

## **ABSTRACT**

*Acts of crime keep on happening which could cause casualties. Lots of these criminal perpetrators are hard to identify, therefore it needs an identification process to find the real culprit. The identification process would be difficult if the perpetrators didn't leave anything at the crime scene, it could be either their fingerprints, a stray of their hair, or even their bite marks on the victim's body or on the things at the crime scenes. Therefore, biometrical identification is an important role in finding the perpetrators' identities.*

*Odontology Forensic is a study in dentistry for legal investigation, which often identifies a perpetrator of a crime by comparing their oral profile to the bite marks that were left on the victim's body parts, moreover this study can also identify an unidentified dead body. Bite marks is a representation of human being's teeth anatomy, which each of humans' bite marks are different and unique, so if they're being found on a dead body then we could actually identify the owner of the bite marks. There's one obstacle in identifying the bite marks, that is its process which could take forever if it's processed manually without any system. Image processing with bite marks pattern is really needed to get a more accurate result in identifying the gender of the perpetrator or the victims with a more efficient time.*

*In this final project, writer made an image processing program to identify gender through bite marks which started from Image Registration which then being segmented with Geometric Active Contour models and being classified with Decision Tree method.*

*This final project generates the highest accuracy 97% with computing time 95 seconds/image. We can conclude that the system used in this research is compatible in identifying bite marks correctly.*

**Keywords: Odontology Forensic, Bite Marks, Geometric Active Contour, Decision Tree.**