ABSTRACT

Dental health is an important thing to maintain for your health and appearance. Teeth are the first thing you see when you smile and add beauty to them. Maintain dental health by consuming vitamins derived from fruits and vegetables. Things that can damage the body, especially teeth are cigarettes. Cigarettes contain chemicals such as tar, nicotine and carbon monoxide. This substance is very dangerous for human health and things that turn bad can cause death. In addition, cigarettes contain tobacco which can damage the health of the gums so that the gums lose nutrients, resulting in flakes that have a yellow or even black color due to the burning of chemicals in the mouth.

This study uses the Histogram of Oriented Gradients (HOG) method as feature extraction and Support Vector Machine (SVM) as a classification method. HOG was chosen because it can extract images in the form of images by bringing up the value of the gray level of the pixel. And for the classification method using the Support Vector Machine (SVM) method because it can separate different objects with different classifications.

This study conducted a test with 400 dental images, which divided into 2 classes, namely smokers' teeth and non-smokers' teeth. Each class has 150 test information and 50 training information. From the results of this test, an accuracy of 86% is obtained with a computation time of 9.67 seconds. With cell size parameter 10x10, Block size 2x2 with bin numbers 9. Create Support Vector Machine parameter using RBF type.

Keywords: *Dental¸ Cigarettes, Histogram of Oriented Gradients, Support Vector Machine*