

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"></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>
  </div>


```

```

67     </div>
68     <div class="col-12">
69       <div class="mobile-menu"></div>
70     </div>
71   </div>
72 </div>
73 </div>
74 </header>
75 <!-- header end -->
76
77 <main>
78   <!-- hero-area start -->
79   <section class="hero-area">
80     <div class="hero-slider">
81       <div class="slider-active">
82         <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img1.jpg" style="backg
83           <div class="container">
84             <div class="row">
85               <div class="col-xl-6 col-lg-8 col-md-10">
86                 <div class="hero-text">
87                   <div class="hero-slider-caption">
88                     <h5 data-animation="fadeInUp" data-delay=".2s">Stay Updated.</h5>
89                     <h1 data-animation="fadeInUp" data-delay=".4s">Covid News at Your Fingertips.</h1>
90                     <p data-animation="fadeInUp" data-delay=".6s">Stay up to date by finding all the important Co
91                   </div>
92                   <div class="hero-slider-btn">
93                     <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
94                   </div>
95                 </div>
96               </div>
97             </div>
98           </div>
99         </div>
100       <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img2.jpg" style="backg
101         <div class="container">
102           <div class="row">
103             <div class="col-xl-6 col-lg-8 col-md-10">

```

```

99     </div>
100     <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img2.jpg" style="backg
101     <div class="container">
102         <div class="row">
103             <div class="col-xl-6 col-lg-8 col-md-10">
104                 <div class="hero-text">
105                     <div class="hero-slider-caption">
106                         <h5 data-animation="fadeInUp" data-delay=".2s">Trusted Resources.</h5>
107                         <h1 data-animation="fadeInUp" data-delay=".4s">Find Doctors & Vaccination Centres.</h1>
108                         <p data-animation="fadeInUp" data-delay=".6s">Filter and locate doctors or vaccination centre
109                     </div>
110                     <div class="hero-slider-btn">
111                         <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
112                     </div>
113                 </div>
114             </div>
115         </div>
116     </div>
117 </div>
118 <div class="single-slider slider-height d-flex align-items-center" data-background="img/slider/img3.jpg">
119     <div class="container">
120         <div class="row">
121             <div class="col-xl-6 col-lg-8 col-md-10">
122                 <div class="hero-text">
123                     <div class="hero-slider-caption">
124                         <h5 data-animation="fadeInUp" data-delay=".2s">Connecting Doctors with Machines.</h5>
125                         <h1 style="color: white" data-animation="fadeInUp" data-delay=".4s">Accurate Detection at h
126                         <p data-animation="fadeInUp" data-delay=".6s">Use our well trained ResNet Covid Detection mod
127                     </div>
128                     <div class="hero-slider-btn">
129                         <a data-animation="fadeInLeft" data-delay=".6s" href="news.html" class="btn btn-rounded ml-0"
130                     </div>
131                 </div>
132             </div>
133         </div>
134     </div>
135 </div>

```

```

137     </div>
138 </section>
139 <!-- hero-area end -->
140 <!-- about-area start -->
141 <section class="about-area pt-120 pb-90">
142     <div class="container">
143         <div class="row">
144             <div class="col-xl-5">
145                 <div class="about-front-img">
146                     
147                 </div>
148                 <br>
149                 <br>
150             </div>
151             <div class="col-xl-6 col-lg-7">
152                 <div class="about-right-side pt-55 mb-30">
153                     <div class="about-title mb-20">
154                         <h5>About</h5>
155                         <h1>Why us?</h1>
156                     </div>
157                     <div class="about-text">
158                         <p>We are a group of young and motivated students, who are inspired to bring about a positive change by b
159                         <br>
160                         <p>The lack of quality knowledge and free resources, drove us to come up with an innovative solution to m
161                         <br>
162                         <p>Do connect with us on our social media platforms and feel free to reach us. <br><br> <i class="fa fa-e
163                         <br>
164                     </div>
165                 </div>
166             </div>
167         </div>
168     </div>
169 </section>
170 <!-- about-area end -->
171 <!-- services-area start -->
172 <section class="services-area gray-bg pt-115 pb-90">
173     <div class="container">

```



```

54         </div>
55     </div>
56 </div>
57 </div>
58 </div>
59 </section>
60 <!-- about-area end -->
61 <!-- services-area start -->
62 <section class="servcies-area gray-bg pt-115 pb-90">
63     <div class="container">
64         <div class="row">
65             <div class="col-xl-8 offset-xl-2 col-lg-10 offset-lg-1">
66                 <div class="section-title text-center pos-rel mb-75">
67                     <div class="section-text pos-rel">
68                         <h5 style="color: #dimGrey;">Services</h5>
69                         <h1>What All Do We Offer?</h1>
70                     </div>
71                     <div class="section-line pos-rel">
72                         
73                     </div>
74                 </div>
75             </div>
76 </div>
77 <div class="row">
78     <div class="col-xl-4 col-lg-6 col-md-6">
79         <div class="service-box text-center mb-30">
80             <div class="service-thumb">
81                 
82             </div>
83             <div class="service-content">
84                 <h3><a href="#">Latest News</a></h3>
85                 <p>We carefully gather daily news regarding Covid-19 and post it in this section.</p>
86                 <a class="service-link" href="news.html">Read More</a>
87             </div>
88         </div>
89     </div>
90 </div>
91 <div class="col-xl-4 col-lg-6 col-md-6">

```

