

## **ABSTRACT**

*Forensic Odontology is a branch of dentistry that studies ways of handling and examining dental proofs through teeth and oral cavity for legal purposes. Biometric techniques are required in Forensic Odontology to be able to examine dental evidence and identify individuals. The process of identification in individual done by two methods: primary identification such as DNA and fingerprint examination and secondary identification using lip prints. Lip prints has a unique and stable pattern. The patterns on the lips' mucosal surfaces of each individual are different and do not change with the age of the individual, such as fingerprint.*

*This research produced an application with Matrix Laboratory (Matlab) base that process digital image of lip pattern that is divided into 4 quadrants and 20 regions of lip then produces the output of identity data of individual. The training images that is used amounted to 50 and 36 images of testing data. There are two methods used at this research, those are the extraction method of Gray Level Co-Occurrence Matrix (GLCM) and Local Binary Pattern (LBP) method with Decision Tree characteristic classification.*

*This Final Project aims to facilitate the identification ownership process of lip prints as well as to know the best method by comparing two methods of feature extraction. The systems in this final project is the result of collaboration between the Faculty of Dentistry Padjajaran University and students of Telkom University. The results of this research obtained the best method is GLCM with accuracy value equal to 83.33333% using the second order parameter; energy, correlation, homogeneity, contrast and 8 quantization levels. The LBP results equal to 61.1111% with radius  $R = 1$  with each method using the Decision Tree classification.*

**Keywords:** *Odontology Forensic, Biometric, Lip Print Pattern, Gray Level Co-Occurrence Matrix, Local Binary Pattern, Decision Tree*