

## **ABSTRACT**

*Nowadays, human identification is developing due to the increase in crime investigation, natural disasters as well as accidents. In general, the process of human identification is done by using fingerprints. However, in the forensic odontology, the identification can be made not only by using dental but also soft tissue, such as the lips. Lips have a distinctive pattern which can be used as an alternative way in human identifying when other body parts are damaged or lost. Naturally, human will tend to protect their face at the time when the disaster or the accident occur.*

*Every individual has their own different characteristic of lip print pattern. Although the lip print pattern can be found in various objects, the identification using the lip print pattern is still limited. The detection process of lip prints pattern can be done by analysing the image of the lips captured by the camera. The study observes the pattern of the lip prints on the Sundanese Ethnic based on the classification from Suzuki and Tsuchihashi.*

*The detection of Sundanese lip print pattern will develop by using three-dimensional data processing software and processing an image which has been restored through the stages of digital image registration. Discrete Cosine Transform (DCT) used as a feature extraction method and K-Nearest Neighbor (K-NN) as classification. The results from the research showed that obtained the accuracy value is 92.59% when  $k$  is 5 by using city block distance. Therefore, this study can support the development of identification human utilise the lip print pattern, especially in Sundanese Ethnic.*

**Keyword:** *Sundanese Ethnic, Lip Print Pattern, Digital Image Registration, Discrete Cosine Transform, K-Nearest Neighbor.*