

ABSTRACT

Colorectal cancer or may be referred to as colon cancer is an aggressive type of cancer that occurs when abnormal cells grow in the lining of the large intestine (colon) or the rectum (ileum to the anus). There are several types of cancer in medical world such as colon, sarcoma, carcinoma, and lymphoma. Detection and classification of cancer is important for the prevention and early treatment so that the cancer will not increased to the higher stage.. Detection of cancer by doctors is through blood or tissue samples.

This final project aims to facilitate the detection of colon cancer based on image processing using Matlab 2015a. Feature extraction that used in this studies is Gray Level Cooccurrence Matrix.it's a method for forming a feature that are not only based on the value of pixels but also using the identifier of the texture. As well as classified using K-Nearest Neighbor.

The testing process starts from the image feature extraction is test the orientation angle and distance at GLCM. Followed by testing is pre-procesing to test some resize. Then in the classification process, there are two tests, that kind of distance and the value of the variable K in K-NN. There is additional testing, the testing of the combination of 1,2 and 3 of the 4 parameters that is contrast, correlation, energy and homogeneity. The system has been tested and got the accuracy of 75% from 138 images of the training data and 60 images of the test data that are classified into three classes, normal, carcinoma cancer, and lymphoma cancer.

Keywords: Kolorektral, Gray Level Cooccurrence Matrix, K-Nearest Neighbor, feature extraction, image classification