ABSTRACT

Individual identification is an important aspect in various fields, such as digital security and forensics. One of the biometric methods that is being developed is identification using lip prints, because they have a unique and permanent pattern. However, there are still not many systems capable of processing lip print images effectively to produce accurate identification. The main problem in this research is how to design an individual identification system based on lip prints that can detect accurately and efficiently through digital image processing.

This research offers a solution in the form of the application of Convolutional Neural Networks (CNN) method in the digital image processing of lip prints. The process includes stages of image preprocessing, feature extraction using CNN, and classification of lip print patterns based on the trained learning model. This system is designed to recognize the distinctive features of lip prints in order to match them with the data stored in the database.

The test results show that the developed system achieved an identification accuracy of 100% with a precision rate of 100%. This proves that CNN-based digital image processing can be an effective alternative identification technology and has the potential to be further developed on a larger scale.

Keywords: CNN, Individual Identification, Biometric Classification, Image Processing, Lip Print.