

ABSTRACT

Forensic science is the application of science to criminal and civil laws. The most commonly used body parts in forensic to identify age of a victim are teeth. Teeth are also the most reliable tools in the process of identification of age if it done properly. One of part of the tooth that can be a decisive indicator of the age of man is pulp. The size of the pulp will gradually narrowing of the circumference of the pulp volume with increasing age, caused by deposition of secondary dentin. Therefore this process happens continuously then it can be used as a parameter identification of age. In this study, teeth that is used is the first mandibular first molar teeth pulp using panoramic radiograph

In this Final Project writer has developed a system that can classify age with range 6-60 years old into 3 classes kid, teaan, adult using Local Binary Pattern (LBP) as a method of feature extraction and Support Vector Machine (SVM) as a method of classification. Then from these methods retrieved the statistical feature data so it can be classified in order to determine age.

From the test results, the system is able to identifyage based on mandibular first molar image with maximum accuracy 63,21% and time computation 0,8780 s. This result is obtained using LBP parameter that is combined with orde 1 parameters which are mean and entropy with radius = 4 , resize 512x512. For the SVM classification process the best kernel type is RBF with multiclass OAO and OAA. In this study writer also tried not to classify age into groups(54 classes) with result 8,70%.

Keywords: *Mandibula first molar, Age identification, Local binary pattern (LBP), Support vector machine (SVM), Panoramic radiography*