

DEEFAKE VIDEO DETECTION USING DEEP LEARNING

Lavaneeth Reddy, Siddhartha Talasila

Git:<https://github.com/Siddharth181/Deepfake-video-detection-using-deep-learning.git>

ABSTRACT

- This is a current real-world problem where the objective is to accurately determine if a video contains deepfake content. Research papers have shown that Human behaviors such as the natural blinking pattern of the eye is hardly mimicable by deepfake videos. Theoretical models have been discussed namely involving a mixture of CNN and LSTM.

DATA

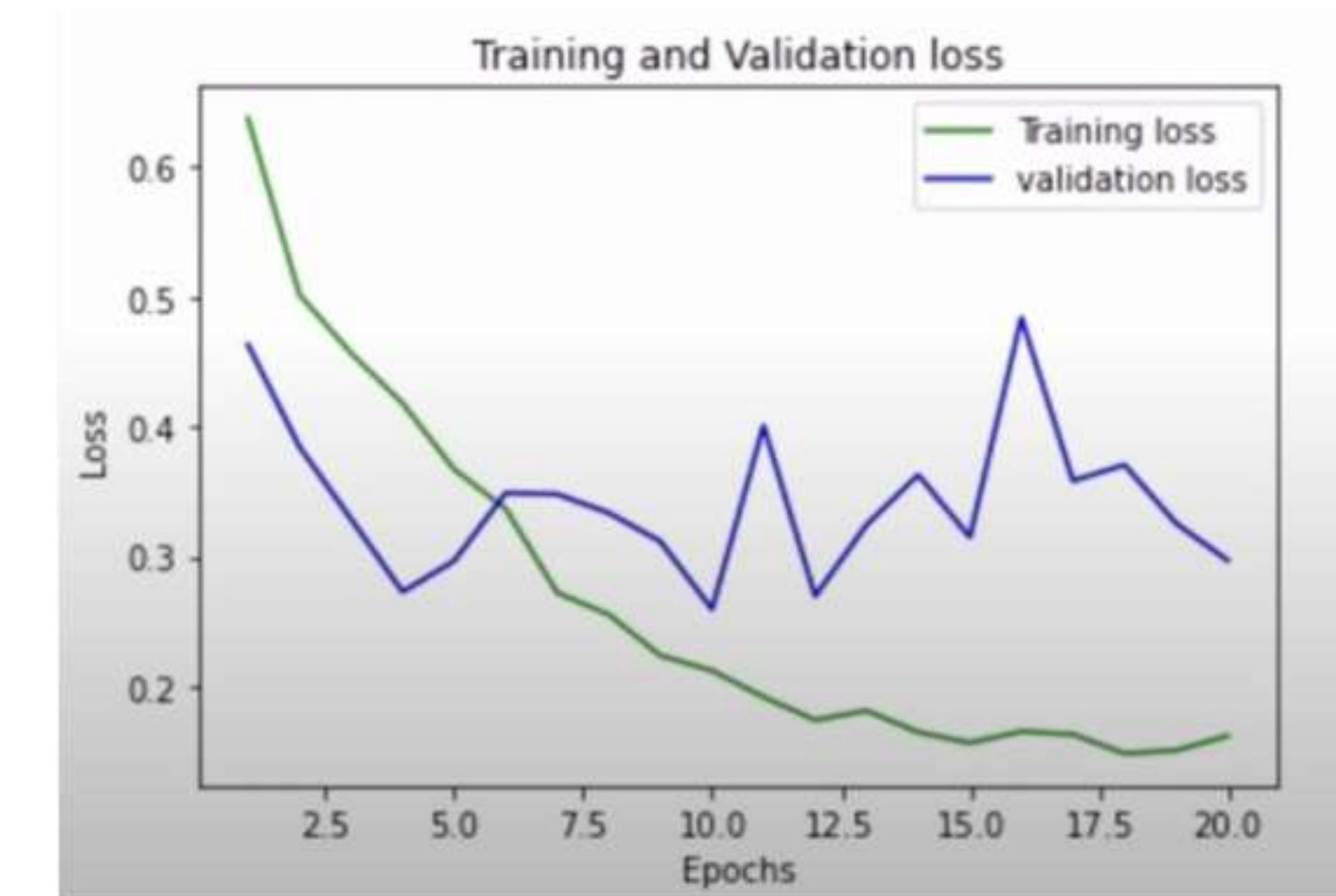
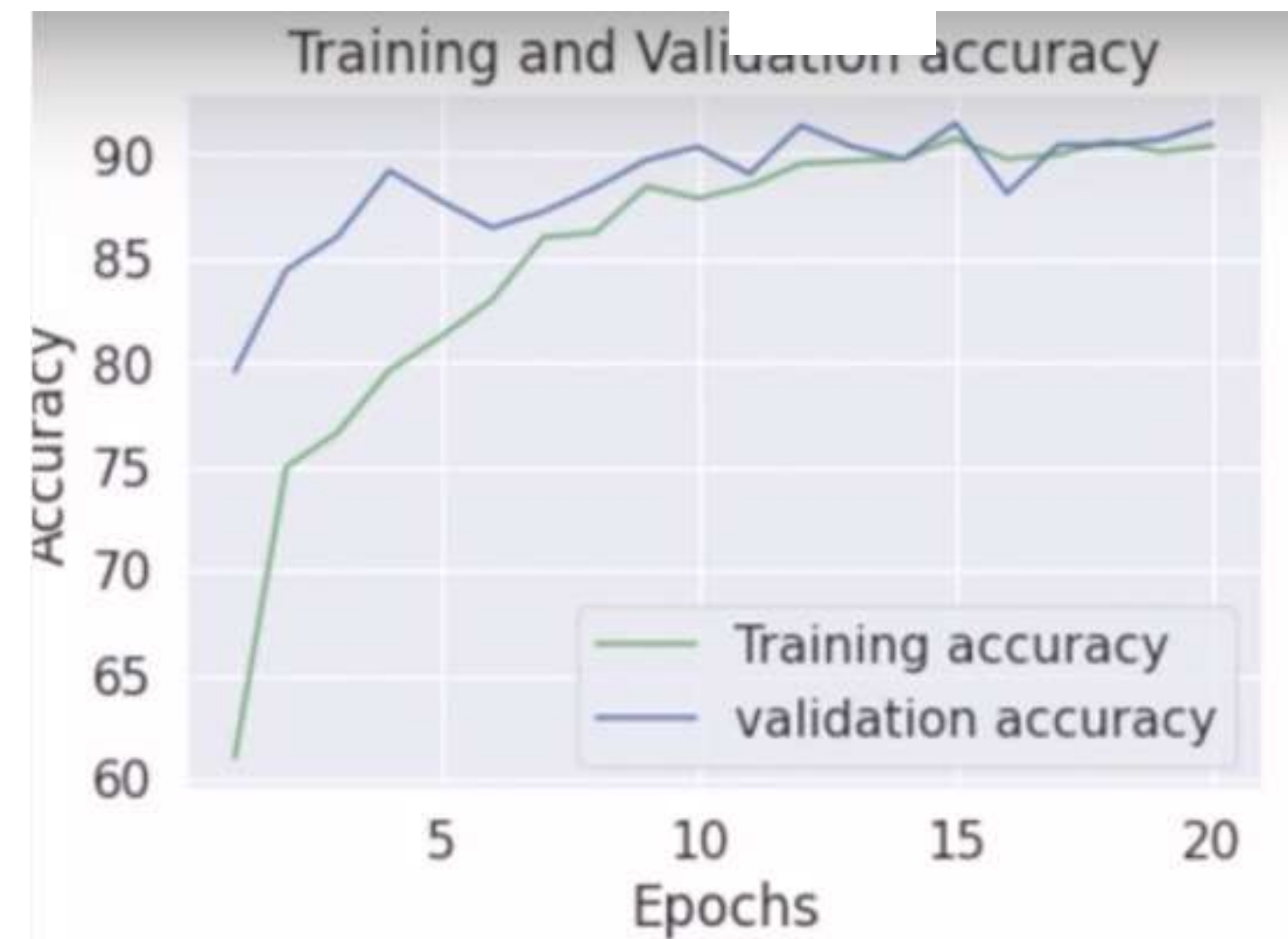
- It is a huge dataset which consists of videos with more than 700 videos. Of 2 classes normal and fake video.

METHODOLOGY

- The first pretrained facial detection model chosen is CNN and Inception Resnet models. Using Face net in python, the face feature vector were calculated for all the face in each video. The distance from each face to the centroid for its video was then calculated and acted as means of discrimination.

RESULT

- We see that the model performed poorly for a binary classification problem. The clusters are continuous and there is a lack of separation of the output. The small range of 0.46 to 0.56 cannot be used to distinctly. Although a face detection pipeline was successfully created. it was not effective



CONCLUSION

- The rest of the videos follows a somewhat normal distribution. Many combinations of CNNs and LSTM should be tried out and further tuned to solve this problem.

REFERENCES

- [1] Mulla, Rob. (2020) FaceForensicst+ Baseline (dib & noKapele.cominternet). [online](2020)
- [2] Timesier (2020) Facial recognition model in pytorch. (online] Kaggle.com. [2020]