```

242 <section class="about-area pt-115 pb-80">
243     <div class="container">
244         <div class="row pt-120">
245             <div class="col-xl-4 col-lg-4 col-md-6">
246                 <div class="single-couter counter-box counter-box-white text-center mb-30">
247                     
248                     <h1><span class="theme-color counter">6.84</span></h1>
249                     <h6 class="green-color pb-20">Billion Doses</h6>
250                     <div class="counter-text mt-10">
251                         <p> have been administered globally.</p>
252                     </div>
253                 </div>
254             </div>
255             <div class="col-xl-4 col-lg-4 col-md-6">
256                 <div class="single-couter counter-box counter-box-white text-center mb-30">
257                     
258                     <h1><span class="theme-color counter">48.5</span></h1>
259                     <h6 class="green-color pb-20">% of the world population</h6>
260                     <span class="counter-shpae"></span>
261                     <div class="counter-text mt-10">
262                         <p>has received at least one dose of a COVID-19 vaccine.</p>
263                     </div>
264                 </div>
265             </div>
266             <div class="col-xl-4 col-lg-4 col-md-6">
267                 <div class="single-couter counter-box counter-box-white text-center mb-30">
268                     
269                     <h1><span class="theme-color counter">25.52</span></h1>
270                     <h6 class="green-color pb-20">Million doses</h6>

```

```

370     </div>
371     <div class="section-line pos-rel">
372         
373     </div>
374 </div>
375 </div>
376 </div>
377 <div class="row">
378     <div class="col-xl-6 col-lg-6 col-md-12">
379         <iframe width="575" height="300" src="https://www.youtube.com/embed/q8sDN9yMmks"
380             title="YouTube video player" frameborder="0" allow="accelerometer; autoplay;
381             clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
382     </div>
383     <div class="col-xl-6 col-lg-6 col-md-12">
384         <iframe width="575" height="300" src="https://www.youtube.com/embed/9XZOEJJPPTk"
385             title="YouTube video player" frameborder="0" allow="accelerometer; autoplay;
386             clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
387     </div>
388     <div class="col-xl-6 col-lg-6 col-md-12">
389         <iframe width="575" height="300" src="https://www.youtube.com/embed/4qFQ1UPFicw" title="YouTube v
390             frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media;
391             gyroscope; picture-in-picture" allowfullscreen></iframe>
392     </div>
393     <div class="col-xl-6 col-lg-6 col-md-12">
394         <iframe width="575" height="300" src="https://www.youtube.com/embed/51TdJl_kzUY"
395             title="YouTube video player" frameborder="0" allow="accelerometer;
396             autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture"
397             allowfullscreen></iframe>
398     </div>

```

```

133 <section class="hero-area">
134     <div class="hero-slider">
135         <div class="slider-active">
136             <div class="single-slider slider-height slider-height-2 d-flex align-items-center"
137                 data-background="img/slider/Doctor.jpg">
138                 <div class="container">
139                     <div class="row align-items-center">
140                         <div class="col-xl-6 col-lg-6 col-md-10">
141                             <div class="hero-text hero-text-2 pt-35">
142                                 <div class="hero-slider-caption hero-slider-caption-2">
143                                     <h5 class="white-color" data-animation="fadeInUp" data-delay=".2s">We are
144                                     here for your care.</h5>
145                                     <h1 class="white-color" data-animation="fadeInUp" data-delay=".4s">Best
146                                     Resources In Your Area</h1>
147                                 </div>
148                                 <div class="hero-slider-btn">
149                                     <a data-animation="fadeInLeft" data-delay=".6s" href="index.html"
150                                     class="btn btn-icon btn-icon-blue ml-0"><span>+</span>about us</a>
151                                 </div>
152                             </div>
153                         </div>
154                         <div class="col-xl-5 offset-xl-1 col-lg-6 col-md-12">
155                             <div class="slider-right-2">
156                                 <div class="caregive-box">
157                                     <div class="search-form">
158                                         <span class="sub-heading">We are here for you</span>
159                                         <h3>Find a Care Giver Near You </h3>

```

```

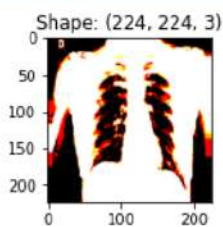
161     <div class="col-xl-12 mb-35">
162         <div class="inner caregive-btn text-center">
163             <div class="dropdown">
164                 <div class="inner caregive-btn text-center">
165                     <button class="btn gray-btn-border">Pick Area</button>
166                 <div class="dropdown-content">
167                     <a href="Andheri.html">Andheri</a>
168                     <a href="Bandra.html">Bandra</a>
169                     <a href="Goregaon.html">Goregaon</a>
170                 </div>
171             </div>

```

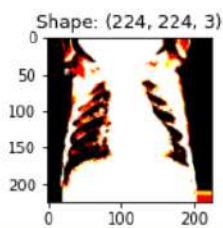
```
covid_images = pd.read_excel(ROOT_DIRECTORY+"/COVID.metadata.xlsx")
opacity_images = pd.read_excel(ROOT_DIRECTORY+"/Lung_Opacity.metadata.xlsx")
normal_images = pd.read_excel(ROOT_DIRECTORY+"/Normal.metadata.xlsx")
pneumonia_images = pd.read_excel(ROOT_DIRECTORY+"/Viral_Pneumonia.metadata.xlsx")
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://sim.org/category/senza-categoria/covi... |
| 1 | COVID-2 | PNG | 256*256 | https://sim.org/category/senza-categoria/covi... |
| 2 | COVID-3 | PNG | 256*256 | https://sim.org/category/senza-categoria/covi... |
| 3 | COVID-4 | PNG | 256*256 | https://sim.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... |

