Experiment Report

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12.04 - 12.11

1 Label Testing Experiment

1.1 Experiment Objective

When I trained WHOI highpass filtering images with enhancement on AlexNet and WHOI original images, lowpass filtering images and highpass filtering images with enhancement on 3-channel AlexNet, I found that the single channel accuracy is higher than 3-channel accuracy, it's strange. I want to find out the reasons. According to Teacher Yu's advice, something maybe be wrong with 3-channel net's label because these 3 channels share one label. So, I do some experiments to judge whether the label is shuffled in different channels.

1.2 Experiment Method

I set the label from different channels: original images channel, high-pass filtering images with enhancement channel and lowpass images channel. Besides, every parameter remains unchanged (train_batchsize = 20, test_batchsize = 54, step_size = 50000, max_iter = 200000).

1.3 Experiment Result

The accuracy of 3-channel AlexNet using channelA (original images) label is 0.9463, and using channelB (high-pass filtering images) label is also 0.9463.

1.4 Experiment Summary

This experiment shows that this issue is not caused by shuffled label, the label shared by 3 channels is all same. But I still don't know why 3-channel accuracy is lower than single channel accuracy.

2 WHOI on VGG16

2.1 Experiment Objective

When I try 3-channel Cifar10, the accuracy is just a little higher than single channel net, so I want to try other network to see whether 3-channel really works well. So I decide to test this on VGG16.

2.2 Experiment Method

I trained the original WHOI images firstly on VGG16 firstly as benchmark. The parameters are as follows: train_batch_size = 4, iter_size = 8, test_batch_size = 18, stepsize = 5000, max_iter = 200000.

2.3 Experiment Result

Because of the cost of time, I haven't got the final accuracy till now.