Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE
(All Programs Accredited by NBA)
Department of Information Technology

Using ML for Facial Mask Detection

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1. Introduction

- Problem Identified :
  - In this phase of covid-19 people are not following proper rules as a precautionary measure.
  - Though wearing masks is a compulsory action, It is not followed by people.

- Solution Proposed :
  - To design a system which works to detect masked faces and unmasked faces in Covid-19 situation.
  - It will be a user-friendly system where a webcam or CCTV surveillance will record all the time and check to give an alert message.

2. Literature Review

Sr. No.	Authors	Paper Tittle	Methodologies	Findings
1.	MM Rahman	An Automated System to Limit COVID-19 Using Facial Mask Detection in Smart City Network	Deep Learning Architecture, Image Pre-Processing	An automated smart framework for screening persons who are not using a face mask
2.	Mamata S. Kalas	Real time face detection and tracking using OpenCV	Harr like classifier and AdaBoost algorithm to track faces on OpenCV Platform.	Face detection is a two-class problem where we have to decide if there is a face or not in a picture. This approach can be seen as a simplified face recognition problem.

3. Objectives

1. To automate the process of face mask detection using a CCTV camera.
2. To Classify people into masked and unmasked category.
3. Image recognition of unmasked people and notification alert to the Authority about it.
4. To help stop the spread of airborne particles (corona virus) from the infected person’s sneezing or coughing by the use of our system.
5. To ensure a safe working environment by creating an atmosphere of awareness & preparedness in the locality.

4. Review Suggestions (Given in the last meeting)

1. To alter the Objectives of our Project.
2. To build a Mobile Application instead of Web Application and give an alert.
3. To deploy data on Cloud.

5. Scope

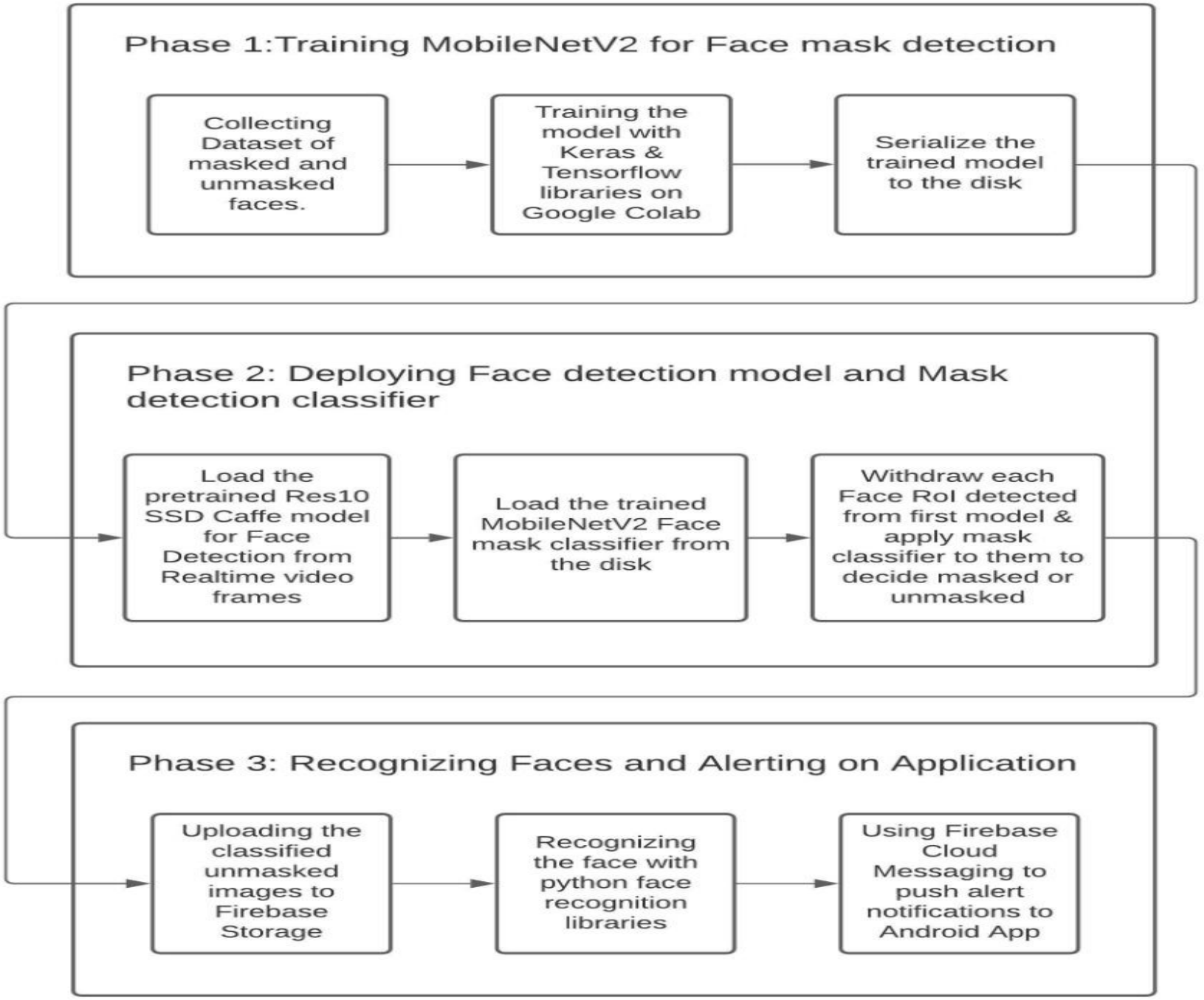
1. It can be deployed in the college campus area, for students, teachers and other college staff.

2. Can be used in housing complex, hospitals, and offices.

6. Technology Stack

1. - Python3, Jupiter Notebook, Google collab
2. - OpenCV, Tensorflow, Keras
3. - Firebase

7. Block Diagram to propose project Idea



8. Status of Paper Draft & Targeted Conference

- **Paper work and Review has been completed**

Targeted Conferences:

- ICCIC 2021: International Conference on Cognitive & Intelligent Computing CMR College of Engineering & Technology Hyderabad, India, December 11-12, 2021

  Abstract registration deadline : November 15, 2021

  Submission deadline : November 20, 2021

- ICDE 2022 : International Conference on Data Engineering Workshops

  Paper Submission Deadline : Wednesday 17 Nov 2021

9. References

1. https://www.researchgate.net/publication/344563082_An_Automated_System_to_Limit_COVID19_Using_Facial_Mask_Detection_in_Smart_City_Network
(MM Rahman · 2020 · Limit COVID-19 Using Facial Mask Detection in Smart City Network. Date Added to IEEE Xplore**:** 08 October 2020)

2. https://www.pyimagesearch.com/2020/05/04/covid-19-face-mask- detector-with-opencv-keras-tensorflow-and-deep-learning/
(COVID-19: Face Mask Detector with OpenCV, Keras/TensorFlow, and Deep Learning by Adrian Rosebrock on May 4, 2020)

3.https://www.researchgate.net/publication/345316359_Deep_Learning_Framework_to_Detect_Face_Masks_from_Video_Footage
(Deep Learning Framework to Detect Face Masks from Video Footage on November 2020)

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Thank You...!!