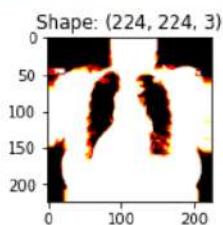
Clipping input data to the \



Clipping input data to the \



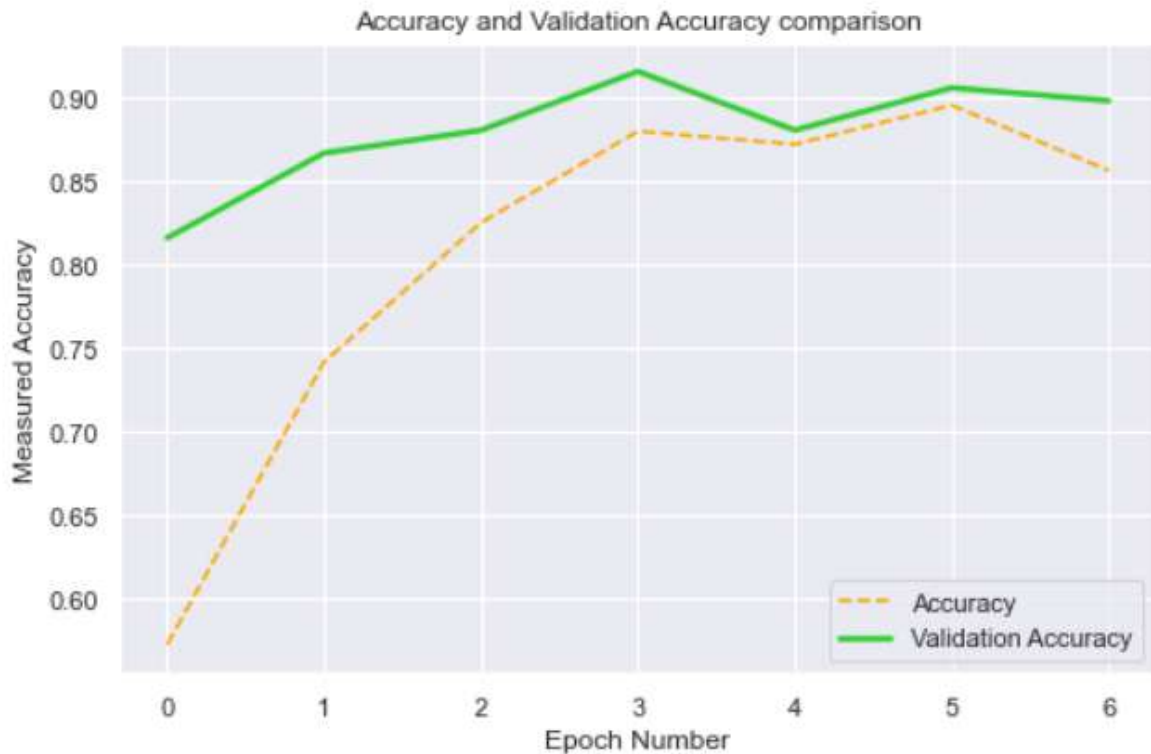
Clipping input data to the \



Clipping input data to the \



```
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()
```

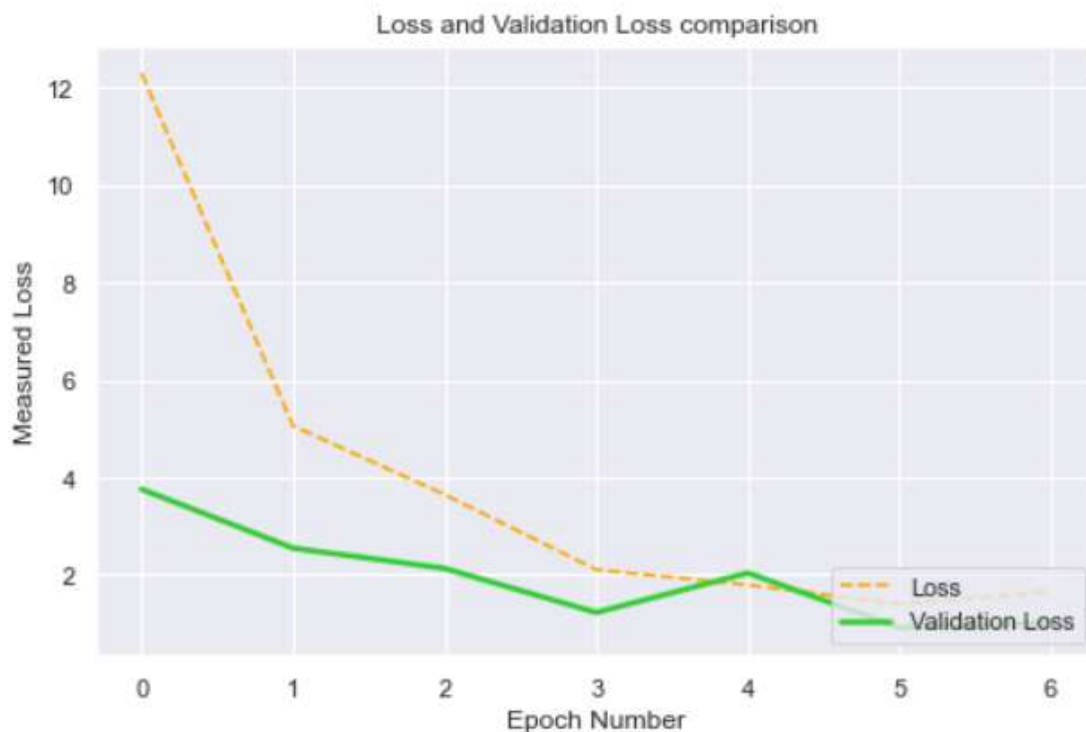



```
]: #Accuracy on Test Dataset
test_accuracy = model.evaluate_generator(generator= test)[1]
print("Test Accuracy: "+str(test_accuracy))
print("Test Accuracy Percent: "+str(round(test_accuracy,4)*100)+"%")
```

