

ABSTRACT

Anemia can be detected through blood by using a Hemoglobin meter (Hb meter) which is invasive because the blood sample is obtained by needle pricked. It also can be detected by an alternative non-invasive method that observe the clinical conditions, can be seen from the paleness of eye conjunctiva, tongue, palms, and nails.

This final project use the pallor of the eye conjunctiva as a non-invasive method through digital images using Support Vector Machine (SVM) to detect anemia, and used Red, Green, and Blue (RGB) layers, Hue, Saturation, and Value (HSV) layers, and Grayscale layers with *.png format are used in this project. Mean, variance, skewness, kurtosis, and entropy parameters are used as an extraction features. For image classification, this final project use Support Vector Machine (SVM) method with MATLAB application.

In order to achieve the best accuracy, the variables are used in this project are the combination of parameter and SVM kernels (RBF, linear, and polynomial kernels). Overall, the highest accuracy was 72.9167% using the RBF kernel with a computation time 0.762 seconds and using 35 training data and 48 test data.

Keywords: Eye Conjunctiva, HSV, RGB, Support Vector Machine