres.</h1>
                                        <p data-animation="fadeInUp" data-delay=".6s">Filter and locate doctors or vaccination centre
                                    </div>
                                    <div class="hero-slider-btn">
                                        <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
                                    </div>
                                </div>
                            </div>
                        </div>
                    </div>
                    <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img3.jpg">
                        <div class="container">
                            <div class="row">
                                <div class="col-xl-6 col-lg-8 col-md-10">
                                    <div class="hero-text">
                                        <div class="hero-slider-caption ">
                                            <h5 data-animation="fadeInUp" data-delay=".2s">Connecting Doctors with Machines.</h5>
                                            <h1 style="color: white"  data-animation="fadeInUp" data-delay=".4s">Accurate Detection at h
                                            <p data-animation="fadeInUp" data-delay=".6s">Use our well trained ResNet Covid Detection mod
                                        </div>
                                        <div class="hero-slider-btn">
                                            <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
                                        </div>
                                    </div>
                                </div>
                            </div>
                        </div>
```

```
        </div>
    </section>
    <!-- hero-area end -->
    <!-- about-area start -->
    <section class="about-area pt-120 pb-90">
        <div class="container">
            <div class="row">
                <div class="col-xl-5">
                        <div class="about-front-img">
                            <img src="img/about/about-img.jpg" alt="">
                        </div>
                        <br>
                        <br>
                </div>
                <div class="col-xl-6 col-lg-7">
                    <div class="about-right-side pt-55 mb-30">
                        <div class="about-title mb-20">
                            <h5>About</h5>
                            <h1>Why Us?</h1>
                        </div>
                        <div class="about-text">
                            <p>We are a group of young and motivated students, who are inspired to bring about a positive change by b
                            <br>
                            <p>The lack of quality knowledge and free resources, drove us to come up with an innovative solution to m
                            <br>
                            <p>Do connect with us on our social media platforms and feel free to reach us. <br><br> <i class="fa fa-e
                            <br>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </section>
    <!-- about-area end -->
    <!-- services-area start -->
    <section class="servcies-area gray-bg pt-115 pb-90">
```

```
                    </div>
                </div>
            </div>
        </div>
    </div>
</section>
<!-- about-area end -->
<!-- services-area start -->
<section class="servcies-area gray-bg pt-115 pb-90">
    <div class="container">
        <div class="row">
            <div class="col-xl-8 offset-xl-2 col-lg-10 offset-lg-1">
                <div class="section-title text-center pos-rel mb-75">
                    <div class="section-text pos-rel">
                        <h5 style="color: dimGrey;">Services</h5>
                        <h1>What All Do We Offer?</h1>
                    </div>
                    <div class="section-line pos-rel">
                        <img src="img/shape/section-title-line.png" alt="">
                    </div>
                </div>
            </div>
        </div>
        <div class="row">
            <div class="col-xl-4 col-lg-6 col-md-6">
                <div class="service-box text-center mb-30">
                    <div class="service-thumb">
                        <img src="img/services/service1.png" alt="" height="140px" width="190px">
                    </div>
                    <div class="service-content">
                        <h3><a href="#">Latest News</a></h3>
                        <p>We carefully gather daily news regarding Covid-19 and post it in this section.</p>
                        <a class="service-link" href="news.html">Read More</a>
                    </div>
                </div>
            </div>
```

```
<section class="about-area pt-115 pb-80">
    <div class="container">
        <div class="row pt-120">
            <div class="col-xl-4 col-lg-4 col-md-6">
                <div class="single-couter counter-box counter-box-white text-center mb-30">
                    <img src="img/counter/counter-icon-7.png" alt="">
                    <h1><span class="theme-color counter">6.84</span>+</h1>
                    <h6 class="green-color pb-20">Billion Doses</h6>
                    <div class="counter-text mt-10">
                        <p> have been administered globally.</p>
                    </div>
                </div>
            </div>
            <div class="col-xl-4 col-lg-4 col-md-6">
                <div class="single-couter counter-box counter-box-white text-center mb-30">
                    <img src="img/counter/counter-icon-83.png" alt="">
                    <h1><span class="theme-color counter">48.5</span>+</h1>
                    <h6 class="green-color pb-20">% of the world population</h6>
                    <span class="counter-shpae"></span>
                    <div class="counter-text mt-10">
                        <p>has received at least one dose of a COVID-19 vaccine.</p>
                    </div>
                </div>
            </div>
            <div class="col-xl-4 col-lg-4 col-md-6">
                <div class="single-couter counter-box counter-box-white text-center mb-30">
                    <img src="img/counter/counter-icon-9.png" alt="">
                    <h1><span class="theme-color counter">25.52</span>+</h1>
                    <h6 class="green-color pb-20">Million doses</h6>
```

```
                    </div>
                    <div class="section-line pos-rel">
                        <img src="img/shape/section-title-line.png" alt="">
                    </div>
                </div>
            </div>
        </div>
    </div>
    <div class="row">
        <div class="col-xl-6 col-lg-6 col-md-12">
            <iframe width="575" height="300" src="https://www.youtube.com/embed/q8sDN9yMmks"
            title="YouTube video player" frameborder="0" allow="accelerometer; autoplay;
            clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
        </div>
        <div class="col-xl-6 col-lg-6 col-md-12">
            <iframe width="575" height="300" src="https://www.youtube.com/embed/9XZOEGJPPTk"
            title="YouTube video player" frameborder="0" allow="accelerometer; autoplay;
            clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
        </div>
        <div class="col-xl-6 col-lg-6 col-md-12">
            <iframe width="575" height="300" src="https://www.youtube.com/embed/4qFQ1UPFicw" title="YouTube v
            frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media;
            gyroscope; picture-in-picture" allowfullscreen></iframe>
        </div>
        <div class="col-xl-6 col-lg-6 col-md-12">
            <iframe width="575" height="300" src="https://www.youtube.com/embed/51TdJJ_kzUY"
            title="YouTube video player" frameborder="0" allow="accelerometer;
            autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture"
            allowfullscreen></iframe>
        </div>
```

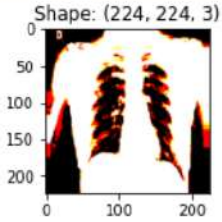
```
<section class="hero-area">
    <div class="hero-slider">
        <div class="slider-active">
            <div class="single-slider slider-height slider-height-2 d-flex align-items-center"
                data-background="img/slider/Doctor.jpg">
                <div class="container">
                    <div class="row align-items-center">
                        <div class="col-xl-6 col-lg-6 col-md-10">
                            <div class="hero-text hero-text-2 pt-35">
                                <div class="hero-slider-caption hero-slider-caption-2">
                                    <h5 class="white-color" data-animation="fadeInUp" data-delay=".2s">We are
                                        here for your care.</h5>
                                    <h1 class="white-color" data-animation="fadeInUp" data-delay=".4s">Best
                                        Resources In Your Area</h1>
                                </div>
                                <div class="hero-slider-btn">
                                    <a data-animation="fadeInLeft" data-delay=".6s" href="index.html"
                                        class="btn btn-icon btn-icon-blue ml-0"><span>+</span>about us</a>
                                </div>
                            </div>
                        </div>
                        <div class="col-xl-5 offset-xl-1 col-lg-6 col-md-12">
                            <div class="slider-right-2">
                                <div class="caregive-box">
                                    <div class="search-form">
                                        <span class="sub-heading">We are here for you</span>
                                        <h3>Find a Care Giver Near You </h3>
```

```
                                        <div class="col-xl-12 mb-35">
                                            <div class="inner caregive-btn text-center">
                                                <div class="dropdown">
                                                    <div class="inner caregive-btn text-center">
                                                        <button class="btn gray-btn-border">Pick Area</button>
                                                    <div class="dropdown-content">
                                                        <a href="Andheri.html">Andheri</a>
                                                        <a href="Bandra.html">Bandra</a>
                                                        <a href="Goregaon.html">Goregaon</a>
                                                    </div>
```

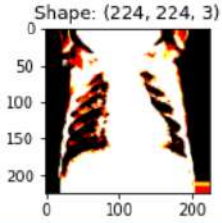
```
covid_images = pd.read_excel(ROOT_DIRECTORY+"/COVID.metadata.xlsx")
opacity_images = pd.read_excel(ROOT_DIRECTORY+"/Lung_Opacity.metadata.xlsx")
normal_images = pd.read_excel(ROOT_DIRECTORY+"/Normal.metadata.xlsx")
pneumonia_images = pd.read_excel(ROOT_DIRECTORY+"/Viral Pneumonia.metadata.xlsx")
frames_all = [covid_images.head(4), opacity_images.head(4), normal_images.head(4), pneumonia_images.head(4)]
result_all = pd.concat(frames_all)
result_all
```

