

ABSTRACT

Skin cancer is one type of cancer that continues to increase in the number of cases. Prevention of skin cancer can be achieved with early detection and proper treatment. Unfortunately, early detection of skin cancer is generally still performed manually, which allows human error to occur and requires expensive costs. The problem is used another alternative is to classify skin cancer by utilizing a computer-based image system. Convolutional Neural Network (CNN) is one of the methods in a computer-based image processing system that functions to classify skin cancer images. This method produces a better performance value compared to other methods.

This final project research uses the CNN method with the VGG-16 architecture which consists of 16 hidden layers. The input image data used will be processed first using dull razor filtering which functions to remove feather pixels in the image so that it can clarify the object to be studied. The system is designed using the Google Colab platform using the Python programming language and *datasets* taken from the web *www.kaggle.com*.

Skin cancer image is first removed by removing the hair pixels through dullrazor filtering and then entering the training and testing phase of the model. From the results of system testing, the most optimal parameters are obtained, including the image size of 64*64, the optimizer using Adam optimizer, the learning rate of 0.0001, the epoch of 30, and the batch size of 16. The resulting system performance parameters are accuracy of 97.04%, loss of 0.0985, 97% precision, 97% recall, and 97% f1 score. These results state that the method used is better than previous studies which had performance below 80%.

Kata Kunci: skin cancer, CNN, VGG-16, *dullrazor filtering*, performance, *Python, Dataset*.