

Computer vision CW3 text logs and screenshots

Name: Iliass Elyaakoubi Benssaleh

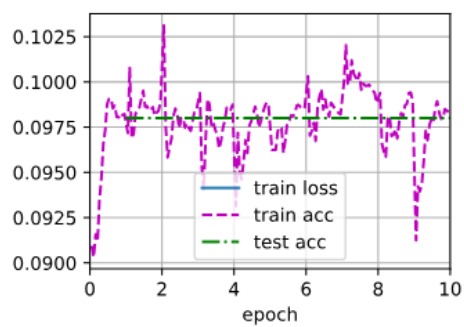
ID : 200922847

1. MNIST Dataset

- VGG16

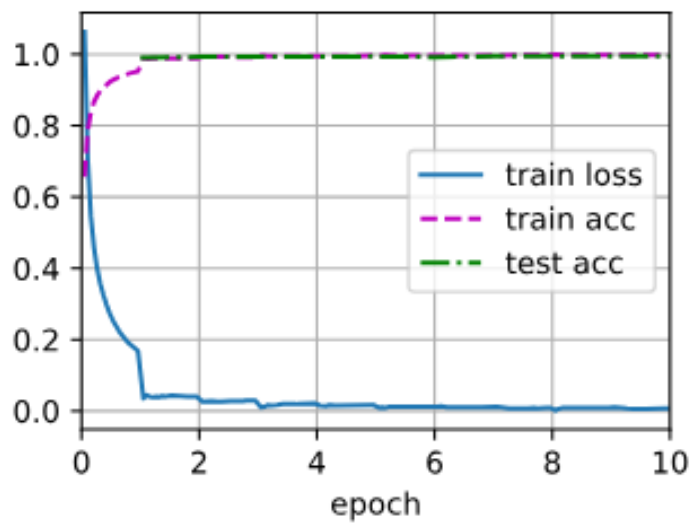
Lr = 0.1

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-----  
Epoch 1, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 2, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 3, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 4, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 5, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 6, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 7, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 8, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 9, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
Epoch 10, Loss: nan, Train Acc: 0.099, Test Acc: 0.098  
5024.8 examples/sec on cuda
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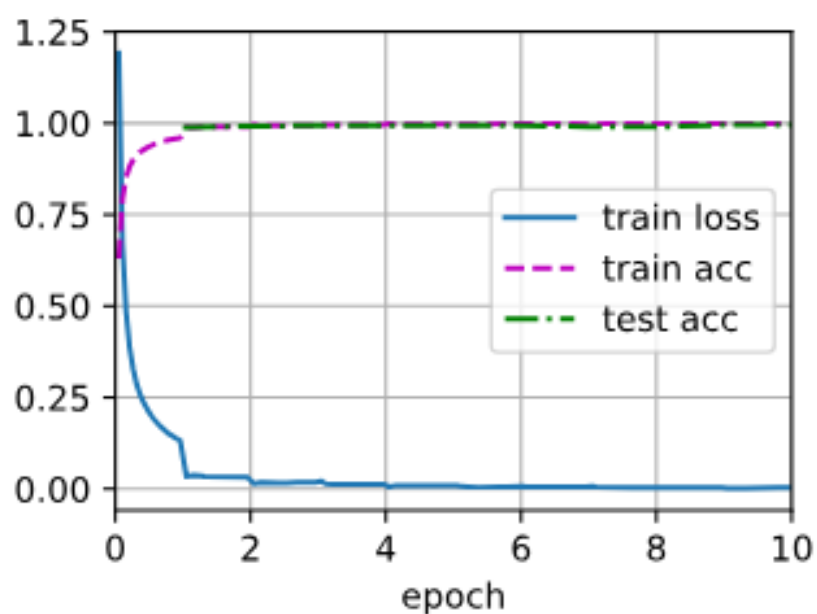
Lr = 0.01

