

ABSTRACT

Skin cancer is a type of cancer that continues to grow and is one of the most commonly detected in the world. Research on the detection of skin cancer through dermoscopy images has helped in detecting skin cancer. Detection using a computer-based image system with the CNN method provides fairly good accuracy in detecting skin cancer. CNN (Convolutional Neural Network) is one of the methods used for skin cancer image classification processing systems.

In this final project research, the CNN method is used with the EfficientNet architecture and HAM10000 as the research *dataset*. The HAM10000 *dataset* has 10015 images and has been verified 53.3% by pathologists. EfficientNet offers a compound scaling up technique in a simple but efficient way. In this research, several augmentation combinations were also carried out to enrich the HAM10000 *dataset* and also *fine tuning* to get better performance from EfficientNet.

In this study, it was found that EfficientNet can produce a minimum accuracy of 79% before *fine tuning* and 84% after *fine tuning*. In this study, the best results were also obtained with the EfficientNet B3 model with flip augmentation and *fine tuning* which resulted in an accuracy of 87.75%. This test was carried out using a *batch size* of 32, epoch 50, *learning rate* of 0.0001, and the Adam optimizer.

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