ABSTRACT

The case of murder or robbery is still common in Indonesia, and in some case we need for investigation to identify the perpetrators or victims, but under certain conditions cannot get Identity. Like these conditions may not find the fingerprint or the DNA of the perpetrator. In this case the lip print can be used as a tool to identify the perpetrator or victim.

This final task has a goal of knowing the parameters and methods that are better than the previous research method. The system will be designed using Multi-level Gradient Vector as the feature-extraction method and K-Nearest Neighbor (K-NN) as a clasifier. The lip print image used was the result of the acquisition using a Sony a5100 mirrorless camera, with a formal photo-taking procedure. The amount of data used is 400 photos from 40 individuals where each individual produces 10 photos, with a division of 320 photos as a training data and 80 photos as test data.

The result of this research is Individual detection system which is able to display the name of the individual. The resulting from the system is the highest accuracy of 91.25%, computational time of 3.25 seconds with the cell parameters 4 x 4, block 2 x 2, bin 9 and using Euclidean distance measurement with a value of k = 1.

Keywords: *forensic odontology, lip print, Multi-level Gradient Vector, K-Nearest Neighbor, identification.*