ABSTRACT

The system of identity was using finger print has been applied extensively to various necessity, including in the forensic field, making of identity cards, and identifying criminal behavior for law enforcement. The use of a line as a result of the identification of evidence is sufficiently effective because of its universal, unique, and permanent nature in each human being.

Research is done with digital engineering techniques. The process of identifying generic trends with the pre-processing process, then proceed with extraction with the Histogram of Oriented Gradients (HOG) method. The HOG is a feature or method used for the retention of information in the form of a copy of an image that is not known to be of immigrant gradient and its position. Then, terminated by the classification process using the K-Nearest Neighbor (KNN) method.

In the Final Project research, testing with 400 training image samples and 100 samples of fingerprint test images obtained 80% accuracy with an average computation time of 0.556 seconds for 100 test data. It is expected that the results of this study can be developed with various forms of identity or other platforms so that the authors hope that the system can be classified into textures based on the text of each different type of learning.

Keywords: *Sidik Jari, Image Processing, Histogram Of Oriented Gradients, Matrix Laboratory, K-Nearest Neighbor.*