	FILE NAME	FORMAT	SIZE	URL
0	COVID-1	PNG	256*256	https://sirm.org/category/senza-categoria/covi...
1	COVID-2	PNG	256*256	https://sirm.org/category/senza-categoria/covi...
2	COVID-3	PNG	256*256	https://sirm.org/category/senza-categoria/covi...
3	COVID-4	PNG	256*256	https://sirm.org/category/senza-categoria/covi...
0	Lung_Opacity-1	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
1	Lung_Opacity-2	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
2	Lung_Opacity-3	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
3	Lung_Opacity-4	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
0	NORMAL-1	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
1	NORMAL-2	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
2	NORMAL-3	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
3	NORMAL-4	PNG	256*256	https://www.kaggle.com/c/rsna-pneumonia-detect...
0	Viral Pneumonia-1	PNG	256*256	https://www.kaggle.com/paultimothymooney/chest...
1	Viral Pneumonia-2	PNG	256*256	https://www.kaggle.com/paultimothymooney/chest...
2	Viral Pneumonia-3	PNG	256*256	https://www.kaggle.com/paultimothymooney/chest...
3	Viral Pneumonia-4	PNG	256*256	https://www.kaggle.com/paultimothymooney/chest...

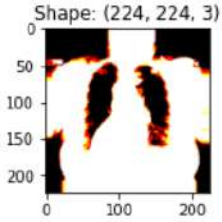
```
Clipping input data to the v
```




```
Clipping input data to the v
```

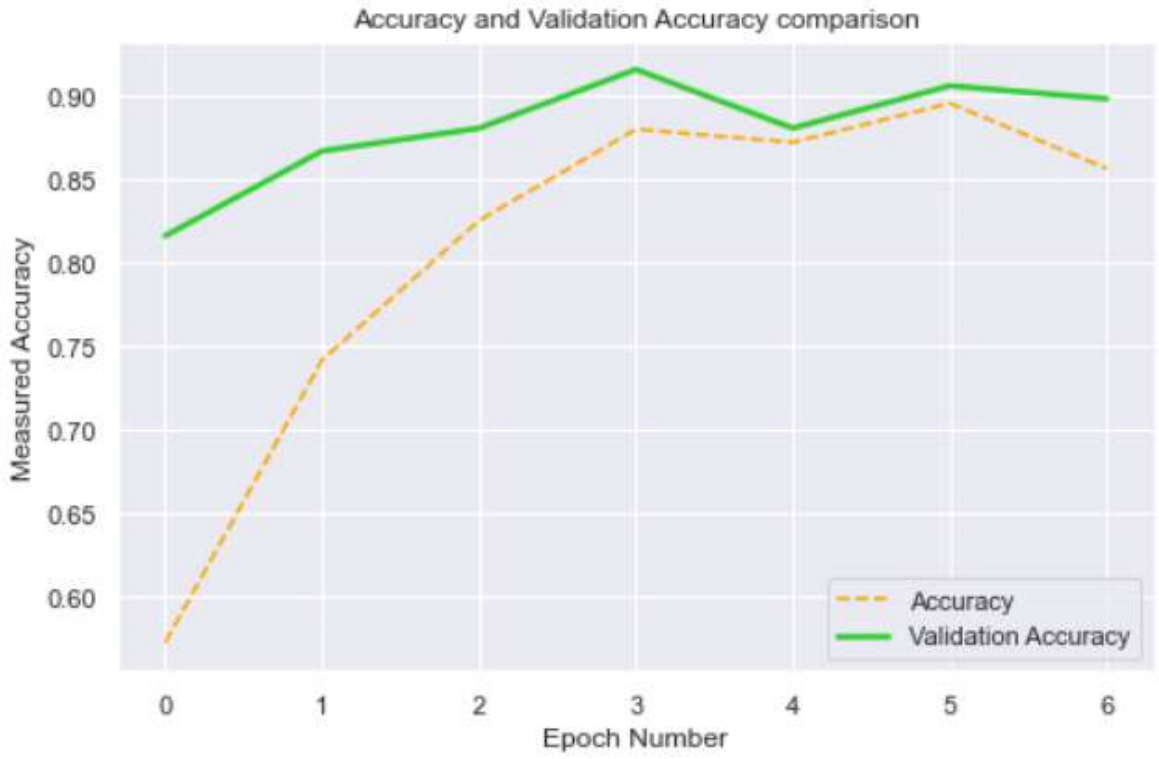



```
Clipping input data to the v
```




```
Clipping input data to the v
```

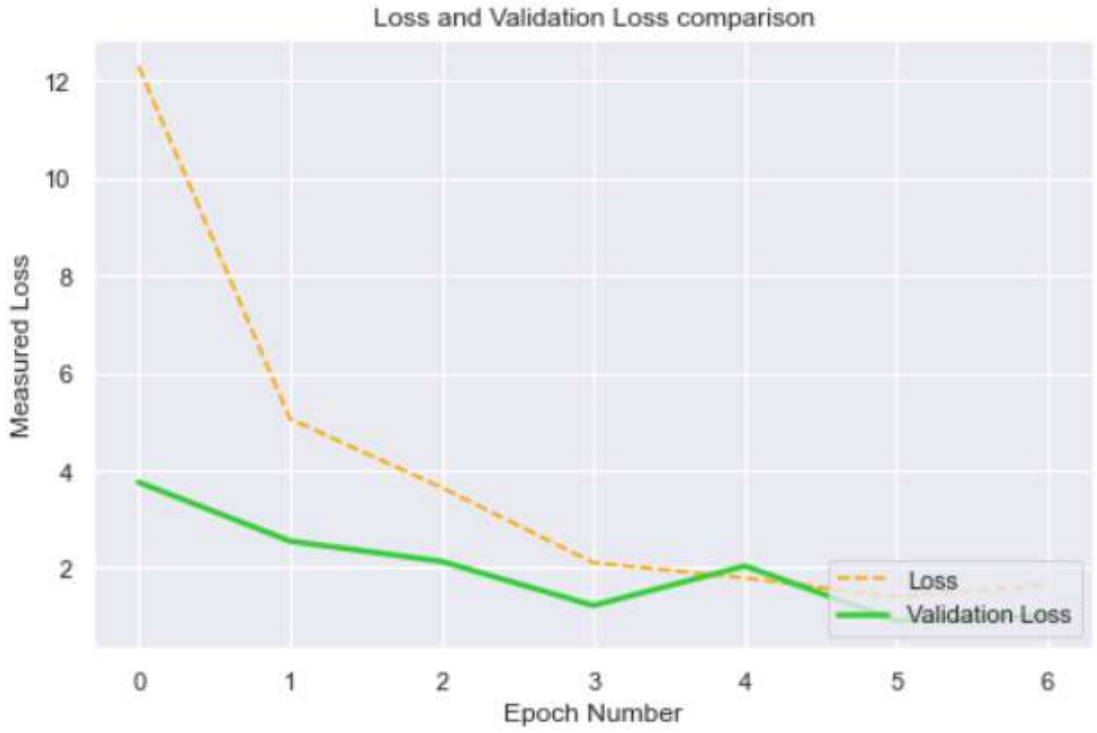
```
import seaborn as sns
