

ABSTRACT

Cholesterol is a fat in human blood that is needed for the formation of several hormones and new cell walls. Normal human cholesterol levels are in the range of 200 mg / dL or less, but if above 240 mg / dL will be at high risk of various dangerous diseases such as stroke and coronary heart disease. If cholesterol levels are not detected early, the risk of stroke and coronary heart disease is very large, considering that coronary heart disease is one of the many diseases that cause death. This study designed a system that can be used for early detection of cholesterol levels with a short time through the eye image.

After the data acquisition process then the eye image data is carried out by a preprocessing process which consists of the resize process, ROI circle crop, and conversion of RGB eye images to grayscale. In this study the Local Binary Pattern (LBP) method is used as a feature extraction method by recognizing images based on patterns to look for certain traits in an image that will be stored as traits of training images. And using the Support Vector Machine (SVM) classification method to find classes for each test data including the normal class or cholesterol class.

The purpose of this study was to get a normal class or class of cholesterol on someone. There are image data including training image data and test image data obtained from Al Islam Hospital. The highest accuracy of the system made is 93.33% with a combination of statistical characteristics mean, variance, skewness, kurtosis, entropy with the gaussian kernel and using image resize 512 x 512 pixels and radius value 1.

Key Words : Cholesterol, Eye Image, LBP, SVM.

