ABSTRACT

Forensic is a field of science that helps the individual process for the benefit of the law. Bite mark are bite marks which found on victim's organs and criminals. It is mostly found in cases of violence, rape and child abuse. The obstacles to the bite mark identification process is the process that takes a long time and to analyze it by using the invisible. Therefore, it is imperative that bite mark pattern image processing be used to obtain accurate identification of the sex of the perpetrator or the victim of crime by taking a short time.

In this Final Project, the system is able to identify bitemark pattern image into an output in the form of sex of the perpetrator and the victim of crime. The classification feature in this final project using Discrete Wavalet Transform (DWT) method, generally is image decomposition at subband frequency of the image where the component is produced by decreasing the decomposition level. This Final Project also uses the K-Nearest Neighbor (KNN) classification method, K-Nearest Neighbor is looking for the closest distance between the data to be evaluated with the nearest neighbor in the training data.

From the test results that have been done on the system was able to identify the bitemark to the right sex of a person with the method of extracting characteristics DWT using decomposition level 5 and LL filter. While in the process of classification K-NN type of the best distance that can be used was Euclidean and value k = 1. Image size used 800x1600 pixels. The greatest accuracy value in this test was 82,9787% with computation time 0,7078s. The canine distance parameter showed that the female canine distance was 0.95% smaller than the male canine distance. With this system the field of forensics would get the right results to identify the gender.

Keywords: Forensics, Bite Mark, Discrete Wavalet Transform, K-Nearest Neighbor