

## ABSTRACT

*Geographically and geologically, Indonesia is a country prone to natural disasters such as earthquakes, and volcanoes that cause many casualties. Under these conditions, the forensicotherapy team is indispensable to assist the process of identifying the victim. However, in general the number of physical victims has been damaged, it will be difficult to perform the identification process. Tooth are the hardest parts found in the mouth that are most difficult to destroy and experience the most recent changes in the natural structure of the human body, therefore in this final project the authors focus on the inner cavity of the tooth called the pulp, in the mandibular canines to estimate someone's age.*

*In this final project the author discusses how to detect human age based on the mandibular canines. There are several methods that can be used to detect human age based on the mandibular canines. In this final project the author uses the Gabor Wavelet method and the K-Nearest Neighbor (KNN) classification.*

*For this test, the test was carried out with an image consisting of 188 pieces of dental images with details of age 14 to age 60, by dividing 141 as training images and 47 as test images and then grouping them into 2 classes namely adolescents with a range of 14-25 years, and adults with an age range of 26-60 years. So that the best accuracy was obtained at 82.9787% and computation time of 0.0629 seconds using the Gabor Wavelet method where feature extraction based on texture with parameters was used: parameters characterized as one order (mean, variance, standard deviation, skewness), scale = 3, orientation = 8, downsampling = 32, and in the KNN classification parameters are used: K = 3 and cityblock distance type. And the accuracy of 63.8298% with 0.1287 seconds computing time in testing 47 classes or each age starting from 14-60, using a combination of statistical characteristics (mean, standard deviation, variance, skewness, kurtosis, and entropy), scale (u) = 5 and orientation (v) = 8, when the value of  $d_1 = 32$ ,  $d_2 = 32$  in feature extraction, and K = 1 and the type of cityblock distance in the classification.*

**Keywords:** *Panoramic Radiography, Gabor Wavelet, K-Nearest Neighbor*