ABSTRACT

The eye is a very vital organ of sight, because it allows humans to obtain 80% of information just by looking. There are 191 million people with visual impairment worldwide and 5% of them involve children under the age of 15. It is estimated that the negative impact received by the eye will be caused by abnormalities in the eye. Several discords can occur in the eyes, including cataract, glaucoma and retina disease. If not treated quickly, it can cause blindness.

In this final project research will design a system to classify eye diseases on fundus images. The classification of eye diseases is divided into 3, namely normal, *cataract,* glaucoma. The fundus image dataset using Kaggle consists of 6.185 fundus images consisting of "normal" (2.280 images), "*cataract"* (1.505 images), "Glucoma" (1.878 images), with image files used excel and png. This research designed an eye disease system using *Convolution Neural Network* (CNN) with *MobileNetV2.*

For the classification of eye diseases in this study using CNN architecture MobileNetV2. Parameters that affect system performance based on the influence of Optimizer, Learning rare and Epoch. The tests that have been carried out, the best results were obtained using the Nadam Optimizer, Learning rate 0.0001, and Epoch 50. The best dataset is the augmentation dataset that has been preprocessed with an accuracy of 94.31%, a precision value of 94.35%, a recall value of 94.31% and an F1-Score of 94.31%.

Keywords: *Convolution Neural Network* (CNN), *MobilrNetV2,* Eye Disease.