ABSTRACT

Currently coffee is the second largest commodity in the world. Coffee is one of the favorite drinks of many people, especially when processed coffee is increasingly varied. But there are still many coffee industry players who do not know the level of roasting of coffee beans. Therefore a special method is needed by classifying the roasting level of coffee beans aimed at facilitating coffee industry players and increasing public interest in recognizing the types of roasted coffee beans, especially arabica coffee.

The process that has been carried out in this classification is by taking the image of coffee beans using a device then pre-processing. The data used in this study amounted to 150 where there were 90 training data and 60 test data including 3 classes of roasting levels of coffee beans, namely, light roast, medium roast, and dark roast. Feature extraction uses the Singular Value Decomposition (SVD) method and its classification uses Learning Vector Quantization (LVQ). The coffee beans taken as data are Aceh Gayo Kawanda Arabica coffee beans, which are then classified whether according to the roasted level of the coffee beans in the extraction with the classified ones. The data and methods that have been designed are then simulated using Matlab.

The final results of this study are able to classify the level of roasted from the image of coffee beans taken. In this study using the method that has been tested it is known, for testing the greatest accuracy resize parameters obtained when using the dimensions 64 × 64 that is 90%, for the hidden layer testing has been found the best accuracy at a value of 10 with an accuracy of 90% and at epoch value is 100 with an accuracy of 90%, then an accuracy of 90% is obtained.

Keywords: coffee, roaster, Image Processing, Matlab, Singular Value Decomposition, Learning Vector Quantization.