sns.set()
plt.figure(1,figsize=(8, 5))
plt.plot(h['accuracy'], '--b', c = "orange")
plt.plot(h['val_accuracy'], c = "limegreen", linewidth=2.5)
plt.title("Accuracy and Validation Accuracy comparison")
plt.xlabel("Epoch Number")
plt.ylabel("Measured Accuracy")
plt.legend(["Accuracy", "Validation Accuracy"], loc ="lower right")
plt.show()
```



]:
```
#Accuracy on Test Dataset
test_accuracy = model.evaluate_generator(generator= test)[1]
print("Test Accuracy: "+str(test_accuracy))
print("Test Accuracy Percent: "+str(round(test_accuracy,4)*100)+"%")
```

```
Test Accuracy: 0.9100000262260437
Test Accuracy Percent: 91.0%
```

]:
```
import seaborn as sns
sns.set()
plt.figure(1,figsize=(8, 5))
plt.plot(h['loss'], '--b', c = "orange")
plt.plot(h['val_loss'], c = "limegreen", linewidth=2.5)
plt.title("Loss and Validation Loss comparison")
plt.xlabel("Epoch Number")
plt.ylabel("Measured Loss")
plt.legend(["Loss", "Validation Loss"], loc ="lower right")
plt.show()
```

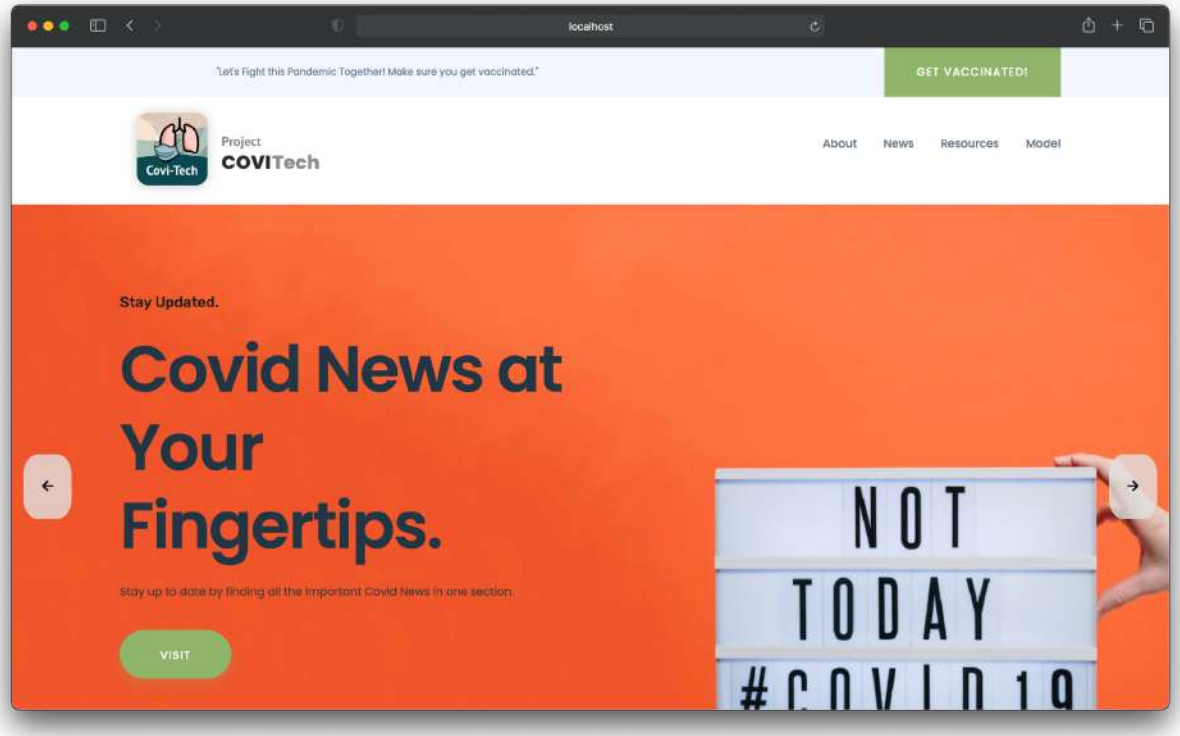


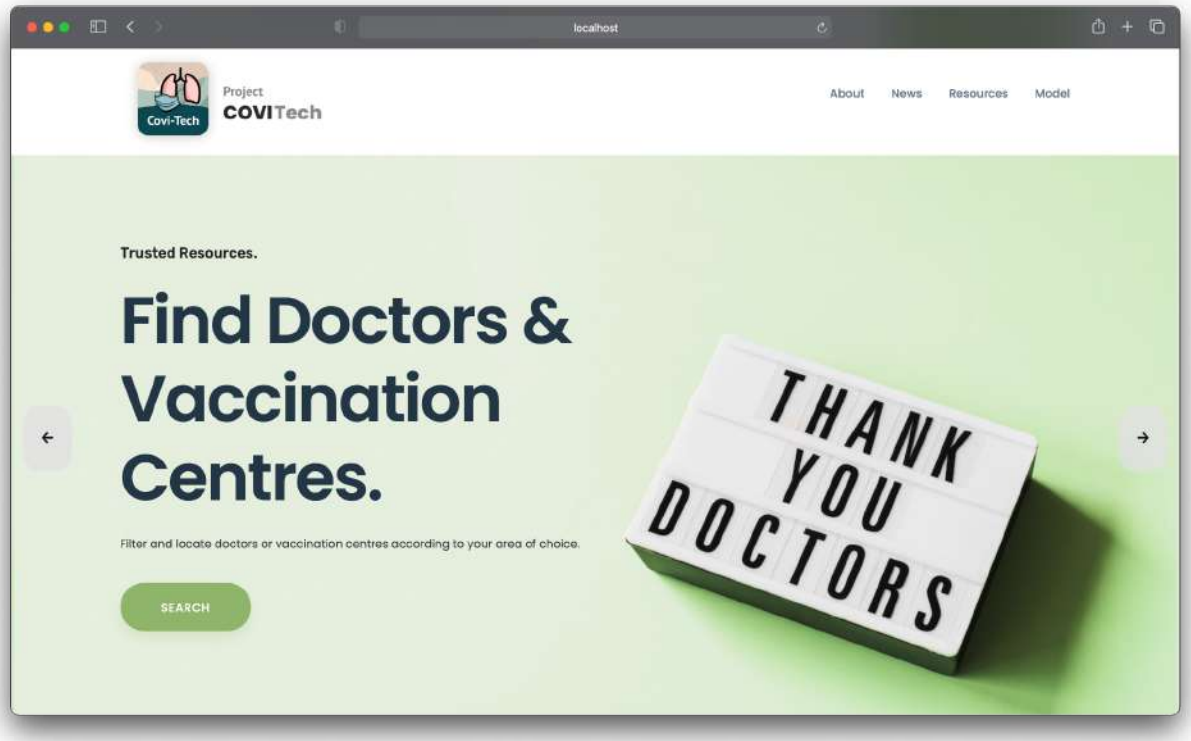
```
Detected Result: Covid
Covid Guarentee Percent: 99.955%
Not Covid Guarentee Percent: 0.0563%
```

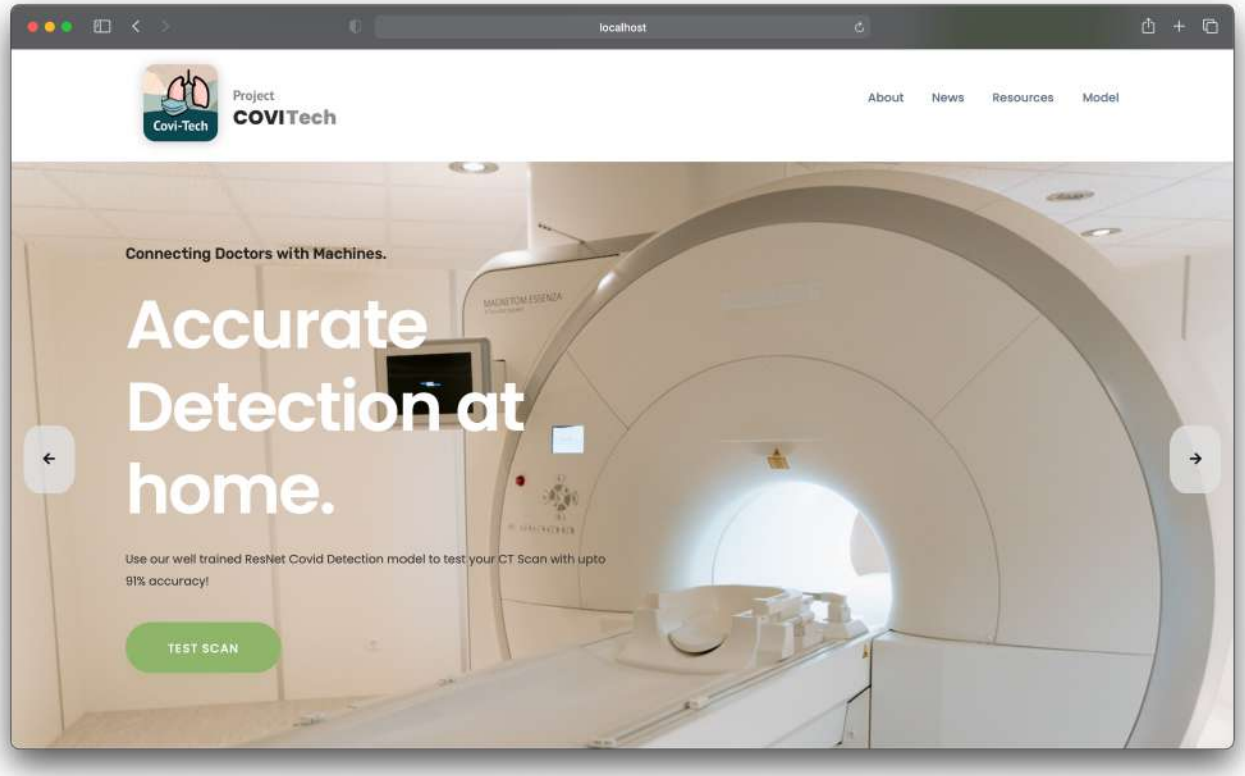
Result: Covid, Guarentee %: 99.95%

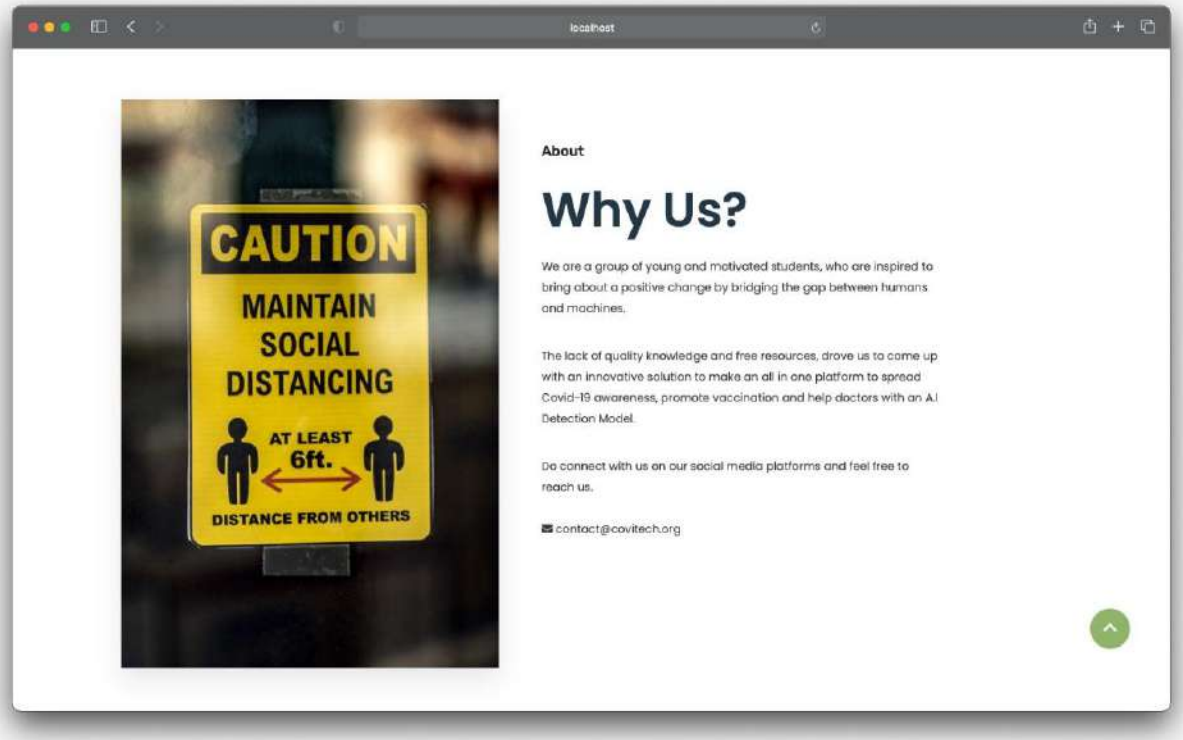
FRONT END

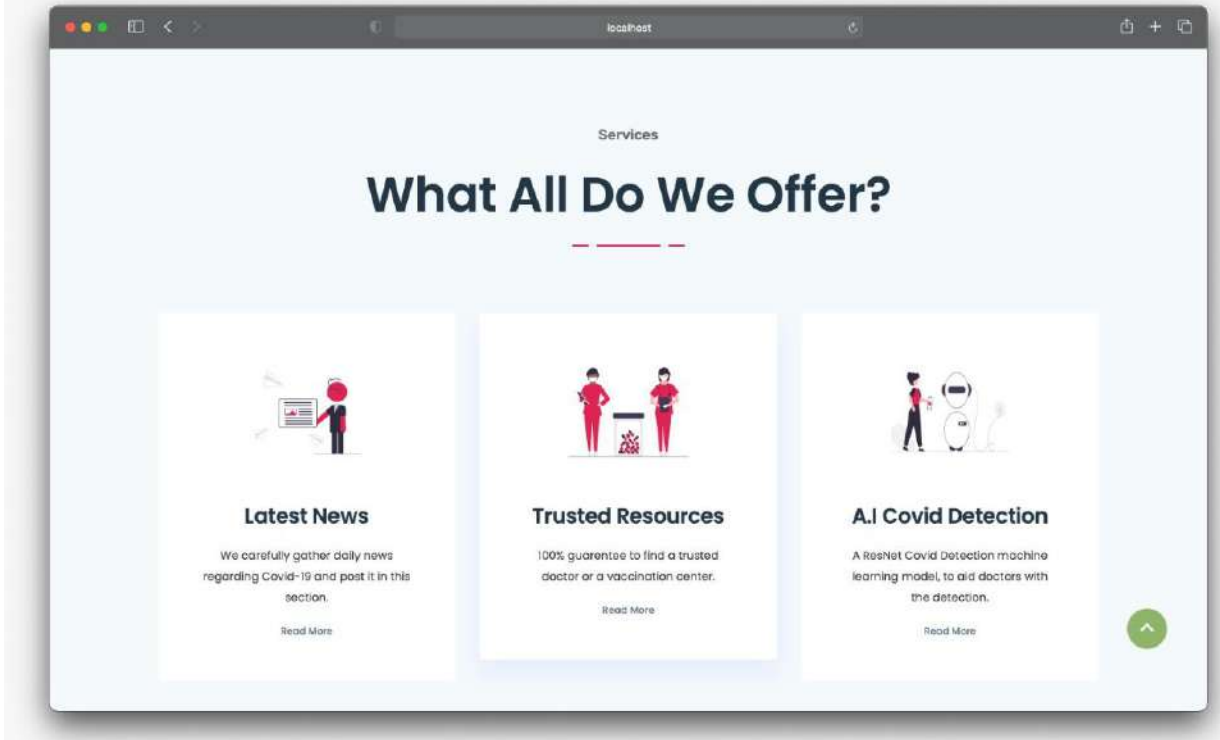
Home Page

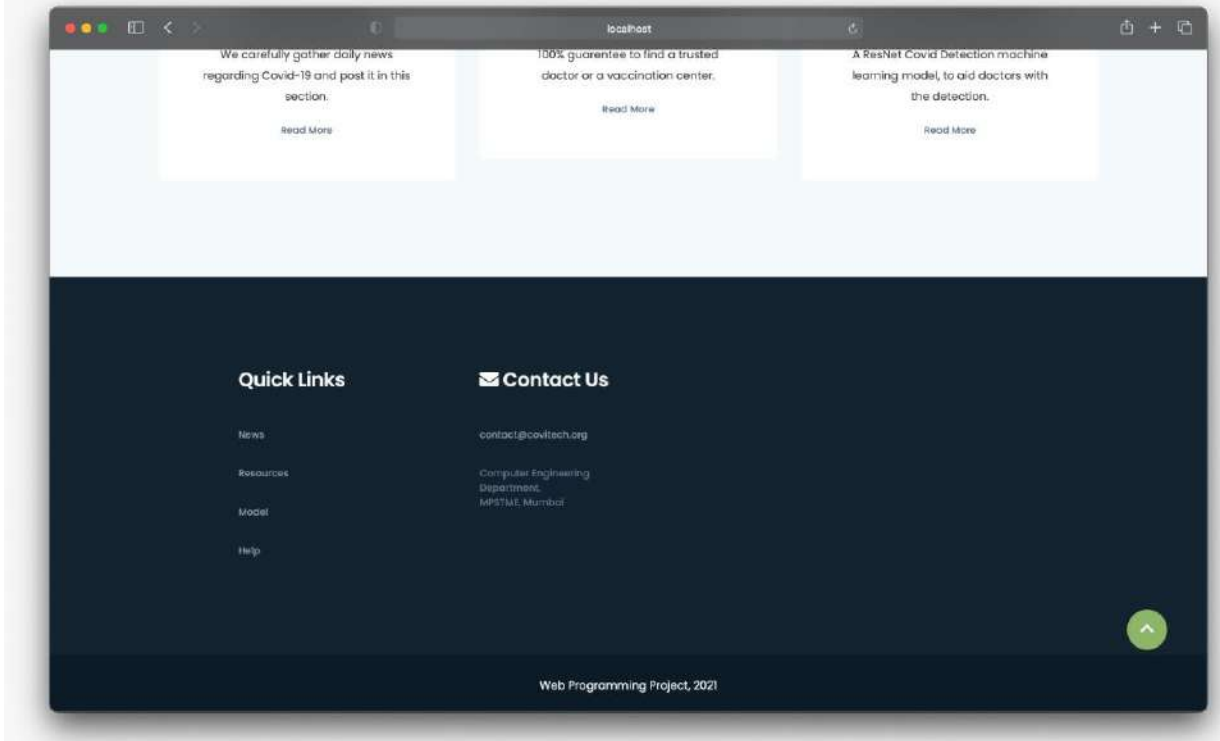





localhost
Project
COVITech
Covi-Tech
About
News
Resources
Model
Connecting Doctors with Machines.
