FACE MASK DETECTION

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Requirements

There are some general library requirements for the project and some which are specific to individual methods. The general requirements are as follows.

- Numpy, Pandas
- scikit-learn

- os
- pil
- Pickle
- cv2

STRUCTURE OF CODE

Data preprocessing

1. Importing Libraries
2. Mounting Google drive

Feature Extraction

3. Converting image data into array data
4. Convert array to numpy
5. Plot some dataset images
6. Save dataset as pickles
7. Load pickles
8. Total Classification counts
9. Split train and test

Using KNN

10. Make some imports
11. Prepare dataset
12. Dataset classification distribution
13. Convert numpy to dataframe
14. Datas shape
15. Normalize the data
16. Split dataset into train and test
17. Apply KNN model
18. Performance metrics
19. Accuracy Scores

SVM

20. Import Packages

21. Load dataset
22. Train test split
23. Model Building
24. Model Evaluation

CNN

25. Import Packages
26. Load dataset processed from drive directory
27. convolution layers and Neural networks
28. Compile and train the model
29. Evaluate performance
30. Confusion matrix

PROCESS OF EXECUTION

One has to simply open the colab file and keep on running all the codes.First upload the dataset into drive into 2 folders masked and unmasked.Give path to the folder in the DARADIR.Give other paths as well wherever required.The classifiers will be trained and tested on test data.Finally user would be able to see the accuracy scores and confusion matrix of each classifier and would be able to compare the classifiers.