ABSTRACT

The periapical radiograph is a component that produces a detailed radiographic image of the tooth and the surrounding apex tissue. The radiographic image is very helpful for the dentist to make the diagnosis and treatment plan of the dental impaction. Dentists diagnose the radiographic image of the radiograph using the eye but because of the limitations of the human vision can cause the interpretation of each dentist differently.

In this research is made image processing method that can detect granuloma from periapikal image radiograph. System output can provide results that can assist dentists in making decisions and improve diagnosis of periapical radiography. In this research, system development is done in several stages, namely pre-processing, characteristic extraction and classification.

The method to be used in this research is Scale Invariant Feature Transformation (SIFT) as a feature extraction method. SIFT is an algorithm for detecting and explaining local features in imagery. The classification process uses the K-Nearest Neighbor (K-NN) method. K-NN is a method to classify objects based on the nearest train example. The result of this system was able to identify granuloma disease with an accuracy of 85.84% with an average computation time of 4.04 seconds.

Keywords: granuloma, periapical radiograph, Scale Invariant Feature Transform (SIFT), K-Nearest Neighbor (K-NN).