FACE MASK DETECTIONS USING DEEP LEARNING TECHNIQUES

Prof NagashreeN[1]

Ambika A Bhosale[2]

BhagyashriYalawar[3]

Leela K[4]

Navita[5]

School of CSE,REVAUniversity,Bangalore,India

nagashree.n@reva.edu.in

r19cs808@cit.reva.edu..in

r19cs810@cit.reva.edu.in

r19cs821@cit.reva.edu.in

r19cs829@cit.reva.edu.in

Abstract:

Throughout this COVID-19,information formula possess happened castigatory protecting municipality effective, with reality extensive enduring collision appealing information in many places come about further on pandemic.So our research is to help the society by detecting the people wearing maskornot.Our project accuracy up to 95%with mask and 94%with outmask.Using CNN model detect person with mask and without mask.

1. Introduction:

There was a wide range of symtoms.In this situation all of us need to wear mask. People should get aware of wearing mask to control this COVID-19.Wearing mask reduce the affect the COVID-19.The World Health Organizantion as ask the people to wear a medical mask to prevent from Covid-19.

Methodology:

- ➤ Dataset,
    - o The data will first preprocess and then understand the dataset.
    - o Now, the preprocessed will get divided for training and testing the data.
    - o Used CNN technologies

- ➤ Model is trained well and once the completion of it testing is also done.

- ➤ Model trained is tested using the dataset and calculated the accuracy

- ➤ Algorithm that gives the good accuracy is taken for prediction..

- ➤ After the prediction model is finalized and saved.

> now with the image and video it detect people wearing mask and not wearing mask.

A. Data Processing

In data processing we convert the info into more format and try to achieve the required format very neccerarly.The data's can be in any different form like images,videos,tables,graphs,etc.Our model in trained under the kears and MobileNetV2 to deal with the image and video's.

B Data visualization:

In visual we take data set for better understanding The no of image in the dataset is used for with masks and without masks .Then to have we shall proper view of dataset and useful for commucation of knowledge for encoding. Now the directory looks like("with and without mask").We call it has a format=list.dir(path).To get the format, now need to do formatting like=[k for kin range(ken(formatting))].The format is set to[0,1].Then the format is matched withticd=ticd(formatting, format)).Finally ticd the formate are hwithmask::0 ,with out mask::1p.[12]

C RGB to Gray:

Here we convert out RGB image into gray image so the system uderstand the dataset clear.Once the images are convert then the trained data will be increased in size to get the actions .Now using NetV2 as key to image will be given for space colors.

D DataSet:

We have 2 Data sets that is been used in our model. In data set-1 has 1200 image in the 600 image person wearing mask and other 600 person with wearing a mask. In dataset1 many faces are facing to words the front side and all the person in image wearing same color of mask.

In data set two has 800 image with person wearing mask and without person wearing mask and in data set two few faces are in turned positions with many colors of mask and types of it.

RESULT :

Model tested and trainedontwodatasettotal

accuracyofdataset1is95%, dataset 2 as more faces and various type of mask with different colors so the total accuracy is 94% on dataset 2.From the dataset the images will be taken for the process and prediction of person wearing mask are notwearingmaskalsoitpredictsis is easy as the dataset is trained with different color and types of masks.

LITERATURE SURVEY:

proposed system:

1.This framework is fit to prepare the dataset of the two people wearing veils and without wearing covers.

2.After preparation the model the framework can foreseeing regardless of whether the individual is wearing the veil.

Existing system:

A Multi-Task Cascaded Convolutional Neural Network was utilized to settle the face identification challenge (MTCNN). The Google Face Net installing model is then used to extricate facial elements. This method can prepare a dataset of the two individuals wearing veils and the people who aren't wearing covers. The framework can guess whether the individual is wearing the cover in the wake of preparing the model.

PROBLEM DEFINITION:

The issue here is to anticipate individuals wearing covers or not wearing them, by some picture or video. It is an item recognition and order issue with two unique classes (with veil and without mask). There are various strategies for object location however, for this we have chosen to involve MobileNetV2 as it is straightforward quick and one of the most reliable strategy out there.

OBJECTIVES:
- Discovery of facemask from webcam.
- Recognizing regardless of whether individual weared cover, Mask not weared then blare sound will deliver

TENSORFLOW FRAMEWORK:

Tensor stream is an open-source programming library. Tensor stream was at first advanced by researchers and architects. It is an open-source framework to run significant learning and other quantifiable and insightful examination obligations. A python library maintains various game plan and backslide estimations and even more all-around significant learning. Tensor Flow is a free and open-source programming library for dataflow and differentiable programming across an extent of tasks.. It is used for both assessment and creation at Google, Tensor Flow is Google Brain's second-age structure. Tensor Flow is available on 64-cycle Linux, macOS, Windows, and versatile enrolling stages including Android and iOS. Its versatile plan thinks about the basic course of action of estimation across an arrangement of stages (CPUs, GPUs, TPUs), and from workspaces to lots of

servers to adaptable and edge devices. The name Tensor Flow gets from the assignments that such mind networks perform on complex data bunches, which are suggested as tensors.