Epoch 1, Loss: 0.164, Train Acc: 0.953, Test Acc: 0.990
Epoch 2, Loss: 0.040, Train Acc: 0.988, Test Acc: 0.993
Epoch 3, Loss: 0.029, Train Acc: 0.992, Test Acc: 0.993
Epoch 4, Loss: 0.021, Train Acc: 0.994, Test Acc: 0.993
Epoch 5, Loss: 0.017, Train Acc: 0.995, Test Acc: 0.994
Epoch 6, Loss: 0.013, Train Acc: 0.996, Test Acc: 0.992
Epoch 7, Loss: 0.011, Train Acc: 0.997, Test Acc: 0.994
Epoch 8, Loss: 0.009, Train Acc: 0.997, Test Acc: 0.995
Epoch 9, Loss: 0.009, Train Acc: 0.998, Test Acc: 0.995
Epoch 10, Loss: 0.007, Train Acc: 0.998, Test Acc: 0.995
4999.1 examples/sec on cuda



Lr = 0.001

Epoch 1, Loss: 0.129, Train Acc: 0.961, Test Acc: 0.988
Epoch 2, Loss: 0.031, Train Acc: 0.990, Test Acc: 0.992
Epoch 3, Loss: 0.018, Train Acc: 0.994, Test Acc: 0.993
Epoch 4, Loss: 0.013, Train Acc: 0.996, Test Acc: 0.994
Epoch 5, Loss: 0.009, Train Acc: 0.998, Test Acc: 0.995
Epoch 6, Loss: 0.005, Train Acc: 0.998, Test Acc: 0.993
Epoch 7, Loss: 0.005, Train Acc: 0.999, Test Acc: 0.991
Epoch 8, Loss: 0.003, Train Acc: 0.999, Test Acc: 0.990
Epoch 9, Loss: 0.003, Train Acc: 0.999, Test Acc: 0.995
Epoch 10, Loss: 0.003, Train Acc: 0.999, Test Acc: 0.995
5059.9 examples/sec on cuda



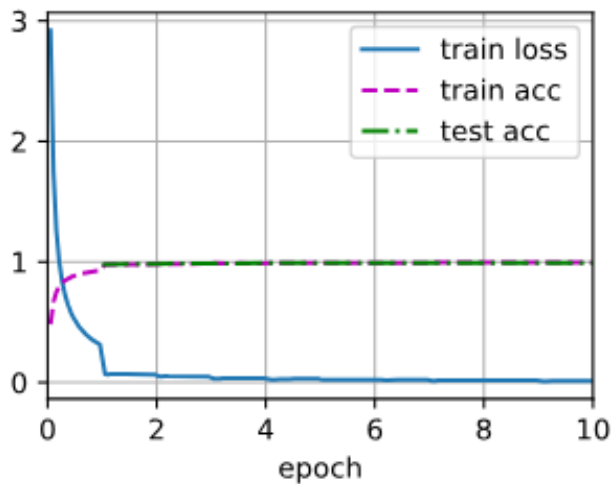
- ResNet18

Lr = 0.1

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Epoch 1, Loss: 0.307, Train Acc: 0.929, Test Acc: 0.979
Epoch 2, Loss: 0.064, Train Acc: 0.981, Test Acc: 0.984
Epoch 3, Loss: 0.046, Train Acc: 0.986, Test Acc: 0.988
Epoch 4, Loss: 0.036, Train Acc: 0.989, Test Acc: 0.990
Epoch 5, Loss: 0.031, Train Acc: 0.990, Test Acc: 0.990
Epoch 6, Loss: 0.025, Train Acc: 0.992, Test Acc: 0.992
Epoch 7, Loss: 0.023, Train Acc: 0.993, Test Acc: 0.992
Epoch 8, Loss: 0.018, Train Acc: 0.995, Test Acc: 0.992
Epoch 9, Loss: 0.017, Train Acc: 0.995, Test Acc: 0.990
Epoch 10, Loss: 0.015, Train Acc: 0.995, Test Acc: 0.992
6473.0 examples/sec on cuda

