Department of Electrical and Computer Engineering
North South University

Senior Design Project

Facial Recognition Using Machine Learning

Section: **5** **Group**: **4**

1. Tabassum Mahbub Liya
ID: 1812474042
2. Mofijul Alam Ovi
ID:1821202042

Supervised by:
Dr. Mohammad Ashrafuzzaman Khan
Assistant Professor
ECE Department
Fall,2022

Declaration

It is hereby acknowledged that:

- No illegitimate procedure has been practiced during the preparation of this document.
- This document does not contain any previously published material without proper citation.
- This document represents our own accomplishment while being Undergraduate Students in the North South University.

Sincerely,

Tabassum Mahbub Liya
1812474042

Mofijul Alam Ovi
1821202042

Approval

I certify that I have read this dissertation and that, in my opinion, it is fully adequate

in scope and quality as a dissertation.

Dr. Mohammad Ashrafuzzaman Khan
Assistant Professor
Department of Electrical and Computer Engineering
North South University
Dhaka, Bangladesh

I certify that I have read this dissertation and that, in my opinion, it is fully adequate

in scope and quality as a dissertation.

Dr. Rajesh Palit
Professor & Chair
Department of Electrical and Computer Engineering
North South University
Dhaka, Bangladesh

ABSTRACT

Nowadays facial recognition strategy is a widely used method for authentication in the fast-growing digital world. Due to the advancement of machine learning algorithms,facial recognition has become the most effective, trusted, and more popular than fingerprint or any other authentication method. It is now also widely used for video surveillance or detecting any specific actions. Therefore, the industry is heavily investing more and more funds in this technology. Besides that, face recognition has a wide range of applications in fields such as intelligent security and access control, biometrics, safeguarding, verification, attendance accounting, and machine vision, among others. Face recognition has a lot of advantages over other technologies for determining a person's personality: there is no need to physically meet the person, which is the most appropriate method for mass applications, and there is no need for specialized or expensive equipment. The difficulty of recognizing and identifying a person's face using convolutional neural networks that process frames from a camera in real time or from a recorded video file, followed by the entry of the recognized individual into a database is discussed in this article. The Multitasking Cascade Convolutional Neural Network (MTCNN) is made up of three convolutional networks (P-Net, R-Net, and O-Net) that can surpass numerous face identification tests while preserving real-time performance. The proposed method for human face recognition was implemented as a software product, tested, and shown to have a 96.02% chance of being correct in real time.