KERAS:

KERAS is an API expected for people, not machines. Kera's follows best practices for decreasing mental weight: it offers solid and fundamental APIs, it restricts the amount of client exercises expected for ordinary use cases, and it gives clear and vital slip-up messages. Kera's contains different executions of regularly used mind network building squares, for instance, layers, objectives, order limits, enhancers, and a huge gathering of instruments to make working with picture. The code is worked with on GitHub, and neighborhood social events consolidate the GitHub issues page, and a Slack channel. …

DEEP LEARNING:

Critical learning techniques target gaining highlight mentioned developments with highlights from extra gigantic levels of the solicitation illustrated by the synthesis of lower-level parts. Ordinarily learning highlights at different degrees of reflection permit a framework to learn complex cutoff points orchestrating the obli…

CONVOLUTION NEURAL NETWORK:

A convolution cerebrum network is a remarkable plan of phony mind network proposed by yannlecun in 1988. One of the most notable purposes of the designing is picture request. CNNs have wide applications in picture and video affirmation, recommender structures and normal language dealing with. In this article, the model that this adventure will take is associated with Computer Vision. CNNs, as cerebrum associations, are contained neurons with learnable burdens and tendencies. Each neuron gets a couple of information sources, takes a weighted absolute over them, go it through an order work and replies with an outcome. The whole association has a disaster limit …

CONCLUSION:

As the innovation are blossoming with arising patterns the accessibility so we have facial covering indicator which might potentially add to general medical services office. The engineering comprises of MobileNetV2 classifier as the spine it tends to be utilized for high and low calculation situations. Our facial covering discovery is prepared on model, and weare utilized OpenCV, Tensor Flow, Kera's and python to distinguish regardless of whether individual is wearing a veil. The model was tried with picture and ongoing video transfer. The precision of model is accomplished and, the streamlining of the model is nonstop cycle.

REFERENCES:

•[1]. B. QIN and D. Li, "Recognizing facemask-wearing condition utilizing picture super-goal with characterization organization to forestall COVID-19", May 2020, Doi: 10.21203/rs.3.rs-28668/v1.

•[2]. N. Ud Din, K. Javed, S. Bae, J. "YiA novel GAN-based network for exposing of veiled face

IEEE Access, 8 (2020), pp. 4427644287", 10.1109/ACCESS.2020.2977386

•3]. Xin, M., Wang, Y. "Research on picture characterization model in view of profound convolution brain organization". J Image Video Proc. 2019, 40 (2019).

•[4]. Sultana, F., A. Sufian, and P. Dutta. "A survey of article location models in view of convolutional brain organization." arXiv preprint arXiv:1905.01614 (2019).

•[5] R. Sujatha, Jyotir Chatterjee and AboulellaHassanien, "An AI philosophy for determining of the COVID-19 cases in India," Apr 18, 2020. [Online]. Available https://www.techrxiv.org/articles/preprint/A_machine_learning_

methodology_for_forecasting_of_the_COVID-19_cases_in_India/12143685/1. [Accessed Feb. 10, 2021]

10.1109/ICACA.2016.7887965

•[6]. G. Sikander, S. Anwar and Y. A. Djawad, "Facial element location: A facial evenness approach," 2017 fifth International Symposium on Computational and Business Intelligence (ISCBI), Dubai, 2017, pp. 26-31, Doi: 10.1109/ISCBI.2017. 8053538.

•[7]. M. Khaliluzzaman, M. F. Alam and T. Ahsan, "Human facial component discovery in light of skin tone and edge naming," 2016 International Conference on Innovations in Science, Engineering and Technology (ICISET), Dhaka, 2016, pp. 1-4, Doi: 10.1109/ICISET.2016.7856487.

•[8]. R. Guo and H. Qi, "Facial element parsing and milestone recognition through low-rank network deterioration," 2015 IEEE International Conference on Image Processing (ICIP), Quebec City, QC, 2015, pp. 3773-3777, Doi: 10.1109/ICIP.2015.7351510.

•[9]. S. R. Benedict and J. S. Kumar, "Mathematical formed facial component extraction for face acknowledgment," 2016 IEEE International Conference on Advances in Computer Applications (ICACA), Coimbatore, 2016, pp. 275-278, Doi:

[10]. S. Lai, Z. Chai and X. Wei, "Further developed Hourglass Structure for superior Performance Facial Landmark Detection," 2019 IEEE International Conference on Multimedia and Expo Workshops (ICMEW), Shanghai, China, 2019, pp. 669-672, Doi:10.1109/ICME W.2019.00130

[11]. T. Shreekumar, N. V. Sunitha, N. Suhasini, K. Suma, K. KArunakara, "Blur and Noise Removal from the Degraded Face Images for Identifying the Faces Using Deep Learning Networks", International Conference on Artificial Intelligence and Sustainable Engineering 2022, pp 325–341, DOI: 10.1007/978-981-16-8546-0_27

[12] Khan, Mr TH Feiroz. "Detecting Phishing Attacks using NLP." *Turkish Journal of Computer and Mathematics Education (TURCOMAT)* 12.2 (2021): 369-372.