Department of Electrical and Computer Engineering
North South University

Senior Project Design

Deep Fake Detection

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ECE Department Fall, 2021

DECLARATION

This is to certify that this Project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any other degree or diploma. Any material reproduced in this project has been properly acknowledged.

Students' name & Signature

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APPROVAL

The capstone project entitled "**Deepfake detection**" by **Asif Faruki(ID#1632478042), Mahadi Hasan Bhuiyan(ID#1731653642),** and **Sazzad Alam(ID #1611200642)** is approved in partial fulfillment of the requirement of the Degree of Bachelor of Science in Computer Science and Engineering in January and has been accepted as satisfactory.

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ABSTRACT

Deep fakes are the end result of virtual deception to create convincing motion pictures to mislead the viewer. To accomplish this, high-intensity mastering algorithms based entirely on autoencoders or GANs are used, which can be easily accessible and correct year after year, resulting in fake motion pictures that are difficult to distinguish from real ones. "Seeing is believing" is now not actual, and this has far-accomplishing implications for many aspects of our lives. Deepfakes are getting easier and easier to create as the generation advances. In truth, some of it could be carried out with an app in the palm of your hand. Deepfakes are tough to spot. Deepfakes have grown hard to detect with the naked eye. Deep learning-based video modification tools have grown more widely available in recent years. People can simply learn how to create deep fake videos with victims and target images with little to no effort. This poses a significant social issue for everyone whose images are publicly accessible on the Internet, particularly on social media platforms. According to a recent Google survey conducted from December 2018 to December 2020, the number of online deepfake movies increases every day. In December 2020, there were 85,084 videos online, compared to 7,964 videos in December 2018. As a result, it is rapidly growing. There are several methods to detect deep fakes. The objective of this paper is to expose deep fakes with deep learning techniques. Inception-ResNet-v2 was used to detect deep fakes, which is a deep learning technique. The detection has been done with the use of 3 datasets, which have been taken from Kaggle and GitHub. Deepfake was detected using Python 3, Google Colab, and Keras as the frameworks. We have found 98% accuracy by using Inception-ResNet-v2 with the datasets. Deep learning algorithms have advanced to the point where it's now feasible to create splendid-practical pictures and movies, called "deep fakes." Those deepfakes have the capacity to attain a massive

target market and have negative effects on our society. In spite of the fact that a variety of efforts have gone into detecting deep fakes, their performance pales in comparison to ours. In this project, we endorse the use of deep learning to find a residual network architecture for deepfake detection in an adaptable way. This, inception-resnet-v2, is one of the best methods for detecting deepfakes using deep mastering. In comparison to advanced techniques, our proposed approach is significantly less expensive competitive prediction accuracy based totally on our studied search space.