Abstract

Examinations to detect and classify the severity of skin cancer patients are currently carried out by trained medical personnel manually and require a long time, so that the right technology is needed to detect skin cancer early so that it can be treated immediately. With increasingly developed technology, a detection system for skin cancer can be made with image segmentation using fractal methods and K-Nearest Neighbor classification. Image data will be processed using the fractal method to find the unique characteristics of each image data. Then the K-NN classification will calculate the closest distance between the test data and the training data, the K-NN work process starts from determining the k parameter (the number of closest neighbors) then calculating the square of the distance of each object to the sample data. The classification will be divided into three classes, namely: melanoma skin cancer, nevus skin cancer, and seborrheic keratosis skin cancer. In this study, the highest accuracy was 90.7% with a computation time of 93.2 seconds by using a 512 x 512 image resize and the value of K = 1 with training image data of 300 and test image of 150, the value of K = 1 is the most optimal K value among K-NN Classification.

Keyword: Skin cancer, Matlab, Fraktal, K-Nearest Neighbor (K-NN).