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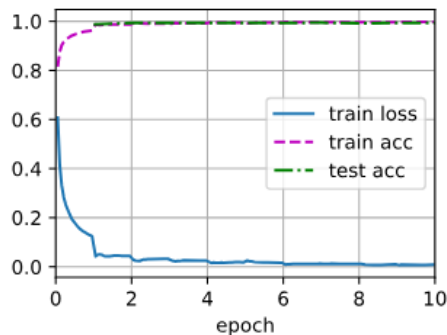


Lr = 0.01

```

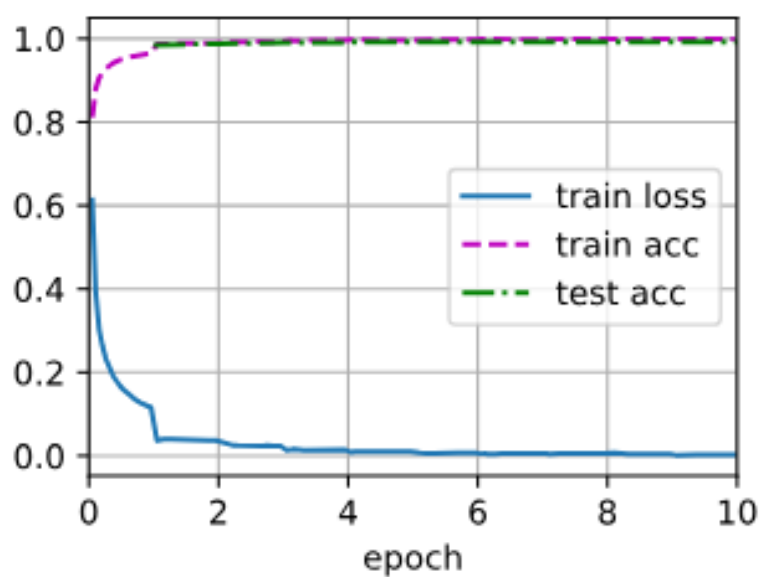
-----
Epoch 1, Loss: 0.123, Train Acc: 0.964, Test Acc: 0.988
Epoch 2, Loss: 0.043, Train Acc: 0.988, Test Acc: 0.993
Epoch 3, Loss: 0.032, Train Acc: 0.990, Test Acc: 0.994
Epoch 4, Loss: 0.025, Train Acc: 0.992, Test Acc: 0.993
Epoch 5, Loss: 0.018, Train Acc: 0.994, Test Acc: 0.993
Epoch 6, Loss: 0.016, Train Acc: 0.995, Test Acc: 0.994
Epoch 7, Loss: 0.013, Train Acc: 0.996, Test Acc: 0.994
Epoch 8, Loss: 0.012, Train Acc: 0.996, Test Acc: 0.992
Epoch 9, Loss: 0.010, Train Acc: 0.997, Test Acc: 0.993
Epoch 10, Loss: 0.008, Train Acc: 0.997, Test Acc: 0.993
6949.0 examples/sec on cuda

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Lr= 0.001

Epoch 1, Loss: 0.114, Train Acc: 0.965, Test Acc: 0.985
Epoch 2, Loss: 0.037, Train Acc: 0.989, Test Acc: 0.988
Epoch 3, Loss: 0.024, Train Acc: 0.992, Test Acc: 0.990
Epoch 4, Loss: 0.014, Train Acc: 0.996, Test Acc: 0.991
Epoch 5, Loss: 0.010, Train Acc: 0.997, Test Acc: 0.992
Epoch 6, Loss: 0.007, Train Acc: 0.998, Test Acc: 0.992
Epoch 7, Loss: 0.005, Train Acc: 0.998, Test Acc: 0.993
Epoch 8, Loss: 0.006, Train Acc: 0.998, Test Acc: 0.992
Epoch 9, Loss: 0.005, Train Acc: 0.999, Test Acc: 0.992
Epoch 10, Loss: 0.003, Train Acc: 0.999, Test Acc: 0.992
6427.6 examples/sec on cuda

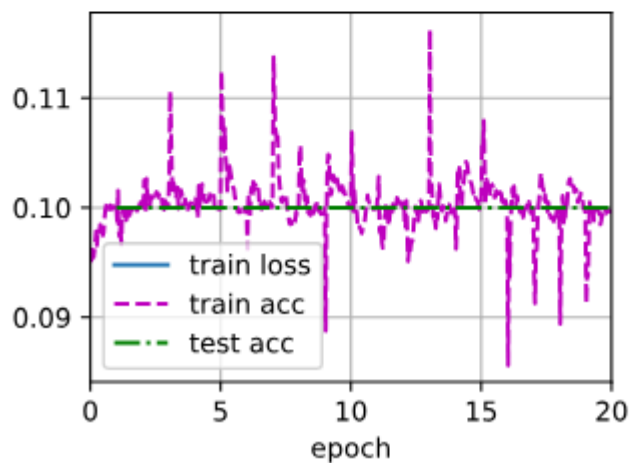


CIFAR 10

- VGG16

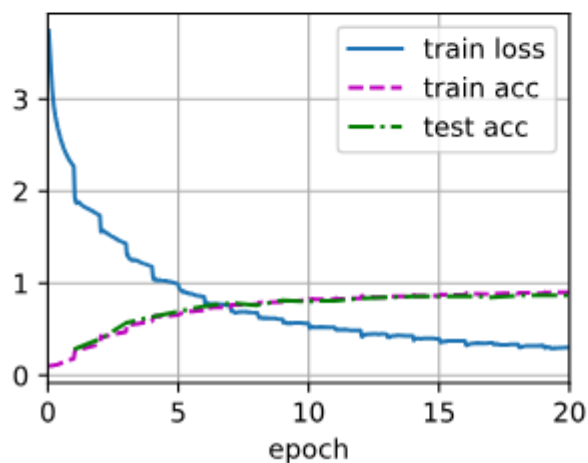
Lr = 0.1

Epoch 1, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 2, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 3, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 4, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 5, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 6, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 7, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 8, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 9, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 10, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 11, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 12, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 13, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 14, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 15, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 16, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 17, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 18, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 19, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
Epoch 20, Loss: nan, Train Acc: 0.100, Test Acc: 0.100
3245.7 examples/sec on cuda



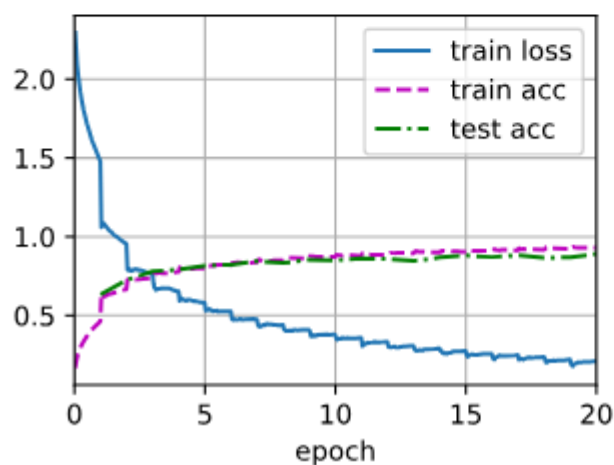
Lr = 0.01

Epoch 1, Loss: 2.267, Train Acc: 0.183, Test Acc: 0.282
Epoch 2, Loss: 1.737, Train Acc: 0.338, Test Acc: 0.394
Epoch 3, Loss: 1.431, Train Acc: 0.474, Test Acc: 0.570
Epoch 4, Loss: 1.178, Train Acc: 0.586, Test Acc: 0.636
Epoch 5, Loss: 0.990, Train Acc: 0.655, Test Acc: 0.694
Epoch 6, Loss: 0.850, Train Acc: 0.707, Test Acc: 0.752
Epoch 7, Loss: 0.754, Train Acc: 0.745, Test Acc: 0.786
Epoch 8, Loss: 0.677, Train Acc: 0.770, Test Acc: 0.760
Epoch 9, Loss: 0.610, Train Acc: 0.797, Test Acc: 0.814
Epoch 10, Loss: 0.566, Train Acc: 0.812, Test Acc: 0.803
Epoch 11, Loss: 0.522, Train Acc: 0.825, Test Acc: 0.811
Epoch 12, Loss: 0.486, Train Acc: 0.837, Test Acc: 0.835
Epoch 13, Loss: 0.448, Train Acc: 0.849, Test Acc: 0.845
Epoch 14, Loss: 0.428, Train Acc: 0.857, Test Acc: 0.857
Epoch 15, Loss: 0.399, Train Acc: 0.867, Test Acc: 0.856