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 Guarantee Percent: 99.955%

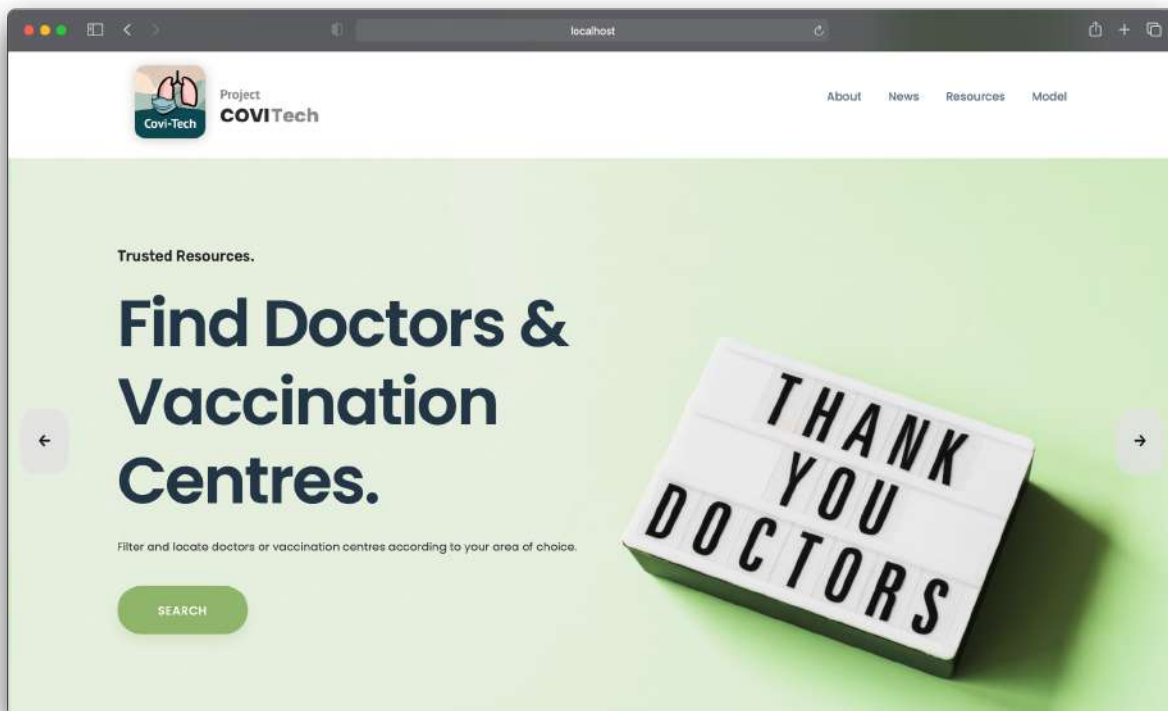
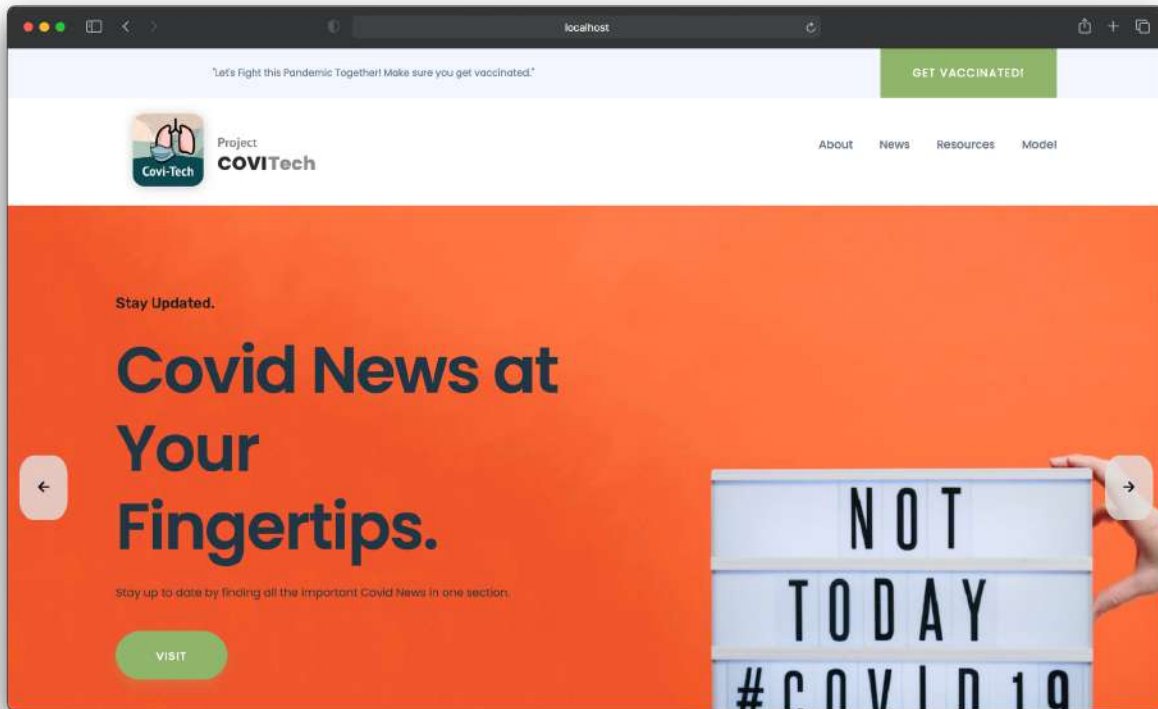
Not Covid Guarantee Percent: 0.0563%

