NORTH SOUTH UNIVERSITY

Department of Electrical and Computer Engineering

CSE499.5 Senior Design Project

Fall 2021

Group: 1

Innovative System for Mask Detection & Distance Maintainer

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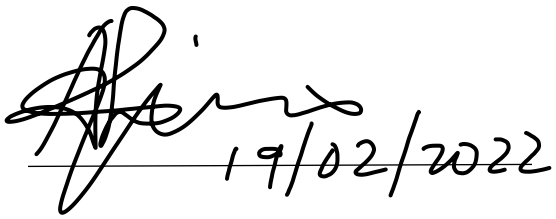
Approval

The Senior Design Project report entitled: **"Innovative System for Mask Detection & Distance Maintainer"** by **Md Nasir Uddin, ID #1811274642, Sheikh Imam Hossain, ID #1812617643 & Md. Mahfuzur Rahman Shakil, ID #1812918642** is approved in partial fulfillment of the requirement of the "Degree of Bachelor of Science in Computer Science and Engineering" and "Degree of Bachelor of Science in Electrical and Electronic Engineering" in January and has been accepted as satisfactory.



Dr. Atiqur Rahman
Associate Professor
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Date:

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Dr. Mohammad Rezaul Bari
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Declaration

We hereby declare that this Senior Design Project named **"Innovative System for Mask Detection & Distance Maintainer"** is done by **Md Nasir Uddin, ID #1811274642, Sheikh Imam Hossain, ID #1812617643 & Md. Mahfuzur Rahman Shakil, ID #1812918642**, of the Department of Electrical and Computer Engineering, North South University. Under the supervision of **Dr. Atiqur Rahman**, Associate Professor of the Department of Electrical and Computer Engineering, North South University. We further secure that this Senior Design Project report has not been submitted either in whole or part for any Degree in any university earlier. We further undertake to identify the university against any loss or damage arising from breach of the preceding obligation.

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Abstract

Covid-19 is a novel virus that has never been seen in humans before. This disease was first detected in December 2019 in Wuhan, China, and has been spreading since worldwide. The virus can easily pass from person to person through breathing & making physical contact, which is why it is spreading rapidly. To stop the transmission of Covid-19, wearing face mask and maintaining social distance are crucial disciplines to follow. But these disciplines are not being followed properly because of the lack of monitoring system that could enforce such disciplines among people especially in places of social gathering. As a result, lockdowns are being enforced & many work places, industries, garments, educational institutions are being shut down in order to stop the spread. Which is damaging our economy & productivity to a great extent. In order to prevent further damage & to recover the losses due to pandemic, we have come up with a project plan that deals with ensuring a system which is capable of detecting faces with & without masks and also capable of measuring distance between person to person & displaying the information in details on big screen for monitoring. The project is AI and deep learning-based. Various types of electronic devices & components are required to make this system. The system we are developing is productive, feasible & can be easily implemented. And for being cost efficient, it can be mass produced as well. By implementing such system in places of social gathering can prevent the transmission of the virus. As the system enforces people to wear masks & maintain certain distance from each other at gathering places, it significantly reduces the possibility of transmission. And because of the implementation of the system, lockdowns will no longer be necessary & people can continue working in their respective work places. Productivity & progress will continue, even during the pandemic. This project can bring forth significant changes in economic progress & development of the country and can assist in recovering the productive losses due to the pandemic.