MAMe Lab2 Transfer Learning

Xiao Fei, Lihong Ji

Parameters

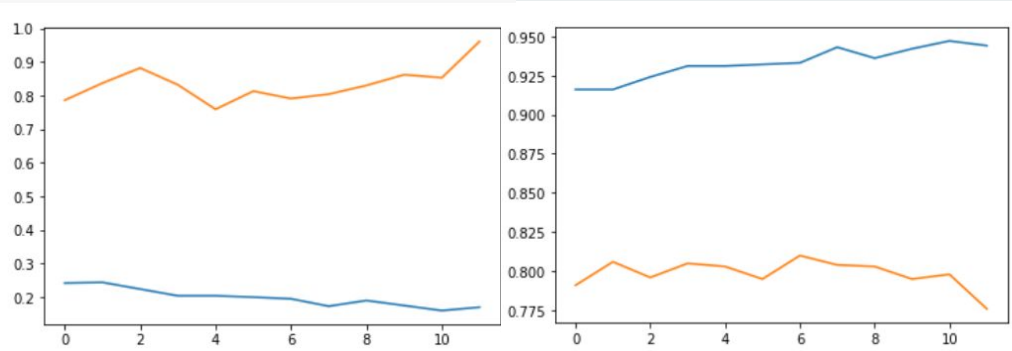
Dataset	:	MAMe_256
Resize to	:	(224,224,3)
Batch Size	:	64
Init LR	:	1e-5
Optimizer	:	Adam
DataAug	:	Rotation & Flip
LR Decay	:	0.2 per 5 epochs

vgg_16_bn

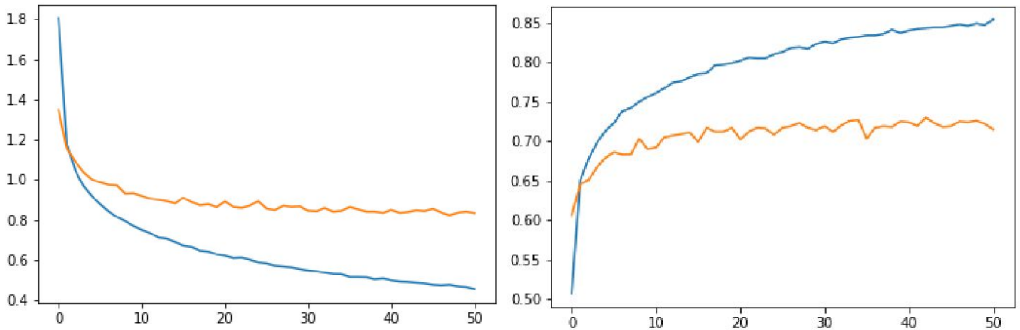
Pretrained from ImageNet

		Test Acc
[1] All Layers + FC	:	80.69%
[2] Last 2 Conv Layers + FC	:	72.47%
[3] Last 1 Conv Layer + FC	:	**73.00%**
[4] Freeze All + FC	:	72.40%
[5] Freeze All from [1]+ SVM	:	**82.30%**

SVM rbf: pca dim 1024 -> 20 (94.3%)