Accurate Detection at home.
Use our well trained ResNet Covid Detection model to test your CT Scan with upto 91% accuracy!
TEST SCAN


localhost
CAUTION
MAINTAIN SOCIAL DISTANCING
AT LEAST 6ft.
DISTANCE FROM OTHERS
About
Why Us?
We are a group of young and motivated students, who are inspired to bring about a positive change by bridging the gap between humans and machines.
The lack of quality knowledge and free resources, drove us to come up with an innovative solution to make an all in one platform to spread Covid-19 awareness, promote vaccination and help doctors with an A.I Detection Model.
Do connect with us on our social media platforms and feel free to reach us.
contact@covitech.org


localhost
Services
What All Do We Offer?
Latest News
We carefully gather daily news regarding Covid-19 and post it in this section.
Read More
Trusted Resources
100% guarentee to find a trusted doctor or a vaccination center.
Read More
A.I Covid Detection
A ResNet Covid Detection machine learning model, to aid doctors with the detection.
Read More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We carefully gather daily news regarding Covid-19 and post it in this section.
Read More
100% guarentee to find a trusted doctor or a vaccination center.
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A ResNet Covid Detection machine learning model, to aid doctors with the detection.
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Computer Engineering Department,
MPSTME, Mumbai
Web Programming Project, 2021

News Page


"Let's Fight this Pandemic Together! Make sure you get vaccinated."
GET VACCINATED!
Project
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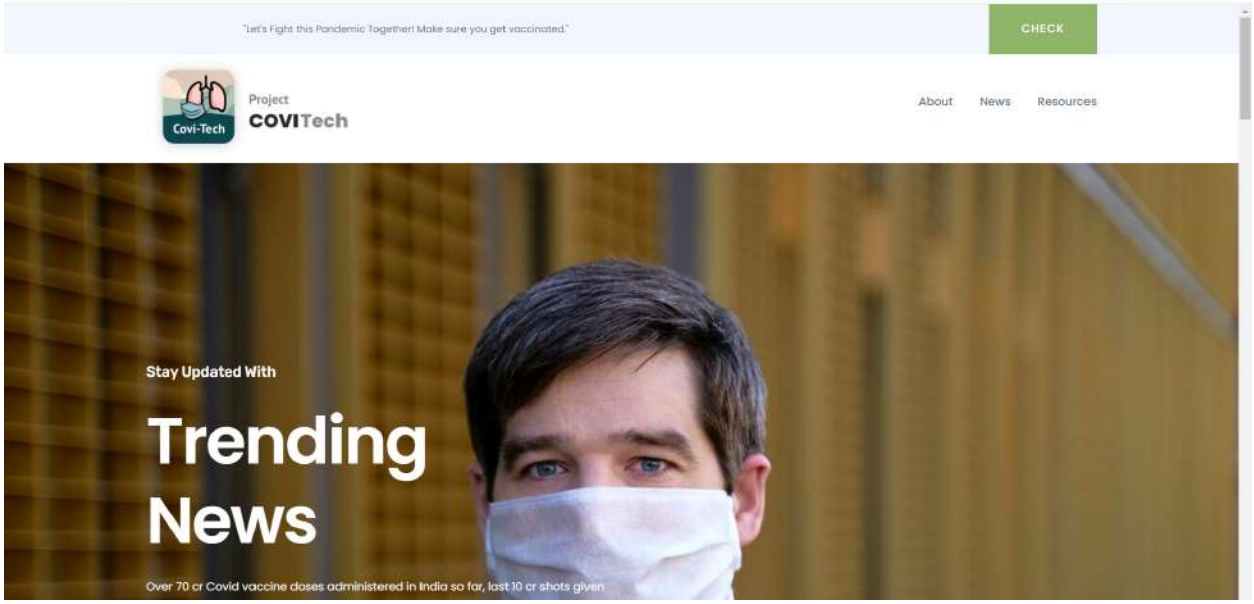
Model


"Let's Fight this Pandemic Together! Make sure you get vaccinated."
CHECK
Project
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Covi-Tech
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Stay Updated With
Trending
News
Over 70 cr Covid vaccine doses administered in India so far, last 10 cr shots given


6.84+
Billion Doses
have been administered globally.
48.5+
% of the world population
has received at least one dose of a COVID-19 vaccine.
25.52+
Million doses
are now administered each day.

Top Articles

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Coronavirus cases, deaths, vaccinations by country

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So should we expect more pandemics in the future?