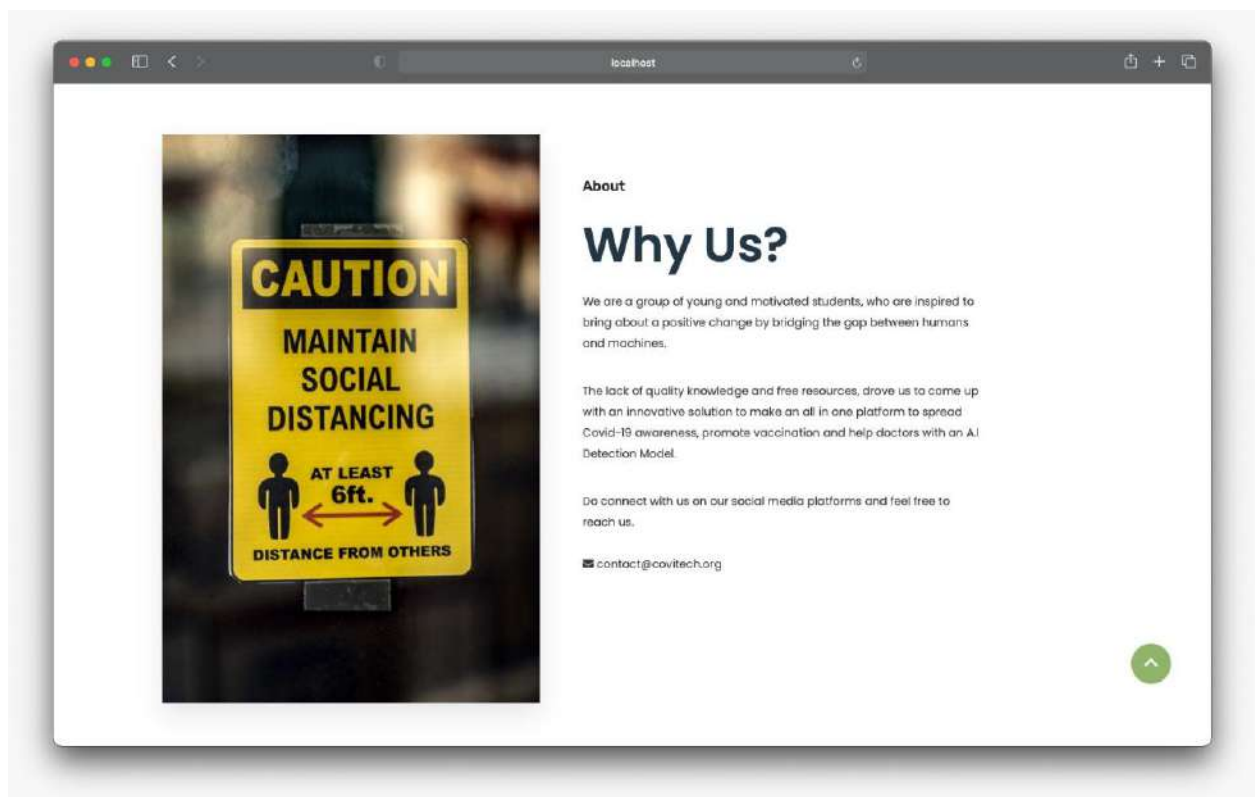
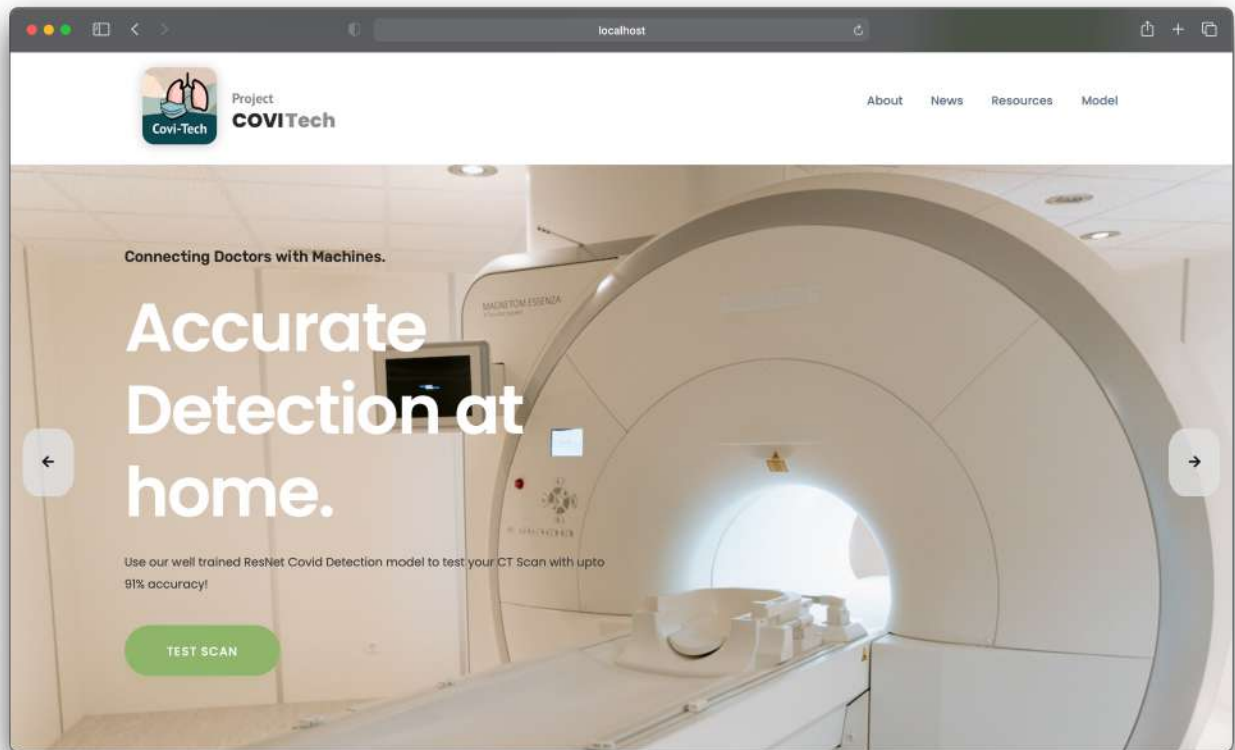
Result: Covid, Guarantee %: 99.95%

