ABSTRACT

Diabetic retinopathy is a complication of diabetes mellitus, when the sugar levels high eventually cause damage to the retina blood vessels, especially in light-sensitive tissues.

In previous research, the classification was divided into 4 classes, namely mild, moderate, severe and PDR. The classification was using Convolutional Neural Network classification method, using VGG-16 architecture, with 3668 of training data and 1728 of testing data. The accuracy value is 74.48% and the loss value is 5.06% obtained with using Adam optimizer and epoch 30.

In this research, the classification of diabetic retinopathy divided into 5 classes, namely normal, mild, moderate, severe and PDR. This classification carried out using the Deep Learning method with the Convolutional Neural Network (CNN) method. The architecture used in this research is the VGG-16. The accuracy value is 59.72% and the loss value is 0.9970, the result obtained by using parameters size 64, optimizer Adagrad, learning rate 0.01 and epoch 25.

Keywords : Diabetic retinopathy, Classification, Convolutional Neural Network (CNN), VGG-16.