CSYE-7105 Parallel Machine Learning and AI

Project Topic:

Deep-fake Detection

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## Introduction:

There are a lot of rendered images and videos out there on online social platforms. This algorithm will help in detecting if a person's face is superficial or not. This could be very useful to stop the false videos spreading all over the world and can lead to ramifications. The face fabrication can be done by morphing one’s face into another person and making it look like an imposter. This type of video can spread all over social media if it turns out to be controversial making the actual person who never anticipated this can face formidable situations while going out on the road. It would be better for the social media to get notified with help of this algorithm and tag that video as unreal or fabricated so that people can get aware of it and won't be forwarding it over the other.

## Methodology:

For implementing this openCV and sklearn library will be used to train the model by taking in different facial gestures and assign a score to each video on the basis that it is fake or real. The training data will be split into test and train dataset to train the model. Another csv file will be maintained to keep track of the real and fake videos with the video filenames. Furthemore algorithm will be used to zoom the facial image and pick up all the details which will help in more accurate prediction of the deepfaked video. The parallelization will be used for distributing the function used in the algorithm with different parameters across different processes and or threads.

## About Dataset:

It consists of all fake and real videos for more than 400 and a csv file which has the data on which video is fake and which video is real. The csv will help in training the model and split it into training and testing dataset. Many videos are pretty distinguishable through eyes because there is blur formation on the face while the face makes some movements.

Dataset link: <https://drive.google.com/drive/folders/1ASJrtmqha0MVIuNg8Dtx6H8X1RWE0Le->