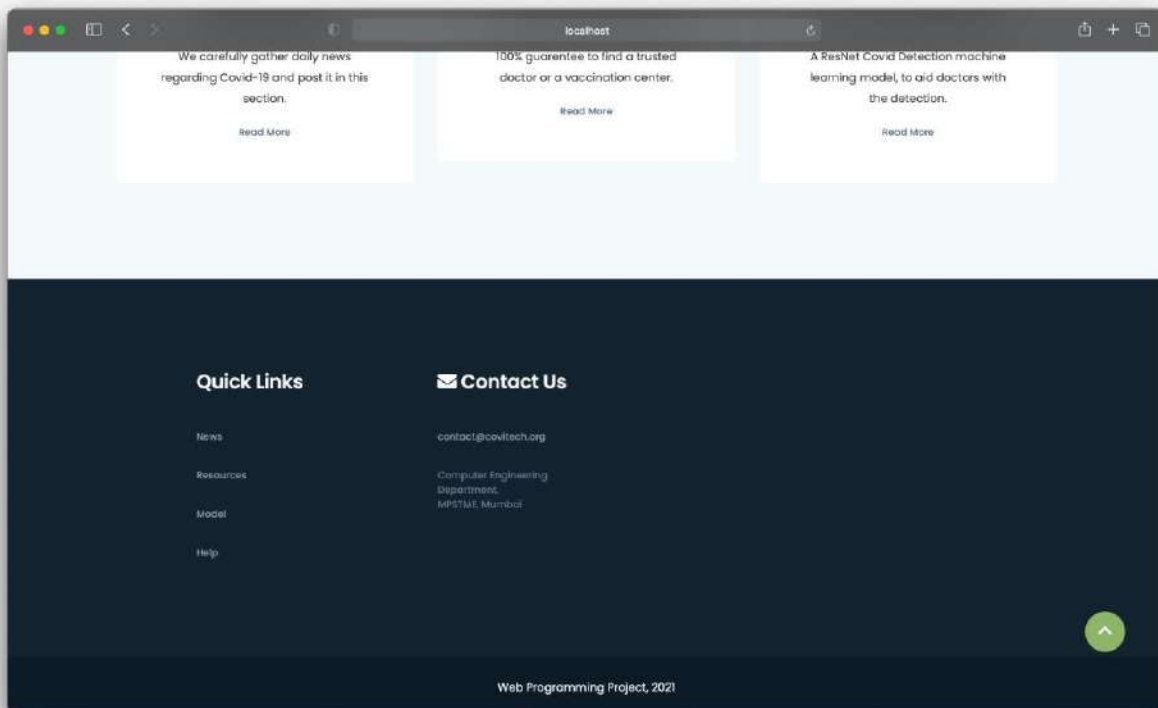
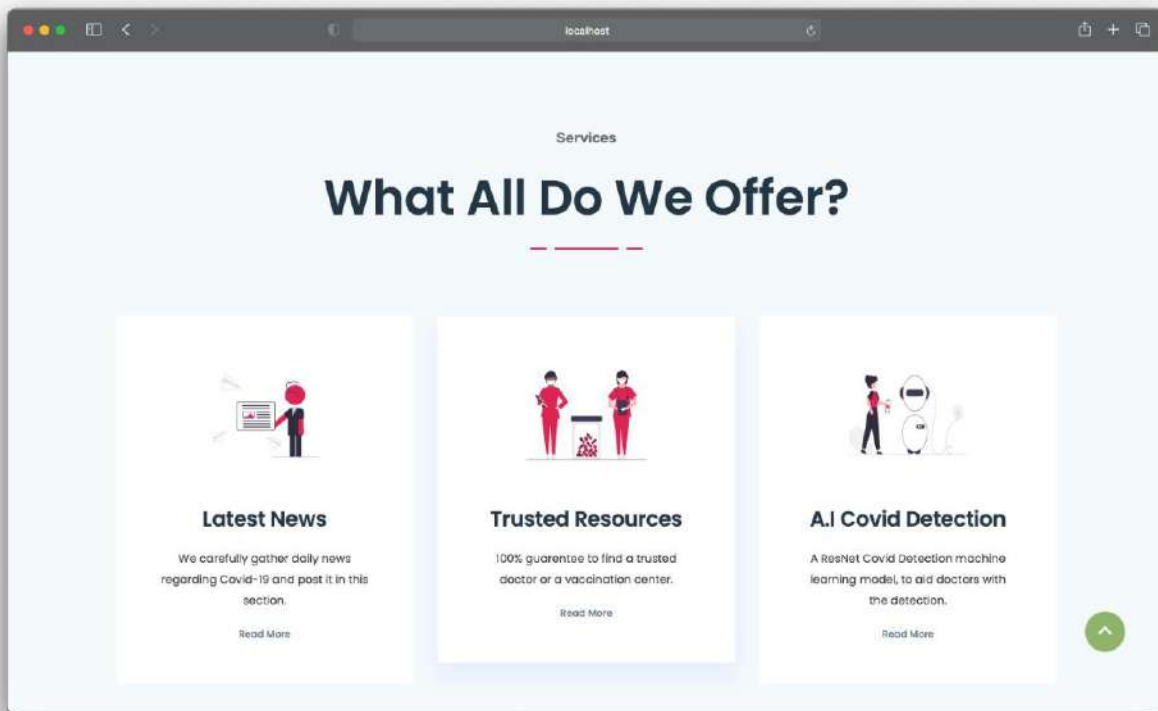


