Abstract

Rapid development of medical imaging that supported by development of thecnology makes a possibility to use it for assiting medic to diagnose a disease. One example case where medical imaging supported by neural network can assists medic is when they have to diagnose red blood cell disorder from blood smear. Neural network that can be used for this case is General Regression Neural Network(GRNN). This type of artificial neural networks are capable of being used for this case is the General Regression Neural Network (GRNN). GRNN is a neural network that was created by Donald F Spech in 1991. GRNN is a Multilayer Feed Forward Neural Network where information goes in one direction. Abnormalities of red blood cells to be detected by the GRNN is an abnormality in the form of morphological abnormality that is krenasi, thalassemia, and sickle cell. Haar wavelet method chosen for extracting image features that have been converted into a binary before. After the feature extraction stage, GRNN is used to distinguish the image based on four classes, namely normal, krenasi, thalassemia, and sickle cell. In this study GRNN is able to detect abnormalities of red blood cells in the image with an accuracy reaching 85% when tested to detect a 40 on a testing dataset using the parameter values 0.2 and 0.3 and the smooth function of distance is the best type to use in this case is the Euclidean distance.