

ABSTRACT

The final project of the detection character code label goods on IT Telkom using 2D Gabor wavelet filter and k-nearest neighbor. Character is detected the letters B,C,E,G,K,L,M,P and numbers 0-9.

Detection of system IT Telkom code label goods that are designed in this study consists of three parts of the system, that is: pre-processing system, systems feature extraction and classification system. Pre-processing system has purpose to increase the quality of the input image to be detected, in this final project using bwareaopen, bwareaclose, and imdilate. Feature extraction system aims to take the feature vector of an image which would then be classified, in this final project using 2D Gabor wavelet filter. While the classification system aims to classify the images included in the letters B,C,E,G,K,L,M,P and numbers 0-9.

After all three parts of the system is implemented in software, then the next step to do the training process. In the training process used 90 images, and segmented image after it is first classified in the letters B, C, E, G, K, L, M, P and the numbers 0-9, then stored as a database where the images obtained after the database can be tested and the type of character can be obtained from the results of image segmentation code label goods on IT Telkom. The system was tested by using 10 different images that are 150 characters in the tenth image. Accuracy is calculated based on the character systems are tested properly tested against all the characters, all characters are derived from the detection and segmentation of the image of IT Telkom code label goods. The resulting accuracy of the system at this final project is 93.34% highest in a single image of IT Telkom code label goods are tested and the lowest 60% in the two image code label Telkom IT goods tested.

Keywords: *code label goods, character detection, Gabor wavelet, k-nearest neighbor*