FRONT END

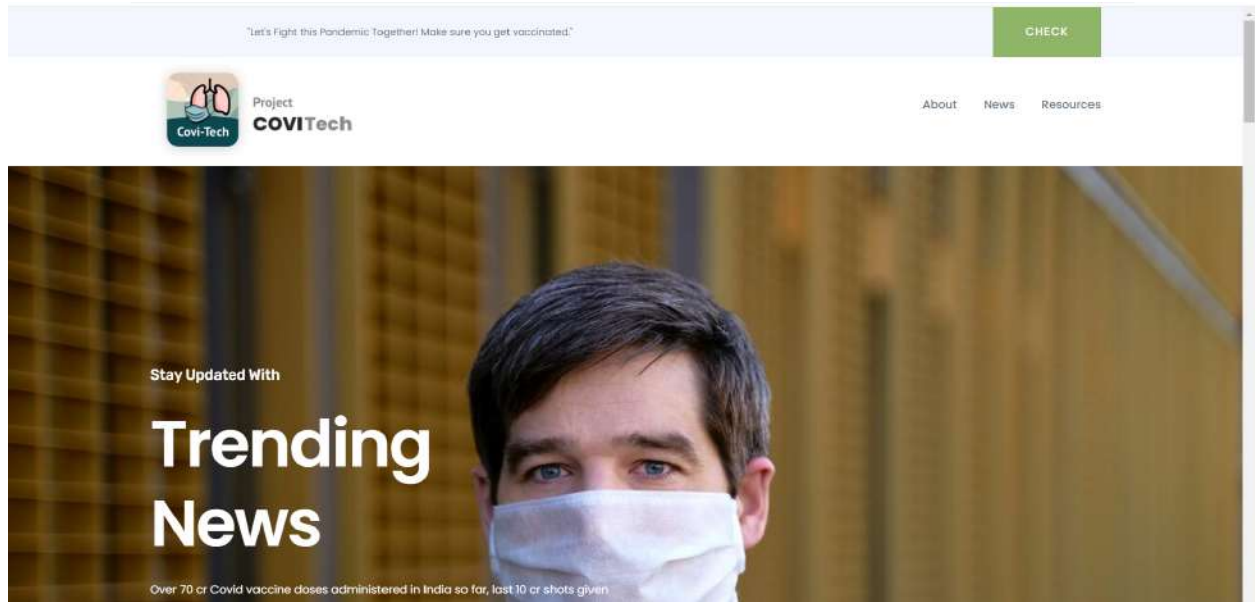
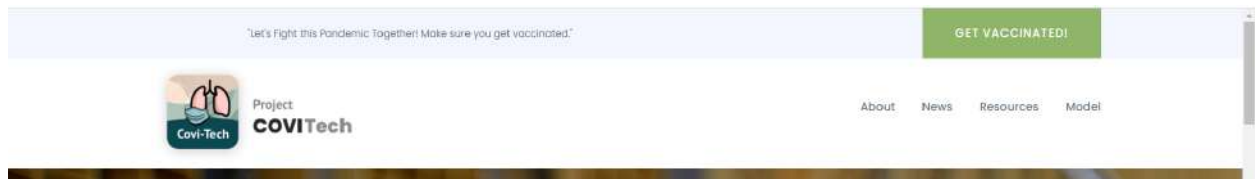
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Covid map:

Coronavirus cases, deaths, vaccinations by country

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Pandemics: The new normal?

So should we expect more pandemics in the future?

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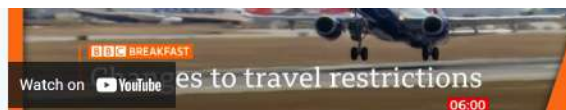
Covid symptoms:

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<https://www.bbc.com/news/world-51235105>

