ABSTRACT

Chicken Eggs have become one of the main consumption food of people in Indonesia, egg quality can be seen one of them based on the height of albumen / egg white, the higher albumen on the egg indicates the good the quality of the eggs. Egg quality can be measured by using a special tool called HU (Haugh Unit)

In this final project the author discusses how to detect egg quality based on HU value and yolk from chicken eggs. Image of the egg is taken from the side so it can look the high and the yolk of albumen. In this final project the author also uses object detection using DWT (Discrete Wavelet Transform) method with K-NN (K-Nearest Neighbor) classification based on Android.

In this research, two tests were performed, the first test using the DWT (Discrete Wavelet Transform) method with K-NN (K-Nearest Neighbors) Classification and the second test based on the HU value treshold. There were 33 images of eggs, with 11 class of AA eggs, 11 eggs A, and 11 eggs. So the best accuracy was 90.9% and computation time was 0.4975s using DWT method (Discrete Wavelet Transform) with decomposition level 1 on subband LL with K-NN (K-Nearest Neighbors) classification using euclidean distance at K = 1. While the second test obtained an accuracy of 87.87% by using the HU value treshold which divided into three classes, AA has a value of HU > 72, class A has a HU value of 60-71 and class B has a HU value of 31- 59.

Keyword: Android, Discrete Wavelet Transform (DWT), Egg, K-Nearest Nighbors (K-NN), Micrometer Haugh Unit (HU).