

ABSTRACT

This world can not be separated from the disaster or crime which can take casualties. At the time of this event there will be victims whose form is no longer intact. So it takes a forensic expert to identify it. Forensic science or simply called forensics is a science that is used to facilitate the examination and collection of physical evidence from the crime scene as a process of enforcing justice and personal identification. Identifying such an incomplete form can be done by identifying odontological forensics based on the introduction of unique features such as on lipstick.

On the lips there are unique pattern that vary in each individual so that it can facilitate identification. Scars and grooves on the lips are patterns that can be identified through biometric techniques. Biometric technique is a technique to identify based on body parts or human behavior, and in this final project is lip prints. Lip image that is owned by an individual has a consistent nature, is stable throughout life, and will not change either the pattern or its characteristics.

This final project aims to identify different lip fingerprint patterns using the Content Based Image Retrieval (CBIR) method with extraction of Gabor Wavelet features and Learning Vector Quantization (LVQ) classification methods. The results obtained from this final project are a program based on MATLAB (MATrix LABoratory) that is able to identify lip print patterns. The system has a performance with the best accuracy rate of 86% with a computation time of 10.7460 seconds using 50 training image samples and 36 test images.

Keywords: *Forensic, Biometric, Lips Print, Content Based Image Retrieval (CBIR), Learning Vector Quantization (LVQ)*