**Exercise 4.2**

Run the example in transfer.py. Then, modify the code so that the MobileNetV2 model is not initialized from the ImageNet weights, but randomly (you can do that by setting the weights parameter to None). Analyze the results from both runs and compare them to the CNN example in assignment 3.

When the MobileNetV2 model is initialized from the ImageNet weights, the validation loss and accuracy are:

val\_loss = 0.21341

acc = (for each epoch)

1. 0.7262
2. 0.7700
3. 0.8588
4. 0.8137
5. 0.9750
6. 0.8662
7. 0.8950
8. 0.8900
9. 0.9100
10. 0.8800

The validation loss and accuracy of the model that is not initialized from the ImageNet weights, but randomly, are:

val\_loss = 0.58881

acc = (for each epoch)

1. 0.5038
2. 0.7200
3. 0.7700
4. 0.8213
5. 0.7350
6. 0.5900
7. 0.5700
8. 0.6775
9. 0.7462
10. 0.5825

As can be seen above, the validation loss of the ImageNet model is lower and the validation accuracy is higher, which implies that this model provides better results.

The CNN-model from assignment 3 resulted in a validation loss of

val\_loss = 0.35811

which is lower than the random model, but higher than the ImageNet model.