ABSTRACT

Skin is one of the most important parts of the human body, besides it serves to protect the organs in the body, the skin is also the most important because it reflects the human appearance, especially the facial skin. Every individual certainly wants to maintain and care for their skin, but because human skin is different, the way to care for it will be different.

In this thesis project, skin classification was conducted using Convolutional Neural Network with GoogLeNet architecture. Classification will be carried out in four classes, namely normal, dry, oily and combination. Classification will be carried out in several steps, the first is the model training process. The testing is carried out through the following stages, namely determining the dataset used, model training process, testing process, and performance testing. The purpose of this study is to analyze the performance of the system in identifying skin types using the Convolution Neural Network (CNN) method with GoogLeNet architecture.

The best case scenario from this study was obtained using a test size value of 0.2, with image resolution of 64x64, using SGD as an optimizer and an epoch value of 125. Using those number and the chosen optimizer the result of this test can classify facial skin with an accuracy rate of 99.69%, 1.6496% loss, 100% precision, 100% recall and 100% F-1 Score.

Keywords: Skin, convolutional Neural Network, GoogLeNet.