# ABSTRACT

*Melanoma skin cancer is one of the most dangerous skin cancers. This is due to the ferocity and speed with which it spreads to other parts of the body, causing death for the sufferer. It does not rule out the possibility of errors when detecting melanoma manually because it relies on the skills of observers, so processing calculations are needed to simplify and minimize errors caused by melanoma skin cancer observers. Therefore, we need a method that can help diagnose skin images automatically to differentiate melanoma skin cancer from normal/non-melanoma skin.*

*In this study, to help diagnose the presence of melanoma skin cancer, a classification based on the Inception V3 model from the Convolutional Neural Network (CNN) was used to train the original HAM10K dataset from kaggle. Before being classified, the original image must go through the preprocessing stage using the Contrast Limited Adaptive Histogram Equalization (CLAHE) technique and the augmentation stage first. The results of the images that have passed the preprocessing stage are divided randomly into three parts. The three parts are 72% for training, 10% for validation, and 18% for testing.*

*The CLAHE dataset test results with the best level of accuracy were obtained using a batch size 8 value of 90.01%, an iteration epoch 30 value of 90.69% and a learning rate value of 0.00001 of 89.67%. The results of the system evaluation show that the performance level of applying the Inception V3 architecture to the CNN algorithm for its effectiveness in detecting melanoma skin cancer is quite optimal.*

***Keywords**: Melanoma skin cancer, Convolutional Neural Network, Inception V3, Preprocessing, Augmentation, Classification.*