

## ABSTRACT

*Based on the livestock size are divided into two parts, where firstly the small one and the other the large one. Whereas the small one consists of poultry, sheep, goats, rabbit, etc. Measuring in the small animal weight could be directly weight, because very easier than the large one. To measure the weight of large animal, especially beef cattle, there are some differences. The body length, chest circumference, height and width of this animal is could be estimated. Any kind of method in measuring the weight of livestock are calculated systematically. The technical information for analyzing of beef cattle weight which call a digital image processing could be used, because it can analyze via photograph system. By using digital image processing with specific algorithms could be recognized certain objects.*

*This final project design and implementing application with the digital image processing techniques that can facilitate the prediction and classification of carcass weight, with the steps : pre-processing, image segmentation, feature extraction and classification. Image segmentation method that used is combining K-Means Clustering and Active Contour Model. Fitur extraction that obtained is chest circumference, body length and using Multiclass SVM classificaton. The number of data samples as many as 100 image training and 17 image test.*

*This final project research results get the value of the best accuracy with a range of 0,1-0,9 with the best result in 0,5 ratio is 87,53% and computational time of 8,26 seconds. It is expected that the ability of this system can be a comparison of systems that use other methods and help provide the benefits to the world of the cattle farm in Indonesia as the right accuracy standards to predict and classify the beef cattle weight.*

***Keyword : Carcass Weight, Image Segmentation, K Means Clustering, Multiclass SVM***