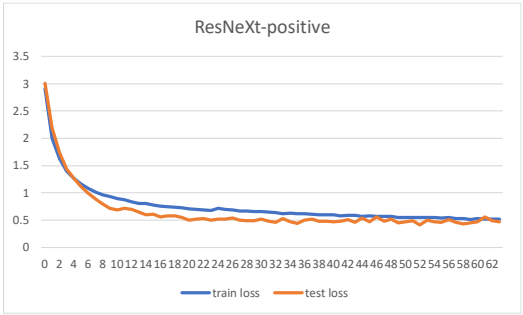
Testing Transfer Learning Result (ResNeXt, MnasNet)

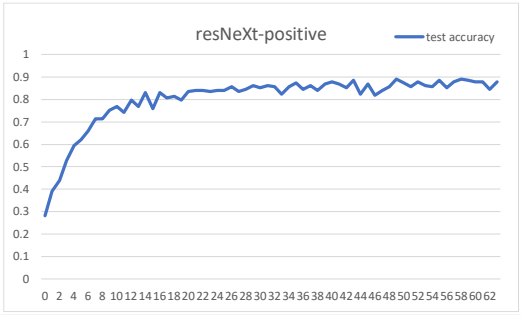
Data Augmentation:

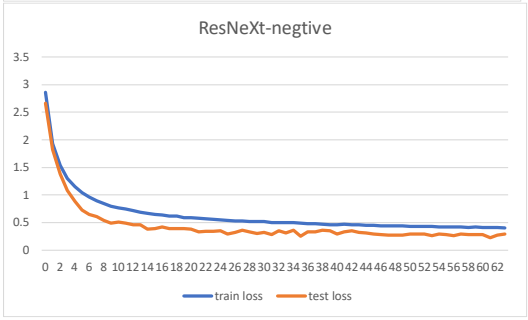
OpenCV: cv2. getAffineTransform(src,dst), cv2.warpAffine()

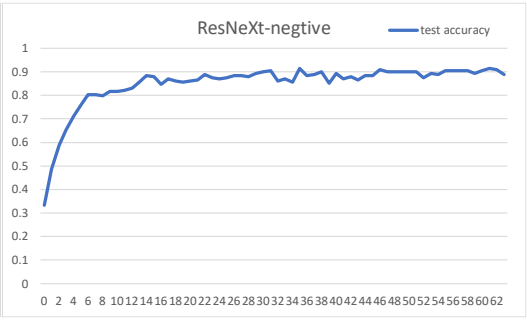
Compute the Loss of Training set and Validation set is important to avoid overfitting.

Using ResNeXt for training the positive and negative side of butterfly respectively:



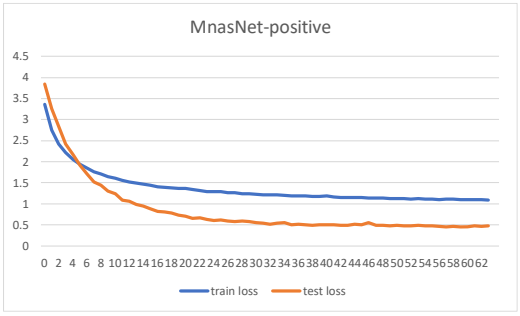


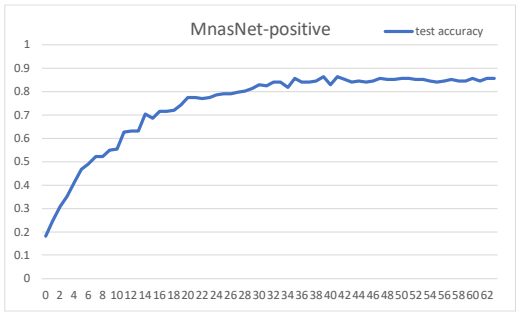


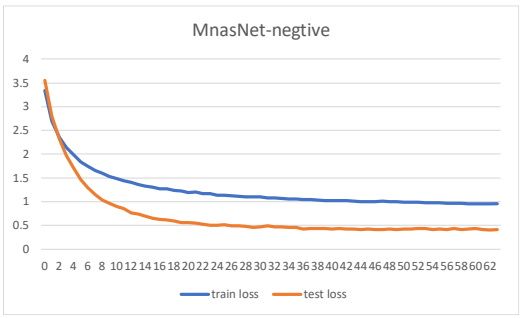


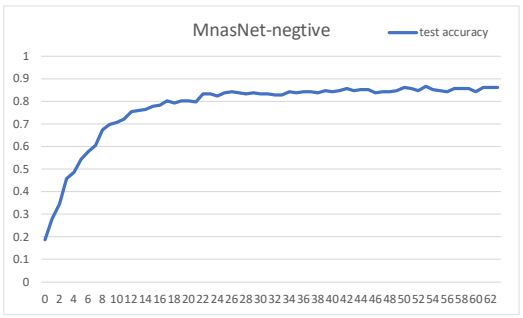
Accuracy: Positive side of Butterfly with accuracy of 89.0%, and negative side of Butterfly with accuaracy of 91.3%

Using MnasNet for training the positive and negative side of butterfly respectively:



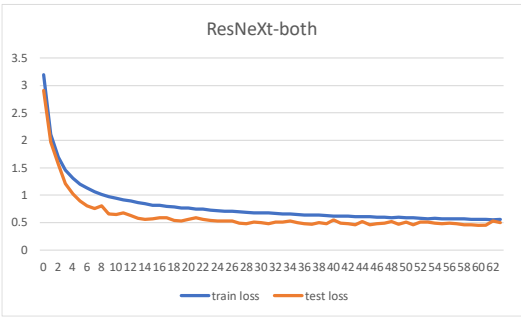


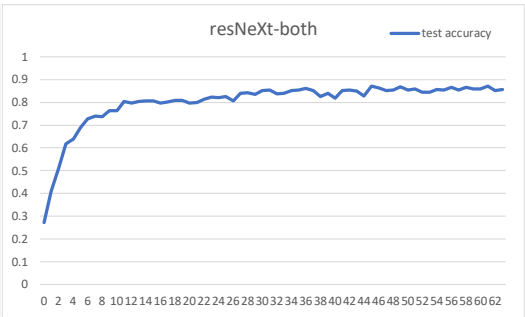


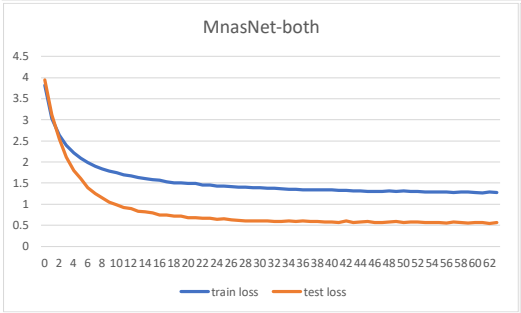


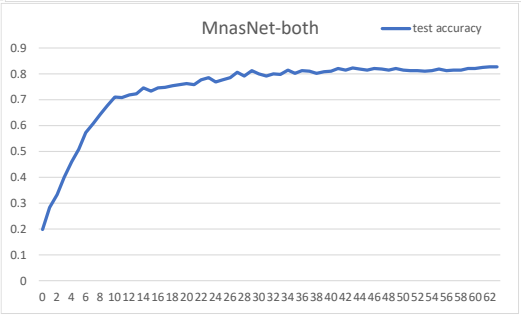
Accuracy: Positive side of Butterfly with accuracy of 85.7%, and negative side of Butterfly with accuaracy of 86.1%

Training on both side of Butterfly without dividing them into positive or negative side. Although they might be on different distribution, I still want to see how the result (accuracy) to train them together.