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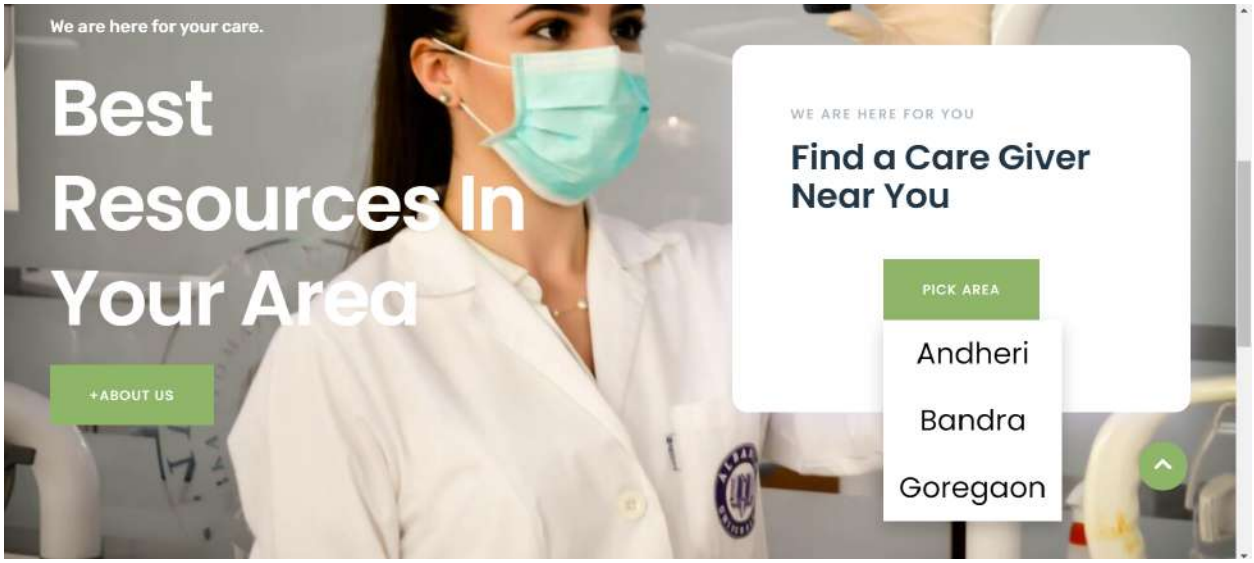
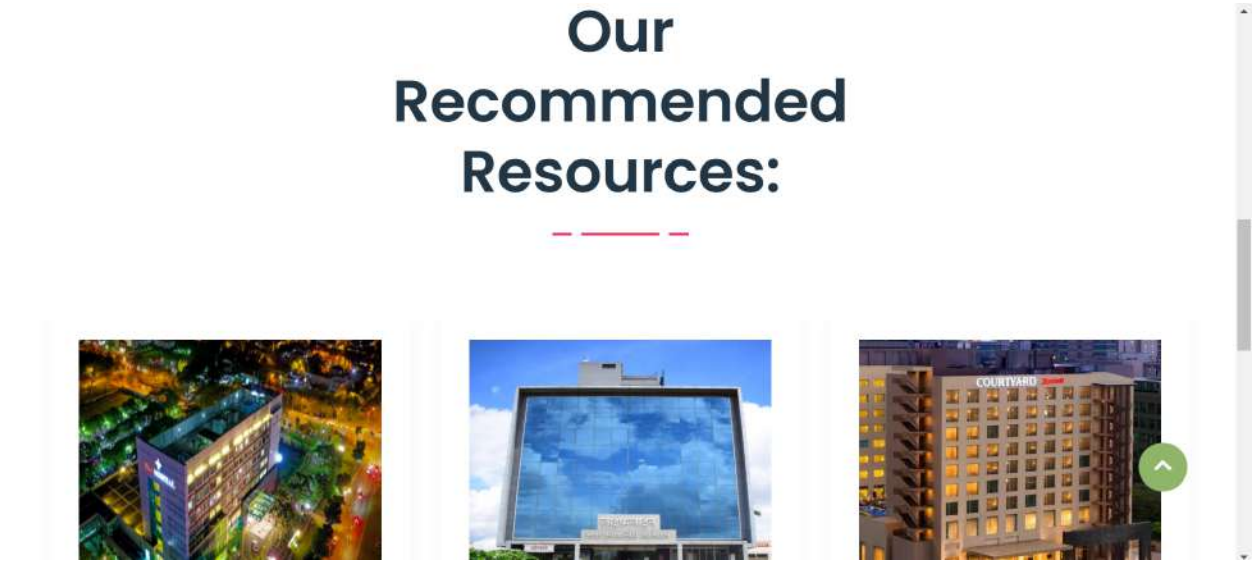


Area1:



Kokilaben Dhirubai Ambani Hospital

VACCINATION CENTER

Lifeline Medicare Center

HOSPITAL

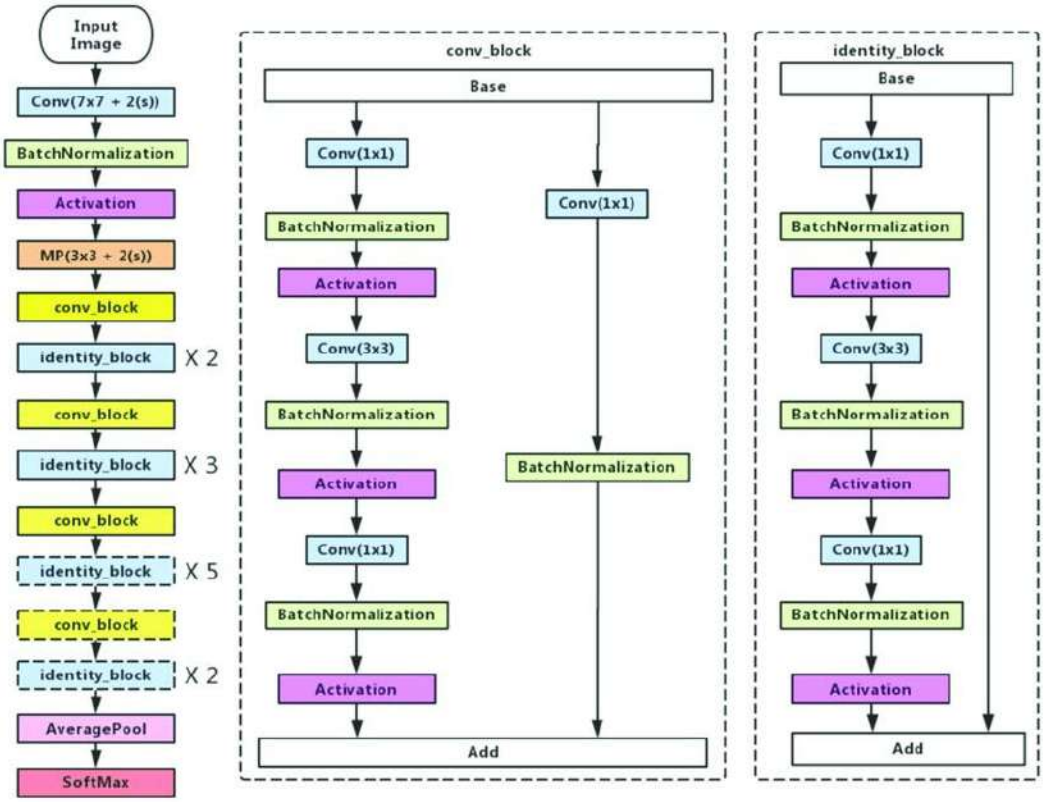
Courtyard by Marriott - Hotel

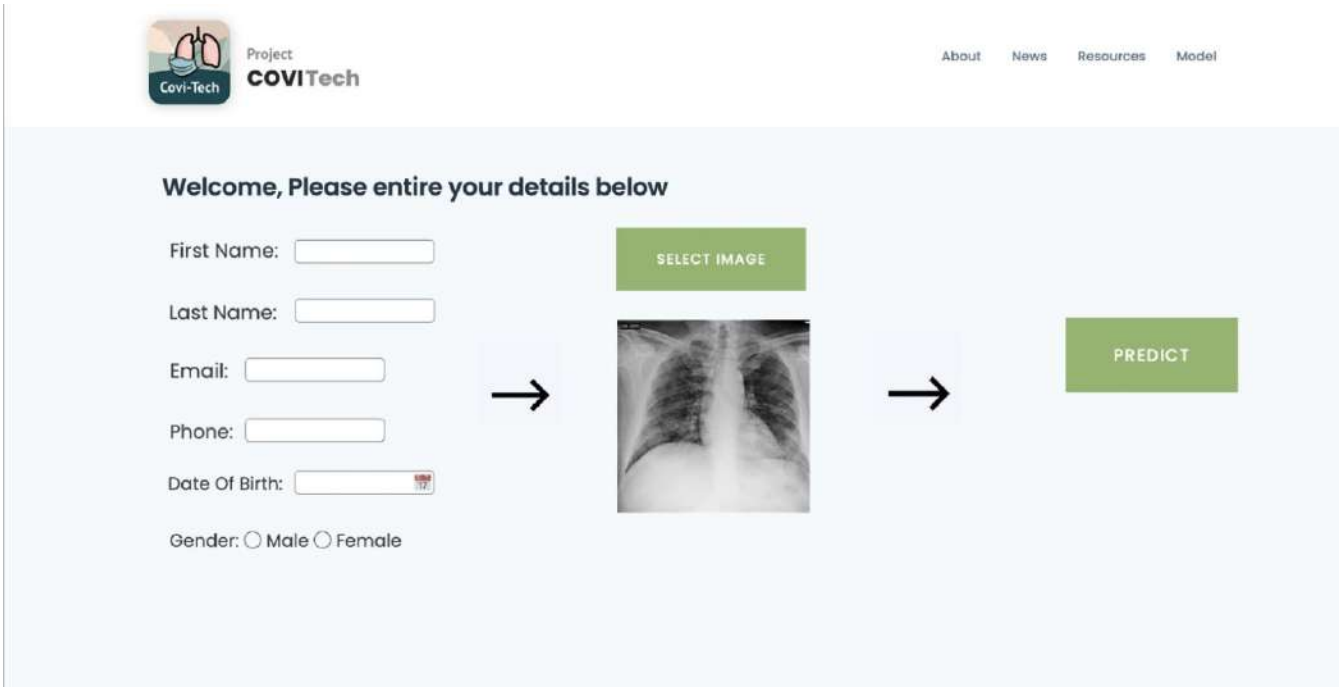
QUARANTINE CENTER

Project COVITech

About News Resources

Model Architecture (ResNet-50)



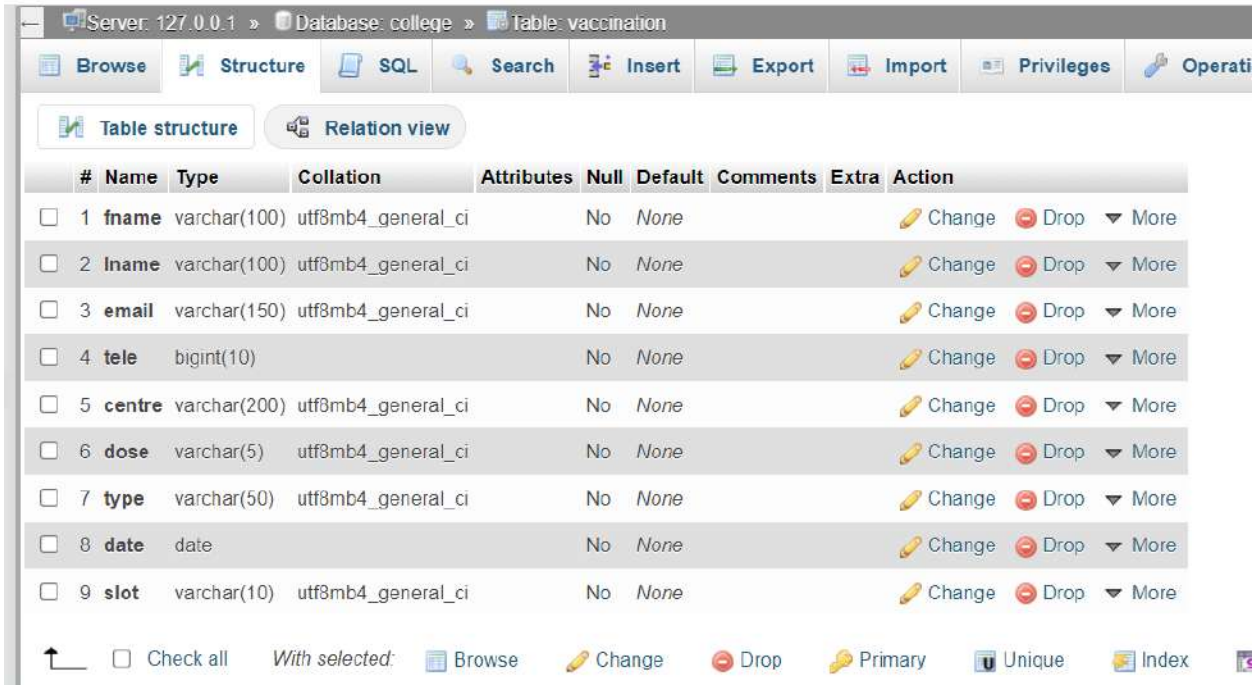


Database

Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	fname	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
2	lname	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
3	email	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
4	tele	bigint(10)			No	None			Change Drop More
5	dob	date			No	None			Change Drop More
6	gender	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
7	street	varchar(300)	utf8mb4_general_ci		No	None			Change Drop More
8	city	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
9	loc	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index



Server: 127.0.0.1 » Database: college » Table: vaccination

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operati

Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	fname	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
2	lname	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
3	email	varchar(150)	utf8mb4_general_ci		No	None			Change Drop More
4	tele	bigint(10)			No	None			Change Drop More
5	centre	varchar(200)	utf8mb4_general_ci		No	None			Change Drop More
6	dose	varchar(5)	utf8mb4_general_ci		No	None			Change Drop More
7	type	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
8	date	date			No	None			Change Drop More
9	slot	varchar(10)	utf8mb4_general_ci		No	None			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index

