Department of Electrical and Computer Engineering

NORTH SOUTH UNIVERSITY

Senior Design Project Report

Skin Diseases Classification Using Machine Learning and Deep Learning

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Spring, 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.

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Approval

The capstone project entitled "Skin Diseases Classification Using Machine Learning and Deep Learning" by Mohammad Ashraful Haque Abir(ID#152 0679 042), Shazid Hasan Riam(ID#162 1060 042),and Mohammed Ariful Karim(ID #171 1153 042), Azizul Hakim Tareq(ID #171 1080 042) and Golam Kibria Anik(ID#171 2345 642) is approved in partial fulfillment of the requirementoftheDegreeof Bachelor of Science in Computer Science and Engineering on May and hasbeen accepted as satisfactory.

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Abstract

According to the Global Burden of Disease project, skin diseases are the fourth leading cause of benign sickness. Diagnosis of dermatological diseases presents a challenge alongside the absence of trained dermatologists and access to formal medical care. This presents a critical challenge, especially in countries with a large rural population and minimal development. This report aims to study machine learning-based classifiers for predicting skin infections for three classes from a clinical dataset. Convolutional neural network (CNN) has been proved to perform well in image classification. The performance of the neural network is compared with a benchmark multiclass SVM classifier. Additionally,an android based mobile application was implemented, which integrates the classification architecture into the application. The results analysis and possible future works are also discussed in this paper.