

## ABSTRACT

Death is an unpredictable occurrence. Death can happen to anyone without any exception regardless of time and place. In some death cases, the dead bodies are found incomplete with damages in some parts, making the identification process difficult. The age of a dead body is one of important factors that should be identified.

Age identification of a dead body can be alternatively done by analyzing the size of dental pulps. Located inside the oral cavity, dental pulps are protected from damages caused by external factors. This research was conducted to develop a digital image processing system of molar pulps using the Watershed method. The dental pulp images were classified using the Learning Vector Quantization (LVQ). The system was implemented in Matlab software by identifying and classifying the sizes of the molar pulps. In general, the process of age identification using molar pulps done in this research included data recording, image processing, feature extraction and classification of the molar pulp sizes.

This final project resulted in a system that could be used for age identification using molar pulps. The data used in this study amounted to 376 data divided into 4 classes based on age range. The outcome of this research was to reach an accuracy level of 76% within 0,0124 standard deviation.

**Keywords:** Molar pulp, Watershed, Learning Vector Quantization.