

## ABSTRACT

*Today, we found a growing number of crimes where a person have forged the signatures on important documents. Therefore, to avoid crime, handwriting began to be involved to show the authenticity of the document owner. By involving a handwriting that was written directly by a person, it will be very difficult for criminals to forge handwriting, because handwriting of each person must have the characteristics, both from the type of writing and indentations formed by hand to carve the text. The application of handwritten character recognition technology will be very useful, for example to prove the authenticity of a person's handwriting or for forensic analysis.*

*In this final project, research conducted handwriting recognition process (handwriting recognition) using Wavelet Transformation method and process of character recognition using K-Nearest Neighbor method that can distinguish of handwritting from different person. Input image as .Jpg format. Then the noise arising in the image of the handwriting is eliminated by performing the process of denoising. After feature extraction was performed using the wavelet transform to get the characteristic vectors. The resulting feature vector becomes the input for the K-Nearest Neighbor.*

*To improve system performance, then tested against the system. Testing is done by performing an analysis of several parameters. These parameters are block size and the overlap in block overlapping, and the mother wavelet in the wavelet decomposition level, distance and value of K in KNN that produces the best accuracy on the system.*

*From the results of performance testing system, it is known that the system performance to achieve the highest accuracy when using the feature extraction system with a single sentence with 10x10 block size, the overlap 7, mother Haar wavelet, decomposition level 1, the city block distance and the value of  $K = 3$ , system in order to obtain accuracy of 96.8254% to the overall computing time for 15.254501 seconds.*

**Keywords :** *handwritting, Wavelet Transform, K-Nearest Neighbor.*