Epoch 16, Loss: 0.376, Train Acc: 0.875, Test Acc: 0.864
Epoch 17, Loss: 0.354, Train Acc: 0.882, Test Acc: 0.849
Epoch 18, Loss: 0.337, Train Acc: 0.888, Test Acc: 0.866
Epoch 19, Loss: 0.324, Train Acc: 0.892, Test Acc: 0.870
Epoch 20, Loss: 0.303, Train Acc: 0.900, Test Acc: 0.871
3241.8 examples/sec on cuda



Lr = 0.001

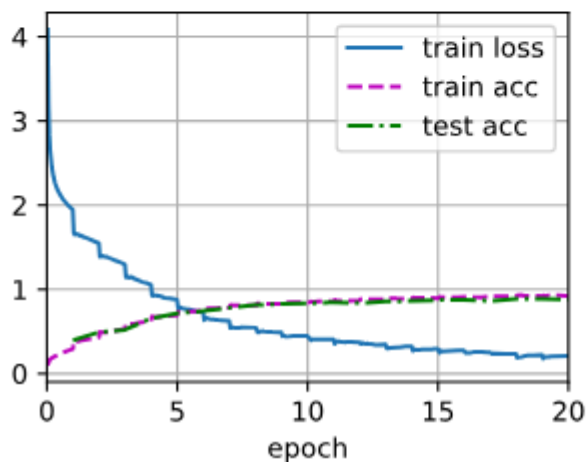
Epoch 1, Loss: 1.474, Train Acc: 0.463, Test Acc: 0.633
Epoch 2, Loss: 0.953, Train Acc: 0.667, Test Acc: 0.726
Epoch 3, Loss: 0.760, Train Acc: 0.740, Test Acc: 0.780
Epoch 4, Loss: 0.652, Train Acc: 0.778, Test Acc: 0.792
Epoch 5, Loss: 0.579, Train Acc: 0.801, Test Acc: 0.817
Epoch 6, Loss: 0.528, Train Acc: 0.819, Test Acc: 0.823
Epoch 7, Loss: 0.476, Train Acc: 0.837, Test Acc: 0.845
Epoch 8, Loss: 0.441, Train Acc: 0.850, Test Acc: 0.833
Epoch 9, Loss: 0.409, Train Acc: 0.862, Test Acc: 0.854
Epoch 10, Loss: 0.378, Train Acc: 0.872, Test Acc: 0.850
Epoch 11, Loss: 0.356, Train Acc: 0.879, Test Acc: 0.862
Epoch 12, Loss: 0.332, Train Acc: 0.886, Test Acc: 0.859
Epoch 13, Loss: 0.308, Train Acc: 0.895, Test Acc: 0.846
Epoch 14, Loss: 0.291, Train Acc: 0.899, Test Acc: 0.869
Epoch 15, Loss: 0.276, Train Acc: 0.905, Test Acc: 0.881
Epoch 16, Loss: 0.257, Train Acc: 0.910, Test Acc: 0.871
Epoch 17, Loss: 0.249, Train Acc: 0.914, Test Acc: 0.883
Epoch 18, Loss: 0.237, Train Acc: 0.917, Test Acc: 0.866
Epoch 19, Loss: 0.220, Train Acc: 0.924, Test Acc: 0.869
Epoch 20, Loss: 0.208, Train Acc: 0.929, Test Acc: 0.892
3217.5 examples/sec on cuda



- ResNet18

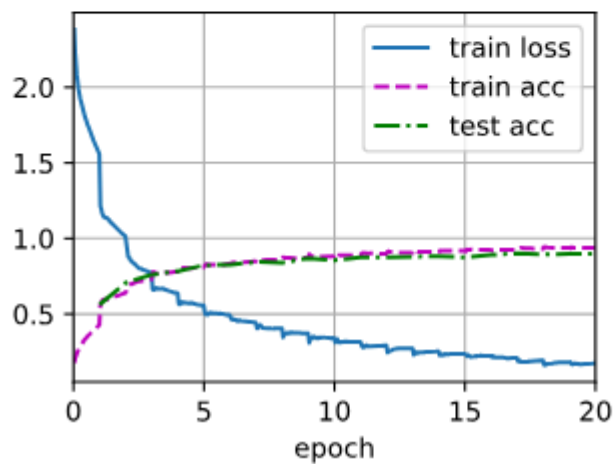
Lr = 0.1

Epoch 1, Loss: 1.944, Train Acc: 0.291, Test Acc: 0.395
Epoch 2, Loss: 1.545, Train Acc: 0.431, Test Acc: 0.493
Epoch 3, Loss: 1.296, Train Acc: 0.533, Test Acc: 0.522
Epoch 4, Loss: 1.056, Train Acc: 0.622, Test Acc: 0.657
