

ABSTRACT

Palm Oil (elaeis guineensis) is an important component of the Indonesian economy, especially in its palm oil production. Manual testing of the ripeness quality of oil palm fruit requires a lot of time and effort and has the potential to cause errors. Therefore, technology was created to help automate testing to increase productivity. This study aims to implement the Support Vector Machine (SVM) algorithm in predicting oil palm fruit images and finding accuracy values in testing its models. This study also uses Histogram of Oriented Gradients for feature extraction. The study was conducted by preprocessing 1389 images data and then the results will be used in HOG feature extraction. The results of feature extraction are then divided into 80% training data and 20% test data. The training data is then used to train the SVM model and the test data will be used to test the trained SVM model. The results obtained from this study, namely the implementation of the Support Vector Machine algorithm, successfully predicted the class of palm oil fruit images and also produced an accuracy value of 89.57% in classifying palm oil fruit images labeled ripe, unripe, and rotten.

Keywords: *Palm Oil, Support Vector Machine, Histogram of Oriented Gradients, Image*