Name : RAMAVATH SURESH

Email id : ramavathsuresh2000@gmail.com

MAJOR- PROJECT

THEFT PREVENTION USING AI

1) Which Neural Network and why?

CNN(**convolutional neural network**) because it is a type of artificial neural network used in image recognition and processing that is specifically designed to process pixel data.

2) Which optimizer and why?

I have chosen Adam optimizer because Adam learns the learning rates itself, on a per-parameter basis

3) Which accuracy metric and why?

“Accuracy” metric is used because accuracy calculates the percentage of predicted values (yPred) that match with actual values (yTrue). For a record, if the predicted value is equal to the actual value, it is considered accurate. We then

calculate Accuracy by dividing the number of accurately predicted records by the total number of records

4)Which loss function and why?

I have chosen ‘categorical_crossentropy’ because ' 'categorical_crossentropy’ loss function is an optimization function which is used in case of training a classification model which classifies the data by predicting the probability of whether the data belongs to one class or the other class

4) Brief information on how the cleaning/preprocessing was done

I have used os library to read files from my disk,from the file I have listed my data set folder which contains two folders named as ‘Innocent’ and ‘intruder’ .I have joined both folders in my data set and labelled as 0 and 1

My data set having two categories one is innocent which contains some images of mine, and intruder contains some images of random persons that downloaded from kaggel
I have resized all images in 100X100 pixels and normalized all images

5) How data was got into the right shape

My data set folder which contains two folders named as ‘Innocent’ and ‘intruder’ .I have joined both folders in my

data set and labelled as 0 and 1 My data set having two categories one is innocent which contains some 500 images of mine, and intruder contains some images of random persons that was downloaded from kaggel
I have resized all images in 100X100 pixels and normalized all images

6) What functions/features of OpenCV were used

1. HAAR Cascade object using ‘CascadeClassifier’ function and ‘haarcascade_frontalface_default.xml’ for face detection
2. Read image using function ‘imread’ (or ‘read’ for video/ camera input) function
3. Convert in gray scale using ‘cvtColor’ function
4. Detect face using ‘detectMultiScale’ function

7) Which dataset have you used

I have used my pictures(5000 pics) to train as innocent and I have download some random pictures(5000) from internet to train as intruder

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NOTE☹

My system is hanging for a while when intruder detected and the remaining part like getting attachment of the introdure is fine