**Summary of the model:**

The results of the model could help us conclude that:

1. Training Set:

In the training set, since the sample size was comparatively smaller, the model was not able to understand and extract the characteristics of the data, thus the accuracy of the model was only 54%, which is relatively very poor.

1. Defining the data augmentation to a pre – trained model:

Due to a few tweaks made to the filter size, the performance of the pretrained layer was marginally better than that of the prior model; however, the loss of the pretrained network is more than the accuracy.

1. Defining the pretrained model without data augmentation:

The pretrained model on VGG16 with a training sample of 2000, where the accuracy acquired was 98.6% while the model's loss was 0.5%, is the best model for the cats-vs-dogs dataset, according to the accuracy and loss of the preceding models.

1. Conclusion:

Hyper tuning is always crucial, although this might not be true for all methods of image processing. By employing hyper tuning techniques and carrying out operations under the appropriate circumstances, we may always improve our models.