CONCLUSION

As previously stated, early identification and diagnosis of COVID-19 using Deep Learning (DL) approaches with the least amount of expense and problems are the most important measures in preventing the disease and pandemic progression. With the integration of DL algorithms into the equipment of radiology facilities, it will be feasible to diagnose this condition faster, cheaper, and safer in the near future. The application of these strategies in COVID-19 quick diagnostic decision-making can be a valuable tool for radiologists in reducing human error and assisting them in making choices in crucial situations and at the peak of the disease.
We can hence conclude that we were able to use our knowledge regarding both fields, web development and Machine Learning to create a unique platform where people could find all news, resources regarding covid, book vaccination slots and even test their own CT Scan.

FUTURE SCOPE

Although DL is one of the most powerful computing tools in diagnosis of pneumonia, especially COVID-19, developers should be careful to avoid overfitting and to maximize the generalizability and usefulness of COVID-19 DL diagnostic models; these models must be trained on large, heterogeneous datasets to cover all the available data space.The most common issues that Covid Detection models face is the issue of generalization, i.e how well the model generalizes on foreign images. My model has also shown a drop in the accuracy when being used on a dataset that has a different texture or a contrast that is different from what the training images had. Future Scope of the project can be to implement the project for Axial Computed Tomography scans, as the model was trained on a dataset that only contained Coronal Computed Tomography scans.