모델 학습 보고서

이나겸

epoch	10
batch size	16
learning rate	0.01
Loss	CrossEntropyLoss()
augmentation	Resize, RandomHorizontalFlip, RandomVerticalFlip, RandomAutocontrast
optimizer	SGD
momentum	0.9

모델명	last.pt	best.pt
resnet18	0it [00:00, ?it/s]Starting evaluation 4it [00:01, 2.16it/s] Test acc for image : 64 Accuracy : 59.38 End test..	0it [00:00, ?it/s]Starting evaluation 4it [00:01, 2.18it/s] Test acc for image : 64 Accuracy : 89.06 End test..
resnet50	0it [00:00, ?it/s]Starting evaluation 4it [00:02, 1.96it/s] Test acc for image : 64 Accuracy : 50.00 End test..	0it [00:00, ?it/s]Starting evaluation 4it [00:01, 2.01it/s] Test acc for image : 64 Accuracy : 95.31 End test..
resnetxt50 _32x4d	Starting evaluation 4it [00:02, 1.93it/s] Test acc for image : 64 Accuracy : 48.44 End test..	Starting evaluation 4it [00:02, 1.94it/s] Test acc for image : 64 Accuracy : 92.19 End test..
vgg16	0it [00:00, ?it/s]Starting evaluation 4it [00:02, 1.84it/s] Test acc for image : 64 Accuracy : 43.75 End test..	0it [00:00, ?it/s]Starting evaluation 4it [00:02, 1.76it/s] Test acc for image : 64 Accuracy : 84.38 End test..
vgg16_bn	Starting evaluation 4it [00:02, 1.77it/s] Test acc for image : 64 Accuracy : 78.12 End test..	Starting evaluation 4it [00:02, 1.75it/s] Test acc for image : 64 Accuracy : 84.38 End test..

과제 수행
첫 번째 장은 같은 환경에서 여러개의 모델을 돌렸을 때 결과를 확인해 본 것이다. (resnetxt50_32x4d, vgg16, vgg16_bn을 추가하여 resnet18과 resnet50 포함하여 학습 진행) 가장 좋은 값이 나온 ResNet50을 가지고 하이퍼 파라미터 값과 어그멘테이션 값을 변경하여 학습해봤다.

파일 구성	
main	데이터셋, 데이터로더, 모델호출, 하이퍼 파라미터 호출, 학습, 평가 코드 작성
dataset	split_data 추가, image, label 반환
utils	set_seed, image_transform, trian, validation, eval, save_model
models	resnext50_32x4d, vgg16, vgg16_bn 추가
configs	device, batch_size, num_classes, num_epoch, val_every, learning rate, criterion, dir

model	ResNet50
epoch	30
batch size	32
learning rate	0.0005
Loss	CrossEntropyLoss()
augmentation	Resize((224,224)), RandomHorizontalFlip(p=0.2), RandomVerticalFlip(p=0.2), RandomAutocontrast(1.5), Normalize([0.5, 0.5, 0.5], [0.2, 0.2, 0.2])
optimizer	SGD
momentum	0.9

best.pt	last.pt
0it [00:00, ?it/s]Starting evaluation 2it [00:01, 1.04it/s] Test acc for image : 64 Accuracy : 95.31 End test..	0it [00:00, ?it/s]Starting evaluation 2it [00:01, 1.04it/s] Test acc for image : 64 Accuracy : 93.75 End test..

model	ResNet50
epoch	50
batch size	32
learning rate	0.0025
Loss	CrossEntropyLoss()
augmentation	Resize((224,224)), RandomHorizontalFlip(p=0.2), RandomVerticalFlip(p=0.4), RandomAutocontrast(1.5), Normalize([0.5, 0.5, 0.5], [0.2, 0.2, 0.2])
optimizer	SGD
momentum	0.9

best.pt	last.pt
0it [00:00, ?it/s]Starting evaluation 2it [00:01, 1.03it/s] Test acc for image : 64 Accuracy : 96.88 End test..	0it [00:00, ?it/s]Starting evaluation 2it [00:01, 1.04it/s] Test acc for image : 64 Accuracy : 90.62 End test..