[1] Loss and Accuracy



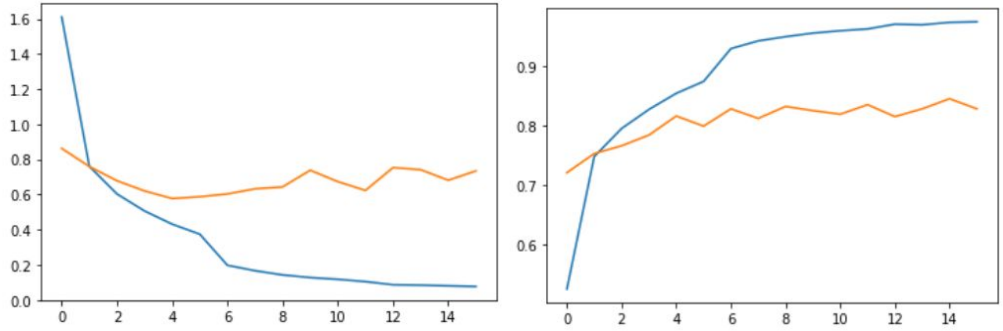
[3] Loss and Accuracy

vgg_19_bn

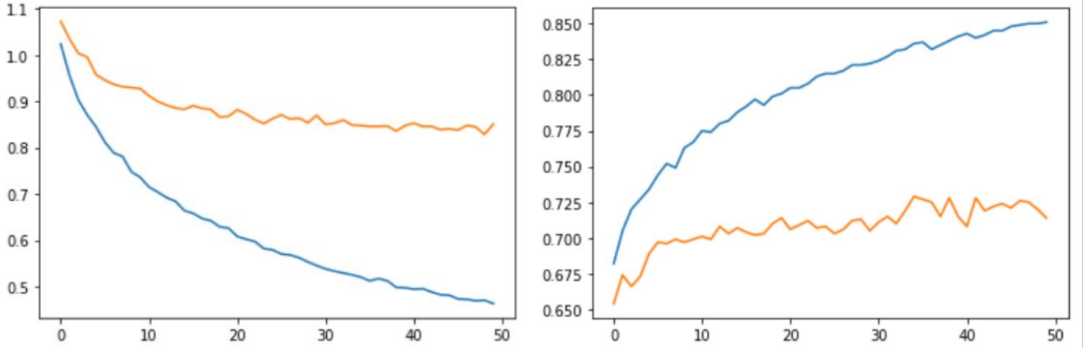
Pretrained from ImageNet

		Test Acc
[1] All Layers + FC	:	83.07%
[2] Last 2 Conv Layers + FC	:	70.74%
[3] Last 1 Conv Layer + FC	:	**73.00%**
[4] Freeze All + FC	:	70.89%
[5] Freeze All from [1]+ SVM	:	**85.53%**

SVM rbf: pca dim 1024 -> 85 (90.27%)



[1] Loss and Accuracy



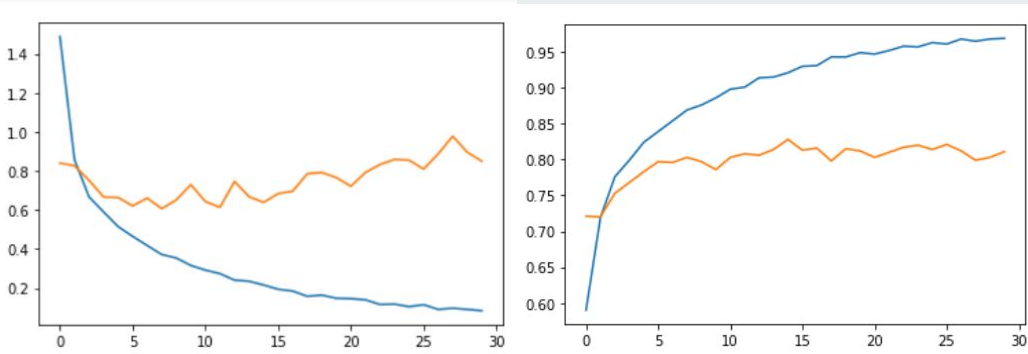
[3] Loss and Accuracy

googlenet

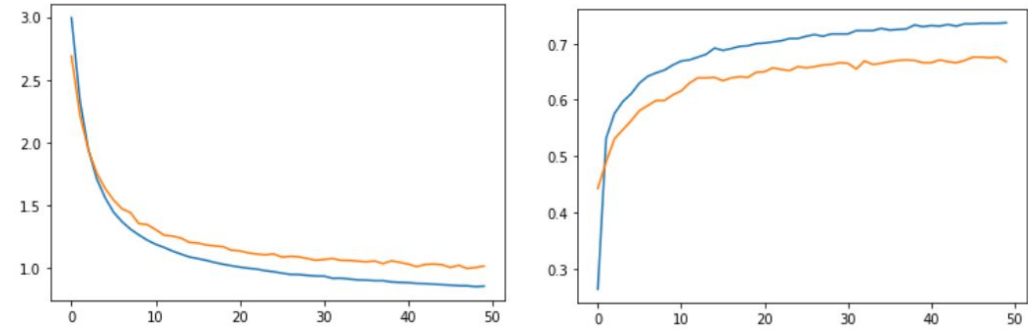
Pretrained from ImageNet

		Test Acc
[1] All Layers + FC	:	81.65%
[2] Freeze All + FC	:	**66.84%**
[3] Freeze All from [1]+ SVM	:	**83.58%**

SVM rbf: pca dim 1024 -> 80 (91.15%)



