

ABSTRACT

Teeth are human organs that functioned to tear, cut and chew food that will enter the human body. When teeth are affected by disorder or disease, it will disrupt human activities. One of the tooth disorders is granuloma. Tooth granuloma is the excessive formation of granulation tissue in response to dental infection stimuli. In diagnosing granuloma, the doctor takes radiographs or x-rays from the patient's teeth to support the diagnosis. One type of radiography used is periapical radiography. In the process, doctors need to look carefully at the radiograph and interpret the results obtained. This vision is certainly limited by eye condition and proficiency that each individual is not the same. Therefore, an application is needed that can help diagnose disorders from existing radiographic results quickly and efficiently.

The purpose of this study is to create a system that can facilitate the diagnosis of granuloma through the characteristics of the radiograph image processing. The image will be read its characteristics to be grouped and obtain the result of whether it is classified as granuloma or not. The method used in this research is Gabor Wavelet method for feature extraction and Support Vector Machine (SVM) for classification.

The end result of this study is a system that capable of detecting granuloma disorders from periapical radiograph image input with the highest accuracy of 87.5% and computing time during test is 3.0 seconds.

Keywords: Granuloma, Gabor, Periapical Radiography, Support Vector Machine (SVM)