Epoch 5, Loss: 0.875, Train Acc: 0.691, Test Acc: 0.718
Epoch 6, Loss: 0.727, Train Acc: 0.746, Test Acc: 0.743
Epoch 7, Loss: 0.625, Train Acc: 0.781, Test Acc: 0.784
Epoch 8, Loss: 0.547, Train Acc: 0.810, Test Acc: 0.814
Epoch 9, Loss: 0.491, Train Acc: 0.830, Test Acc: 0.829
Epoch 10, Loss: 0.448, Train Acc: 0.843, Test Acc: 0.834
Epoch 11, Loss: 0.405, Train Acc: 0.858, Test Acc: 0.847
Epoch 12, Loss: 0.374, Train Acc: 0.869, Test Acc: 0.839
Epoch 13, Loss: 0.347, Train Acc: 0.882, Test Acc: 0.857
Epoch 14, Loss: 0.322, Train Acc: 0.888, Test Acc: 0.862
Epoch 15, Loss: 0.293, Train Acc: 0.896, Test Acc: 0.875
Epoch 16, Loss: 0.274, Train Acc: 0.903, Test Acc: 0.877
Epoch 17, Loss: 0.253, Train Acc: 0.910, Test Acc: 0.865
Epoch 18, Loss: 0.238, Train Acc: 0.916, Test Acc: 0.886
Epoch 19, Loss: 0.223, Train Acc: 0.921, Test Acc: 0.887
Epoch 20, Loss: 0.210, Train Acc: 0.926, Test Acc: 0.881
2861.2 examples/sec on cuda



Lr = 0.01

Epoch 1, Loss: 1.558, Train Acc: 0.428, Test Acc: 0.563
Epoch 2, Loss: 1.013, Train Acc: 0.640, Test Acc: 0.706
Epoch 3, Loss: 0.770, Train Acc: 0.730, Test Acc: 0.761
Epoch 4, Loss: 0.637, Train Acc: 0.780, Test Acc: 0.784
Epoch 5, Loss: 0.556, Train Acc: 0.809, Test Acc: 0.823
Epoch 6, Loss: 0.492, Train Acc: 0.830, Test Acc: 0.827
Epoch 7, Loss: 0.443, Train Acc: 0.848, Test Acc: 0.845
Epoch 8, Loss: 0.404, Train Acc: 0.860, Test Acc: 0.840
Epoch 9, Loss: 0.371, Train Acc: 0.871, Test Acc: 0.870
Epoch 10, Loss: 0.339, Train Acc: 0.881, Test Acc: 0.856
Epoch 11, Loss: 0.318, Train Acc: 0.889, Test Acc: 0.874
Epoch 12, Loss: 0.292, Train Acc: 0.899, Test Acc: 0.876
Epoch 13, Loss: 0.274, Train Acc: 0.904, Test Acc: 0.880
Epoch 14, Loss: 0.254, Train Acc: 0.912, Test Acc: 0.881
