ABSTRACT

Fossils are the remains of any living things that become stones or minerals as a result of being covered by sediment. One of the most commonly found fossils is the teeth. Teeth are the strongest part of the human body so they are not easily destroyed and can be well fossilized. One part of the tooth is the enamel, which serves to protect tooth from decay. The enamel itself has a varied wear pattern on every human, according to the age and type of food. This wear pattern can be used as a way to identify a human fossil.

To assist geologists in identifying sub-fossil molar more efficiently and objectively, this final assignment created a MATLAB-based image processing application that can analyze the enamel image of sub-fossil molar through feature extraction which will then be classified to identify the type of molars and age range of death of the human sub-fossil. The feature extraction method used is Curvelet Transform. As for the method of classification, Learning Vector Quantization (LVQ) is used.

As the results from system testing, an accuracy of 86.92% obtained in identifying the age range of death of human sub-fossil. As for identifying the type of molars, accuracy of 84.61% is obtained.

Keywords: *Human Sub-fossil Molar, Curvelet Transform, Learning Vector Quantization (LVQ).*