Project Overview

The Dataset

The dataset consisted of 1376 images, 690 face images with masks and 686 without masks.

Data Preprocessing

```
import cv2,os

data_path='dataset'
categories=os.listdir(data_path)
labels=[i for i in range(len(categories))]

label_dict=dict(zip(categories,labels))

print(label_dict)
print(categories)
print(labels)
```

```
{'with mask': 0, 'without mask': 1}
['with mask', 'without mask']
[0, 1]
```

```
img_size=100
data=[]
target=[]


for category in categories:
    folder_path=os.path.join(data_path,category)
    img_names=os.listdir(folder_path)

    for img_name in img_names:
        img_path=os.path.join(folder_path,img_name)
        img=cv2.imread(img_path)

        try:
            gray=cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
            #Coverting the image into gray scale
            resized=cv2.resize(gray,(img_size,img_size))
            #resizing the gray scale into 100x100, since we need a
fixed common size for all the images in the dataset
            data.append(resized)
            target.append(label_dict[category])
```

```
            #appending the image and the label(categorized) into the
list (dataset)

        except Exception as e:
            print('Exception:',e)
            #if any exception rasied, the exception will be printed
here. And pass to the next image

import numpy as np

data=np.array(data)/255.0
data=np.reshape(data,(data.shape[0],img_size,img_size,1))
target=np.array(target)

from keras.utils import to_categorical

new_target=to_categorical(target)

np.save('data',data)
np.save('target',new_target)
```