Epoch 15, Loss: 0.236, Train Acc: 0.918, Test Acc: 0.874
Epoch 16, Loss: 0.223, Train Acc: 0.923, Test Acc: 0.891
Epoch 17, Loss: 0.211, Train Acc: 0.926, Test Acc: 0.901
Epoch 18, Loss: 0.195, Train Acc: 0.931, Test Acc: 0.896
Epoch 19, Loss: 0.182, Train Acc: 0.937, Test Acc: 0.897
Epoch 20, Loss: 0.174, Train Acc: 0.938, Test Acc: 0.900
2660.3 examples/sec on cuda

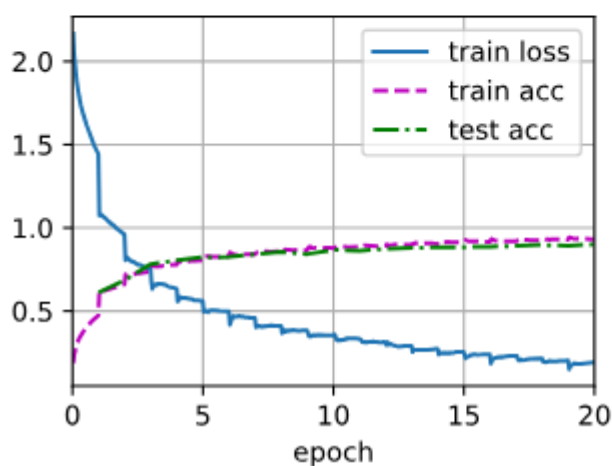


Lr = 0.001

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-----
Epoch 1, Loss: 1.441, Train Acc: 0.475, Test Acc: 0.611
Epoch 2, Loss: 0.960, Train Acc: 0.661, Test Acc: 0.686
Epoch 3, Loss: 0.750, Train Acc: 0.736, Test Acc: 0.781
Epoch 4, Loss: 0.635, Train Acc: 0.779, Test Acc: 0.804
Epoch 5, Loss: 0.560, Train Acc: 0.806, Test Acc: 0.823
Epoch 6, Loss: 0.497, Train Acc: 0.828, Test Acc: 0.825
Epoch 7, Loss: 0.458, Train Acc: 0.842, Test Acc: 0.841
Epoch 8, Loss: 0.412, Train Acc: 0.858, Test Acc: 0.856
Epoch 9, Loss: 0.384, Train Acc: 0.866, Test Acc: 0.842
Epoch 10, Loss: 0.354, Train Acc: 0.879, Test Acc: 0.868
Epoch 11, Loss: 0.332, Train Acc: 0.886, Test Acc: 0.863
Epoch 12, Loss: 0.313, Train Acc: 0.891, Test Acc: 0.874
Epoch 13, Loss: 0.292, Train Acc: 0.900, Test Acc: 0.879
Epoch 14, Loss: 0.273, Train Acc: 0.906, Test Acc: 0.883
Epoch 15, Loss: 0.254, Train Acc: 0.913, Test Acc: 0.884
Epoch 16, Loss: 0.241, Train Acc: 0.917, Test Acc: 0.886
Epoch 17, Loss: 0.231, Train Acc: 0.918, Test Acc: 0.891
Epoch 18, Loss: 0.217, Train Acc: 0.923, Test Acc: 0.897
Epoch 19, Loss: 0.203, Train Acc: 0.929, Test Acc: 0.893
Epoch 20, Loss: 0.191, Train Acc: 0.932, Test Acc: 0.901
2683.1 examples/sec on cuda

```



VGG16			Resnet18		
0.1	0.01	0.001	0.1	0.01	0.001
9.8%	99.5%	99.5%	99.2%	99.4%	99.3%

VGG16			Resnet18		
0.1	0.01	0.001	0.1	0.01	0.001
10%	87.1%	89.2%	88.7%	90%	90.1%