Watch Now



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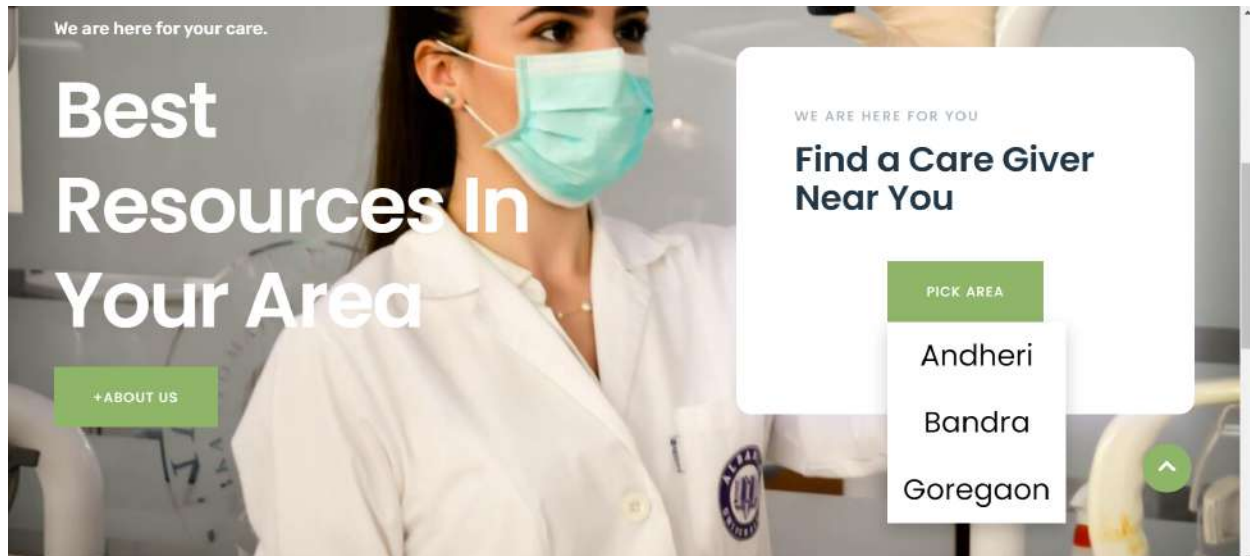
Contact Us

contact@covitech.org

Computer Engineering
Department,
MPSTME, Mumbai



Resources Page



Area1:



Our Recommended Resources:

Decorative horizontal line





Kokilaben Dhirubai Ambani Hospital

VACCINATION CENTER



Lifeline Medicare Center

HOSPITAL



Courtyard by Marriott - Hotel

QUARANTINE CENTER



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COVITech

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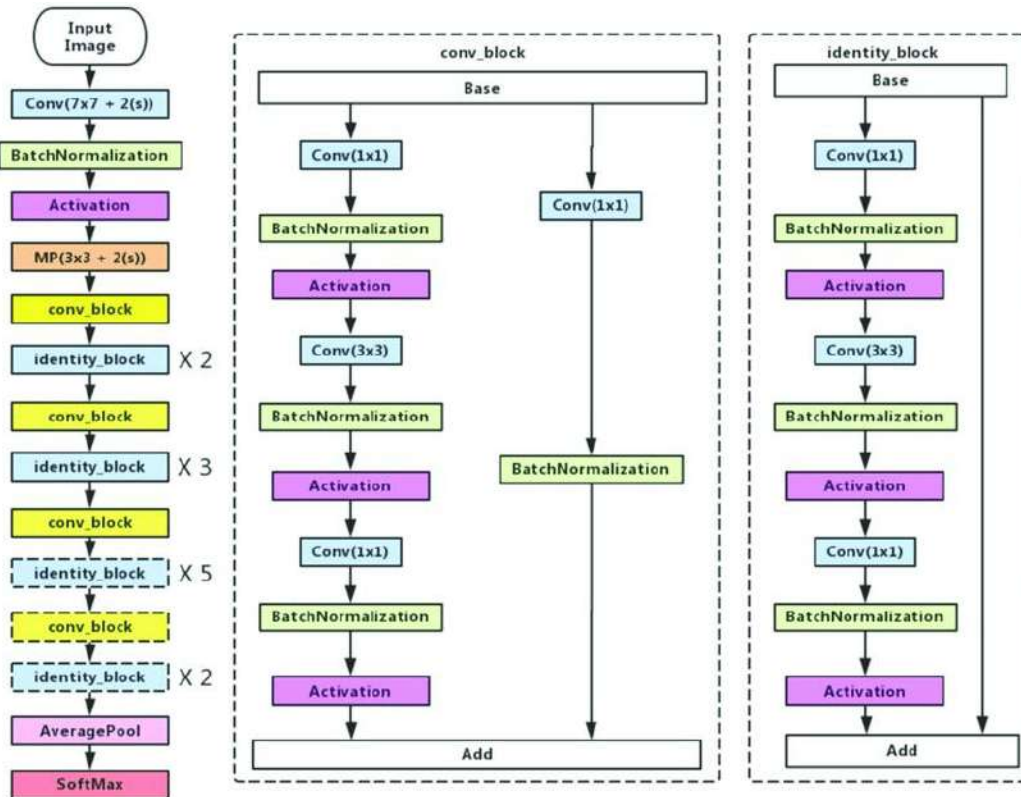


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Goregaon

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Model Architecture (ResNet-50)



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Welcome, Please entire your details below

First Name:

Last Name:

Email:

Phone:

Date Of Birth:

Gender: ☐ Male ☐ Female

SELECT IMAGE



PREDICT

Database

Table structure

Relation view

| # | Name | Type | Collation | Attributes | Null | Default | Comments | Extra | Action |
|--------------------------|-----------------|--------------|--------------------|------------|------|---------|----------|-------|--------------------|
| <input type="checkbox"/> | 1 fname | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 2 lname | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 3 email | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 4 tele | bigint(10) | | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 5 dob | date | | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 6 gender | varchar(50) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 7 street | varchar(300) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 8 city | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 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 |
|--------------------------|-----------------|--------------|--------------------|------------|------|---------|----------|-------|--------------------|
| <input type="checkbox"/> | 1 fname | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 2 lname | varchar(100) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 3 email | varchar(150) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 4 tele | bigint(10) | | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 5 centre | varchar(200) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 6 dose | varchar(5) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 7 type | varchar(50) | utf8mb4_general_ci | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 8 date | date | | | No | None | | | Change Drop More |
| <input type="checkbox"/> | 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.