Detail Project Report Mask Detection

Revision Number – 1.0

Last Date of Revision : 17-12-2022

Akash R

**Document Version Control**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Description | Author |
| 17-12-2022 | 1.0 | Abstract  Introduction  General Description | Akash |
| 17-12-2022 | 1.1 | Technical Requirements  Data Requirements  Data Pre-processing Design Flow | Akash |
| 17-12-2022 | 1.2 | Data from User and its validation  Rendering the Results  Deployment  Conclusion | Akash |

# Contents

Document Version Control

………………………………………………………………………………..

2 Abstract

…………………………………………………………………………………

………………

………... 5

⦁ Introduction

………………………………………………………………………………

………………

…. 6

⦁ Why this DPR Document?

………………………………………………………………….. 6

⦁ General Description

………………………………………………………………………………

……… 6

⦁ Problem Perspective

…………………………………………………………………………. 6

⦁ Problem Statement

………………………………………………………………………

…… 6

⦁ Proposed Solution

………………………………………………………………………

…….. 6

⦁ Technical Requirements

……………………………………………………………………………….

6

⦁ Tools Used ………….……………………………………………………………

………………..

7

⦁ Data Requirements

………………………………………………………………………………

……… 7

⦁ Design Flow

………………………………………………………………………………

………..………

… 7

⦁ UI Integration

………………………………………………………………………

……..……... 7

⦁ Data from User

………………………………………………………………………………

……………… 7

Rendering the Results

…………….…………………….……………………………………………

….... 8

⦁ Conclusion

………………………………………………………………………………

………………

…. 8

⦁ FAQs

………………………………………………………………………………

………………

…………… 8

## **Abstract**

 The usage of the mask has become mandatory due to COVID-19 and law also has been enforced for this. Physically monitoring people through cameras in public places is a tedious task for a human for continuously staring at the screen. This work discusses the implementation of developing Object detection model to detect whether a person is wearing a mask or not.

## **1. Introduction**

1.1 Why this DPR Document?

The main purpose of this DPR documentation is to add the necessary details of the project and provide the description of the object detection model and the written code. This also provides the detailed description on how the entire project has been designed.

## **2. General Description**

## 

2.1 Problem Perspective

The Mask detection is an object detection model which will detect whether a person is wearing a mask or not or a person is wearing incorrectly.

2.2 Problem Statement

Identifying whether a person is wearing a mask or not using a object detection model.

2.3 Proposed Solution

A web app has been developed for this project which takes an image as an input and returns the predictions as a result. The app is dockerized and pushed to docker hub. Command to pull the image from Docker hub is given below. The object detection model is trained using TFOD 2 (TensorFlow Object detection).

## **3. Technical Requirements**

As technical requirements, we don’t need any specialized hardware for virtualization of the application. The user should have the device that has the access to the web and the fundamental understanding of providing the input.

3.1 Tools Used

Python programming language and frameworks such as NumPy, Flask used to build the whole model.

⦁ Visual Studio code is used as IDE.

⦁ TFOD is used for training the object detection model

⦁ The object detection model is trained in google collab

⦁ Heroku is used for deployment of the model.

⦁ Front end development is done using HTML/CSS.

⦁ Python is used for backend development.

⦁ GitHub is used as version control system.

**4. Data Requirements**

The dataset is accessible on the Kaggle.

## **5. Design Flow**

5.1 UI Integration

Both CSS and HTML files are being created and are being integrated with the created machine learning model. All the required files are then integrated to the clientApp.py file and tested locally.

**6. Data from User**

The data from the user is retrieved from the created HTML web page.

1. **Rendering the Results**

The data sent for the prediction is then rendered to the web page.

## **8. Conclusion**

Since the pandemic the usage of the mask has been mandatory throughout the world. So instead of investing in man power, this object detection model will able to find out whether people is wearing mask or not

## **9. Frequently Asked Questions (FAQs)**

**Q1) What’s the source of data?**

The data for training is taken from Kaggle

**Q2) What was the type of data?**

The dataset consists of images

**Q3) What’s the complete flow you followed in this Project?**

Refer Page no 6 for better Understanding.

**Q4) How Prediction was done?**

We Performed the same life cycle on the provided dataset. Then, on the basis of dataset, model is loaded and prediction is performed. In the end we get the image with predictions