[1] Loss and Accuracy



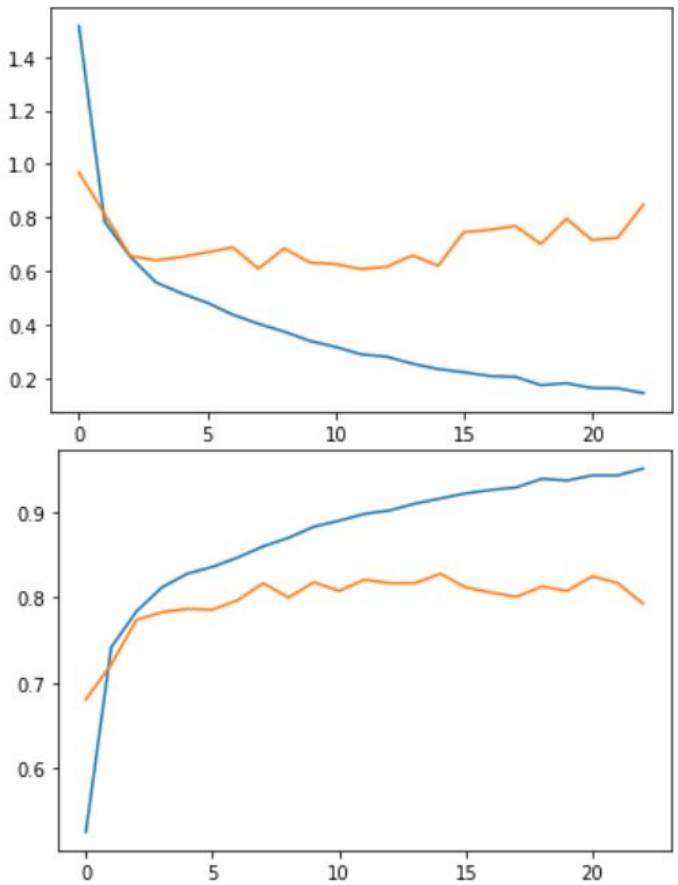
[2] Loss and Accuracy

resnet101

Pretrained from ImageNet

		Test Acc
[1] All Layers + FC	:	**82.05%**
[2] Freeze All from [1]+ SVM	:	**83.85%**

SVM rbf: pca dim 1024 -> 80 (91.15%)

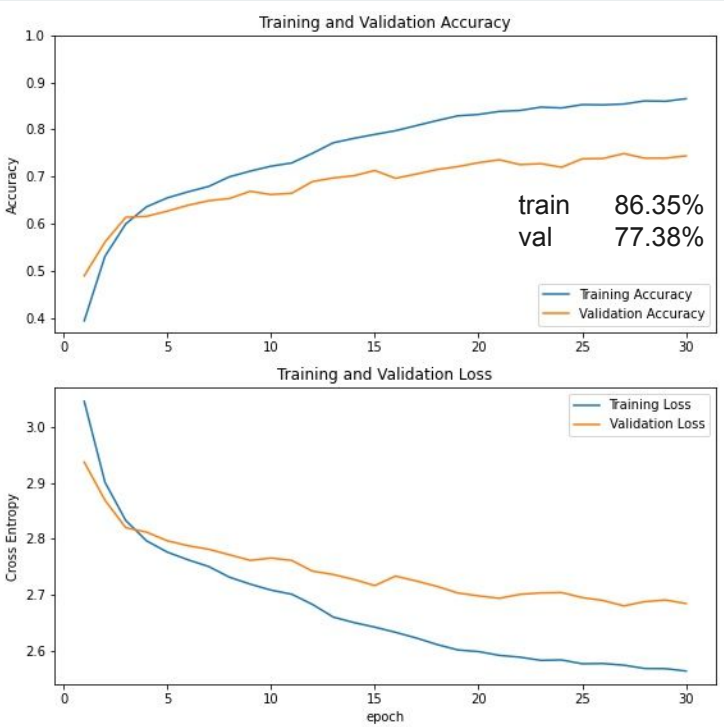


[1] Loss and Accuracy

InceptionResNetV2

Pretrained from ImageNet

[1] Last 100 Layers + GAvgPool + FC256 + FC : Test Acc 73.93%

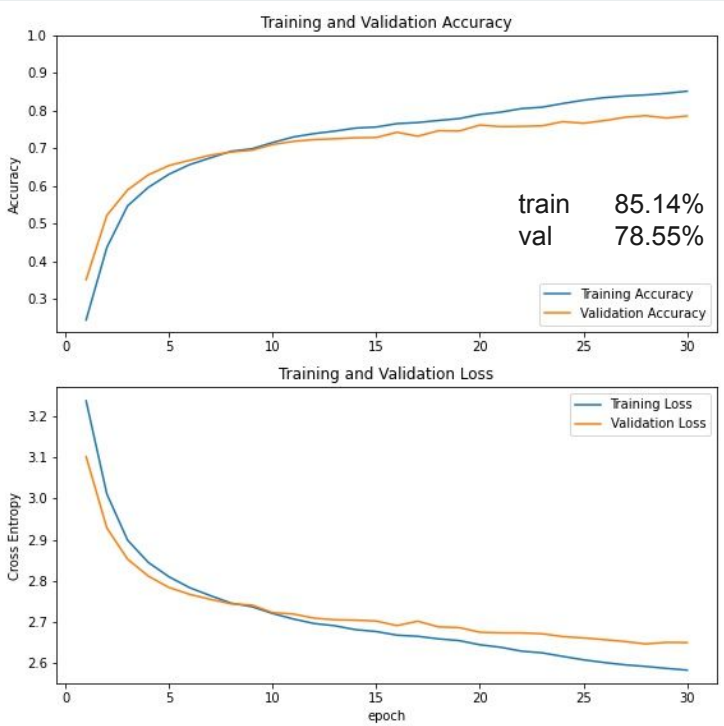


[1] Loss and Accuracy

InceptionResNetV2

Pretrained from ImageNet

		Test Acc
[1] Last 100 Layers + GAvgPool + FC256 + FC	:	73.93%
[2] All Layers + GAvgPool + FC	:	78.60%



[2] Loss and Accuracy

Overall

		Test Acc
VGG_16_bn	:	82.30%
VGG_19_bn	:	85.53%
GoogleNet	:	83.58%
ResNet101	:	83.85%
InceptionResNetV2	:	78.60%