ABSTRACT

Forensic is a medical term which is applied to law enforcement. In several cases, the objects or human victims identified forensics are in bad condition. Therefore, tooth becomes one of solutions in identification process because it is hard and strong toward any situation. The term in forensic science that uses tooth as the object of the research is called forensic odontology.

Forensic odontology is a knowledge about tooth which is used for the term of justice. One of parameters needed in forensic ontology is age. Generally, seen from the dental pulp, it is accurately noted that the older someone grows up, the more teeth develop. The dental pulp will be getting narrowed as someone gets older, and vice versa. In this research, the researcher is going to develop a system of image processing dental molar X-Ray radiographs by using adaptive region growing approach method. Furthermore, the image of dental pulp will be classified by support vector machine. The system illustrated through software called Matlab by identifying and classifying the size of the molar dental pulp. Generally, the process of this research are collecting data, image process, character extraction, and classifying the size of molar dental pulp.

The results of this study resulted in the system accuracy of more than 80% at the OTSU 1.15 threshold adjustment, clip limit histogram equalization 0.1, polynomial kernel type, and coding one against one type in the division of data into four classes. As seen from the research that has been done, it can be concluded that the Adaptive Region Growing Approach method and the Support Vector Machine classification can be implemented in age identification using panoramic radiograph images.

Keywords: X-Ray Radiographs, Adaptive Region Growing Approach, Support Vector Machine.