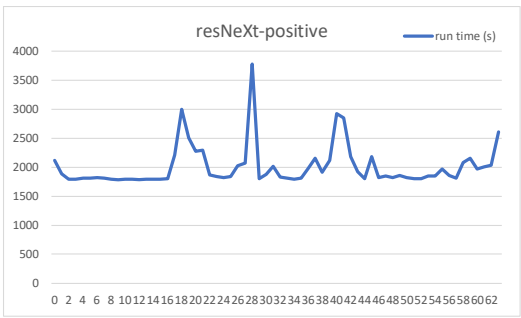


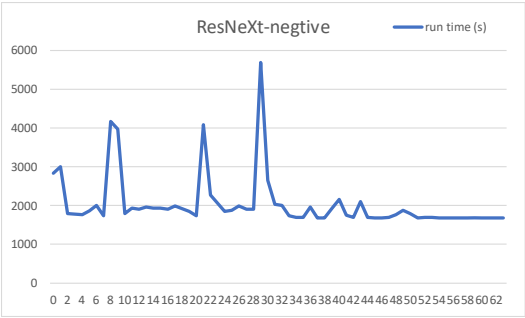


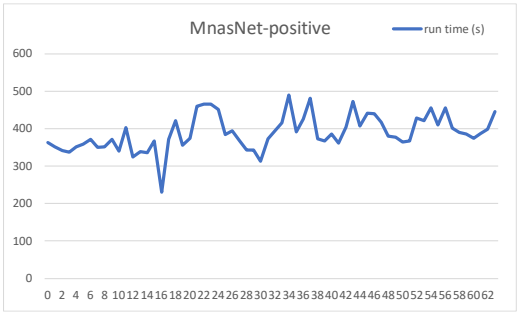


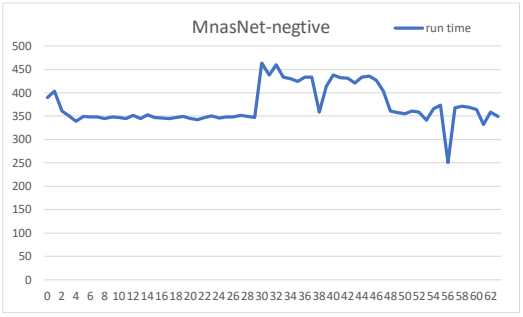


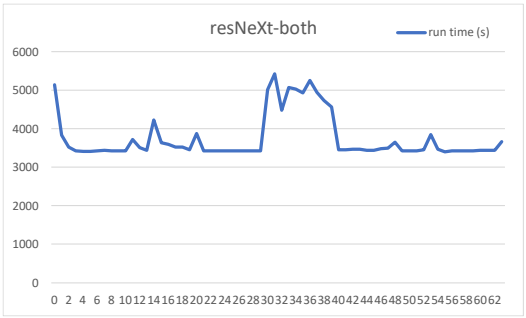
Conclusion:
The total Training time goes to 200+ hours
These are the training time vs. training epochs

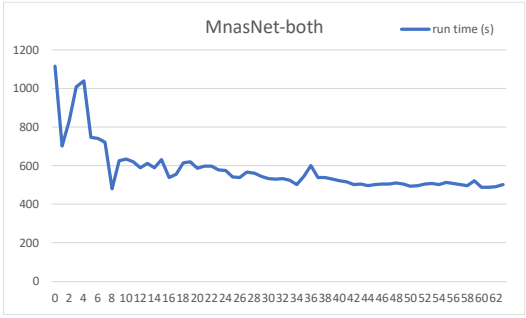





MnasNet-positive
run time (s)
600
500
400
300
200
100
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62


MnasNet-negtive
run time
500
450
400
350
300
250
200
150
100
50
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62


resNeXt-both
run time (s)
6000
5000
4000
3000
2000
1000
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62


MnasNet-both
run time (s)
1200
1000
800
600
400
200
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62