Senior Design Project Report

499B (Section: 15)

Fall 2021

A Medical Community Android App, Detect COVID 19 and Pneumonia Using Deep-learning

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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.

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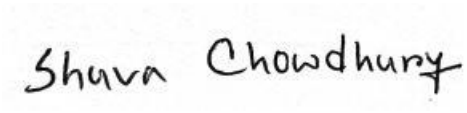

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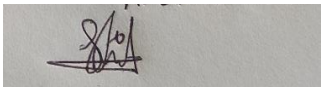

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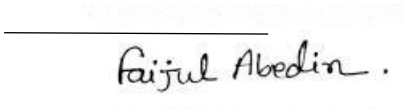

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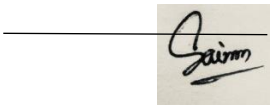

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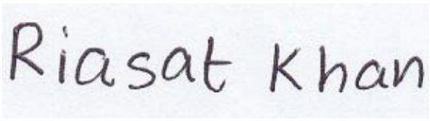
I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation.



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I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation.

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Abstract

COVID-19 is the biggest headache for the whole world, including detecting the COVID-19 affected patient. Early detection of COVID-19 may aid in the development of a treatment strategy and disease containment decisions. Also, a community through application among doctors, nurses, and patients can reduce deprivation of treatment and health care services. This paper, we make a medical community Android application for doctors, nurses, and patients that can detect COVID-19 from chest X-ray photographs developed using convolutional neural network deep learning algorithms (VGG16). The COVID-19, Pneumonia, and standard chest X-ray images are collected and joined from a public source, Kaggle. 9000 chest X-ray photographs were used for training, including 3000 COVID-19 chest X-ray photographs, 3000 Pneumonia chest X-ray photographs, and 3000 standard chest X-ray photographs. For testing, 3000 chest X-ray photographs were collected, with 1000 COVID-19 chest X-rays, 1000 Pneumonia chest X-rays, and 1000 normal chest X-rays. The accuracy of our train is 98 %, while the accuracy of our validation is 95%.