ABSTRACT

Indonesia is a country with high criminal and mortality rates. Cause of deaths of the victims occur from various conditions, and may appear both as a complete body or as a damaged remains, such as damaged of the lips. Victim identification in forensic odontology is made by recognising of physical evidence through odontology examination, rugae palatine, and lip print pattern. Forensic dentistry (forensic odontology) is essentials because it connects the science application and technology in the interests of identification, justice, and law enforcement obtained from the facts of various events (natural disasters and crime).

The final project studies the lip print pattern in Sundanese ethnic using three-dimensional based software using Histogram of Oriented Gradient (HOG) digital image method and Support Vector Machine (SVM) classification method. The Suzuki and Tsuchihashi classification is used to classify the lip print patterns from the Sundanese population.

The project aimed to obtain an identification method to detect lip print pattern and the variations of the lip print pattern in Sundanese ethnicity. The study showed that the accuracy of lip print detection among the students from batch 2015 in the Telecommunication Engineering Study Program, Faculty of Electrical Engineering, Telkom University, were 87,18% with a comparison time of 30,76 seconds using 2×2 cell size parameters, 2×2 block size, bin numbers 9, and linear kernel. The research is expected to have a positive contribution in the forensic odontology science in the lip print patterns identification, especially in Sundanese Ethnic.

Keywords: Lip Print Pattern, Sundanese Ethnic, Odontology Forensic, Histogram of Oriented Gradients, Support Vector Machine.