

## ABSTRACT

*Indonesia Conditions were highly potential and proneness to disasters such as volcanic eruptions, earthquakes, tsunamis, floods and landslides. Data show that Indonesia was a country that has a high level of seismicity in the world, more than 10 times the level of seismicity in the United States (Arnold, 1986). High possibility of disasters in Indonesia resulted in the greater mortality rate, generally used the technique of fingerprint identification on the victims who have died. With advances in forensic science, rugae Palatina used as an alternative to identify individuals. Palatine rugae are unique each individuals with the shape, length, width, number and different orientations. Moreover, because it is located at the mouth of the anterior part of the head makes the palatine rugae have the possibility of trauma much smaller than on other body parts.*

*Digital image processing applied to the palatine rugae research to identify an individual, so that the data obtained are more accurate than data from manual calculations. This study uses a Gabor wavelet extraction methods and LVQ (Learning Vector Quantization) as a method of classification. At feature extraction step using Gabor wavelet, the original image convoluted with gabor kernel to bring up its special features while the classification stage is using LVQ with input of special feature recognizable images to be classified as a form of class output palatine rugae shape. Data used in the form of the image of the palatine rugae obtained from Faculty of Dentistry, University of Padjadjaran, Bandung - Indonesia.*

*This study uses 41 training data systems and 97 database as input of the, at the end of the study obtained forms of point, curve, circle, and bifurcated achieve maximum accuracy of 100%. With the image size 50x50 pixel obtained form accuracy in the range of 50% to 100%, meanwhile individuals achieve 100% accuracy when used hidden layer 30 and epoch 79 and the minimum computing time required is 1 minute 9 seconds.*

*Based on the results obtained, it can be concluded that the system can identify individuals through the input of a digital image of the palatine rugae with Gabor wavelet method and LVQ.*

**Keyword :** *Biometric, Gabor Wavelet, Learning Vector Quantization, Rugae Palatina.*