

## ABSTRACT

Cholesterol is a fat that is in the blood that is needed for hormone formation and new cells. Normal cholesterol levels must be less than 200 mg / dL, but if above 240 mg / dL will be at high risk of stroke and coronary heart. If cholesterol levels are not detected early, chances are very large stroke and coronary heart disease, coronary heart disease is one of the many diseases that cause death. This research designing a system that can be used for early detection of cholesterol levels with short time through eye images using iridology techniques.

Eye image data is done by preprocessing which consists of resize, ROI circle crop, and convert RGB images to grayscale. Discrete Multiwavelet Transform Method (DMT) as feature extraction using the first order statistic feature which consists of mean, std value, var value, skewness value, and kurtosis value. Support Vector Machine (SVM) as a classification of cholesterol levels.

The aim of this study was to classify cholesterol levels in someone. The total data used is 90 data consisting of 60 training data and 30 test data. The system can classify cholesterol levels by three levels classification, namely normal, risky, and high cholesterol. The best accuracy is as big as 100% by using mean characteristics, Blue layer type, size of 256, type L2L2 subband, level 2, data set 20, C value 10, and type gaussian kernel. The greater the value of the dataset, the higher the accuracy and computing time is getting longer. Average processing time for the best parameters is 0.048 seconds.

Keywords: Cholesterol Level, Eye Image, HOG, ANN, Linear Regression