

ABSTRACT

In general, anemia is popular the term "lack of blood". However, anemia is a condition the blood with hemoglobin levels that are lower than normal conditions which result in the block circulation of oxygen to the organs and cell respiration so that the body is not ideal in producing energy. Anemia detection by the laboratory can be done in several ways such as by counting the number of red blood cells, counting cells (hematocrit), and calculating the hemoglobin level. Moreover, anemia can be detected easily physically by the paleness of the palms, face and conjunctiva. But, the paleness can be caused by several things such as, lack of sun exposure, exposure to cold weather, low blood sugar levels and low of melanin pigment.

In this research, Gabor Wavelet's feature extraction method and the Support Vector Machine (SVM) method using as classifications in detecting anemia with the image of red blood cells based on their color. The research using the image of blood cells is expected to create a system that can detect anemia accurately through concentrating the color of blood cell images and hemoglobin levels in the blood based on system accuracy from test data and training results to help health professionals detect anemia.

System performance of anemia detection analyzed based on several testing, such as image dimension, parameters of gabor filter and parameters of SVM. The results of this research obtained a system that can detect the image of blood cells diagnosed with anemia and not anemia with an accuracy of 95% and computation time of 1.1 seconds.

Keywords: *Anemia, Blood Cells, Hemoglobin, Gabor Wavelet, SVM*