

ABSTRACT

When undergoing routine health tests we will undergo a cholesterol test which takes a long time because the patient has to undergo fasting first, where to get the test results also takes a long time too. In this study, the authors designed a system that detects cholesterol levels in the human body by identifying the iris image then extracted features using the Gray Level Co-Occurrence (GLCM) method and classified with the Learning Vector Quantization method. (LVQ)..

The iris image was taken using a cellphone camera as a data system. System data is divided into training data and test data. Each data is grouped into three categories namely normal, cholesterol and cholesterol potential. System data pre-processing in the form of cropping, resizing, segmenting, and changing the RGB image to so grayscale image. Grayscale image is extracted by GLCM method then classification process is done by LVQ. The system performs the training process in the form of training data preprocessing is then extracted features by provisions feature parameters, pixel distance, direction / angle, and quantization level. Then, the system classifies the training data by setting the epoch and hidden layer parameters to the training data again. The results of the training process in the form of the best parameters the best parameters are made in the testing process parameters..

From the test results, the system that was built was able to detect levels of excess cholesterol through iris images and classify them into three classes namely risk of cholesterol, cholesterol and non-cholesterol with an accuracy rate of 98.67% and computing time of 0.039s using 75 each training data and test data, with second order parameters used are contrast-correlation-homogeneity, pixel spacing(d) = 1, direction = 0° quantization level(n) = 8, epoch 200 and hidden layer 10.

Keywords: GLCM, LVQ, iris image, Cholesterol.