



Senior Design Project

Deep Learning Technique To Understand And Analyze Deep Fakes

(499A&B)

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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.

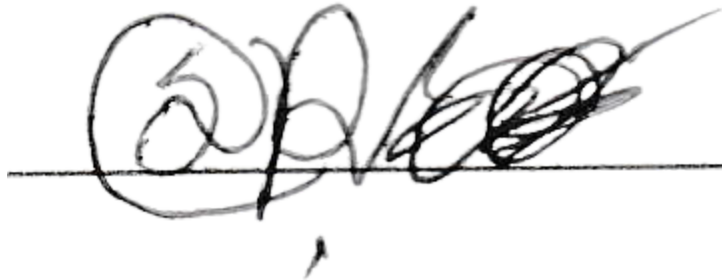
Students' name & Signature

1. **Nayan Dhar**
2. **Riaz rahman rafi**
3. **MD.Shirajul Islam Shadhin**

APPROVAL

The capstone project entitled “**Deep Learning Technique To Understand And Analyze Deep Fakes** ” by **Nayan Dhar (ID#1610410042)**, **Riaz rahman rafi (ID#1620590042)**, and **MD.Shirajul Islam Shadhin (ID #1620701042)** 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.

Supervisor’s Signature

A handwritten signature in black ink, appearing to be 'M. Monirujjaman Khan', written over a horizontal line. The signature is stylized and somewhat cursive.

Dr. Mohammad Monirujjaman Khan

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Department Chair’s Signature

Dr. Rezaul Bari

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ACKNOWLEDGMENT

First of all, we wish to express our gratitude to the Almighty for giving us the strength to perform our responsibilities and complete the report.

The capstone project program is very helpful in bridging the gap between theoretical knowledge and real-life experience as part of the Bachelor of Science (BSc) program. This report has been designed to have practical experience through theoretical understanding.

We also acknowledge our profound sense of gratitude to all the teachers who have been instrumental in providing us with the technical knowledge and moral support to complete the project with full understanding.

It is imperative to show our appreciation for our honorable faculty member Dr. Mohammad Monirujjaman Khan for his undivided attention and help to achieve this milestone. Also, our gratitude is divine to the North South University, ECE department for providing us a course such as CSE 499 in which we could really work on this project and materialize it the way we have dreamt of.

We thank our friends and family for their moral support in carving out this project and always offer their support.

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-reaching 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