

## ABSTRACT

Livestock is divided into two, by size, small and large. Examples of small-scale animal stocks consist of fish, poultry, rabbits, etc. In the weighing process, weighing the livestock body weight on a small scale can be directly done easily compared to weighing the body of livestock on a large scale. Many methods are used in weighing large-scale livestock such as beef cattle. One method is conventional and the weight of this cow is called carcass. This method still has various constraints. The development of Technology, Information and Communication provides a new breakthrough in assisting the process of weighing cows by using digital image processing. Digital image processing can be done by using certain algorithms that can recognize objects.

In this final project has been made a system that can estimate carcass weight of cow carcass with image processing. Where the image of a cow has a \* jpg format. This final project designs and implements digital image processing techniques with steps - image acquisition, pre - processing, feature extraction, and classification. The feature extraction method used is the Gabor Wavelet method. The results of feature extraction will be classified using a Multiclass Support Vector Machine (SVM) that separates 2 cow sizes into large and medium size.

Based on the implementation and testing performed, the best accuracy achieved by the system of 77.78% on test 8 test images with the average computation time required for 25.66933 seconds. The system in this final project has a better accuracy level than previous research using K - Means Clustering segment method which has 74% accuracy and Linear Regression method which has 71.4712% accuracy. However, this research is still less compared to previous research using Graph Partitioning segmentation method with 82.19% accuracy and Mean Shift segmentation method with 89% accuracy.

Keywords: Carcass, Feature Extraction, Gabor Wavelet, SVM Multiclass