ABSTRACT

Forensic Odontology is an application of dental science in identification. A simple, fast, accurate, and accountable method is needed. Now another alternative for biometric identification by utilizing the rugae palatine pattern was found. Rugae palatina is an anatomical fold where the pattern is irregular. The location of the palatine rugae on the palate makes it resistant to all kinds of damage.

In this study the application of processing samples of rugae palatine images has been developed, whose image has been restored with the image registrarion method. Then, the image of the rugae palatine pattern is processed using Binary Large Object (BLOB) by classifying Learning Vector Quantization (LVQ). The identification process in this research is data recording, image registration, pre-processing, feature extraction, and classification of rugae palatine patterns.

This final project produces a system that is able to identify individuals using the rugae palatine pattern. To get best and effective parameters for system performance, testing is done regularly. The sampling procedure used is more efficient because it uses original photos of the rugae palatina pattern. So, this procedure simplifies the identification process by the forensic team even though the system's performance is still not optimal. This system classifies data into 29 classes with accuracy of 77.5862% and computing time of 0.0344 seconds. The test consists of 232 training data and 58 test data with the best parameter conditions at 300 epoch value and 80 hidden layers.

Keywords: image registration, Rugae Palatina, BLOB, LVQ