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(venv) ostap@ostap-All-Series:~/Documents/DeepLearning/hw4curro$ python CIFAR100
.py
Using TensorFlow backend.
(40000, 32, 32, 3) (40000, 1) (10000, 32, 32, 3) (10000, 1)
Training features shape:  (40000, 32, 32, 3)
Validation features shape:  (10000, 32, 32, 3)
Test features shape:  (10000, 32, 32, 3)
2018-10-03 18:52:53.455261: I tensorflow/core/platform/cpu_feature_guard.cc:141]
 Your CPU supports instructions that this TensorFlow binary was not compiled to
use: AVX2 FMA
2018-10-03 18:52:53.548204: I tensorflow/stream_executor/cuda/cuda_gpu_executor.
cc:964] successful NUMA node read from SysFS had negative value (-1), but there
must be at least one NUMA node, so returning NUMA node zero
2018-10-03 18:52:53.548624: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1
411] Found device 0 with properties:
name: GeForce GTX 980 major: 5 minor: 2 memoryClockRate(GHz): 1.2785
pciBusID: 0000:01:00.0
totalMemory: 3.94GiB freeMemory: 3.04GiB
2018-10-03 18:52:53.614475: I tensorflow/stream_executor/cuda/cuda_gpu_executor.
cc:964] successful NUMA node read from SysFS had negative value (-1), but there
must be at least one NUMA node, so returning NUMA node zero
2018-10-03 18:52:53.614870: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1
411] Found device 1 with properties:
name: GeForce GTX 970 major: 5 minor: 2 memoryClockRate(GHz): 1.329
pciBusID: 0000:02:00.0
totalMemory: 3.94GiB freeMemory: 3.87GiB
2018-10-03 18:52:53.615025: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1
490] Adding visible gpu devices: 0, 1
2018-10-03 18:52:53.967614: I tensorflow/core/common_runtime/gpu/gpu_device.cc:9
71] Device interconnect StreamExecutor with strength 1 edge matrix:
2018-10-03 18:52:53.967645: I tensorflow/core/common_runtime/gpu/gpu_device.cc:9
77]      0 1
2018-10-03 18:52:53.967650: I tensorflow/core/common_runtime/gpu/gpu_device.cc:9
90] 0:   N Y
2018-10-03 18:52:53.967653: I tensorflow/core/common_runtime/gpu/gpu_device.cc:9
90] 1:   Y N
2018-10-03 18:52:53.967872: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1
103] Created TensorFlow device (/job:localhost/replica:0/task:0/device:GPU:0 wit
h 2751 MB memory) -> physical GPU (device: 0, name: GeForce GTX 980, pci bus id:
 0000:01:00.0, compute capability: 5.2)
2018-10-03 18:52:53.989668: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1
103] Created TensorFlow device (/job:localhost/replica:0/task:0/device:GPU:1 wit
h 3599 MB memory) -> physical GPU (device: 1, name: GeForce GTX 970, pci bus id:
 0000:02:00.0, compute capability: 5.2)
_________________________________________________________________
Layer (type)                 Output Shape              Param #
=================================================================
conv2d_1 (Conv2D)            (None, 32, 32, 32)        1568
_________________________________________________________________
activation_1 (Activation)    (None, 32, 32, 32)        0
_________________________________________________________________
batch_normalization_1 (Batch (None, 32, 32, 32)        128
_________________________________________________________________
conv2d_2 (Conv2D)            (None, 32, 32, 32)        9248
_________________________________________________________________
activation_2 (Activation)    (None, 32, 32, 32)        0
_________________________________________________________________
max_pooling2d_1 (MaxPooling2 (None, 16, 16, 32)        0
_________________________________________________________________
dropout_1 (Dropout)          (None, 16, 16, 32)        0
_________________________________________________________________
conv2d_3 (Conv2D)            (None, 16, 16, 64)        18496
_________________________________________________________________
activation_3 (Activation)    (None, 16, 16, 64)        0
_________________________________________________________________
batch_normalization_2 (Batch (None, 16, 16, 64)        256
_________________________________________________________________
conv2d_4 (Conv2D)            (None, 16, 16, 64)        65600
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activation_4 (Activation)    (None, 16, 16, 64)        0
_________________________________________________________________
batch_normalization_3 (Batch (None, 16, 16, 64)        256
_________________________________________________________________
max_pooling2d_2 (MaxPooling2 (None, 8, 8, 64)          0
_________________________________________________________________
dropout_2 (Dropout)          (None, 8, 8, 64)          0
_________________________________________________________________
conv2d_5 (Conv2D)            (None, 8, 8, 128)         204928
_________________________________________________________________
activation_5 (Activation)    (None, 8, 8, 128)         0
_________________________________________________________________
batch_normalization_4 (Batch (None, 8, 8, 128)         512
_________________________________________________________________
conv2d_6 (Conv2D)            (None, 8, 8, 128)         65664
_________________________________________________________________
activation_6 (Activation)    (None, 8, 8, 128)         0
_________________________________________________________________
batch_normalization_5 (Batch (None, 8, 8, 128)         512
_________________________________________________________________
max_pooling2d_3 (MaxPooling2 (None, 4, 4, 128)         0
_________________________________________________________________
dropout_3 (Dropout)          (None, 4, 4, 128)         0
_________________________________________________________________
flatten_1 (Flatten)          (None, 2048)              0
_________________________________________________________________
dense_1 (Dense)              (None, 100)               204900
=================================================================
Total params: 572,068
Trainable params: 571,236
Non-trainable params: 832
_________________________________________________________________
Train on 40000 samples, validate on 10000 samples
Epoch 1/32
40000/40000 [==============================] - 16s 409us/step - loss: 4.1911 - t
op_k_categorical_accuracy: 0.3479 - val_loss: 3.3574 - val_top_k_categorical_acc
uracy: 0.4923
Epoch 2/32
40000/40000 [==============================] - 15s 376us/step - loss: 3.1132 - t
op_k_categorical_accuracy: 0.5538 - val_loss: 2.8131 - val_top_k_categorical_acc
uracy: 0.6225
Epoch 3/32
40000/40000 [==============================] - 15s 375us/step - loss: 2.6354 - t
op_k_categorical_accuracy: 0.6573 - val_loss: 2.5696 - val_top_k_categorical_acc
uracy: 0.6761
Epoch 4/32
40000/40000 [==============================] - 15s 376us/step - loss: 2.3939 - t
op_k_categorical_accuracy: 0.7151 - val_loss: 2.3879 - val_top_k_categorical_acc
uracy: 0.7168
Epoch 5/32
40000/40000 [==============================] - 15s 375us/step - loss: 2.2350 - t
op_k_categorical_accuracy: 0.7537 - val_loss: 2.3999 - val_top_k_categorical_acc
uracy: 0.7222
Epoch 6/32
40000/40000 [==============================] - 15s 376us/step - loss: 2.1149 - t
op_k_categorical_accuracy: 0.7805 - val_loss: 2.2855 - val_top_k_categorical_acc
uracy: 0.7483
Epoch 7/32
40000/40000 [==============================] - 15s 376us/step - loss: 2.0224 - t
op_k_categorical_accuracy: 0.8023 - val_loss: 2.3183 - val_top_k_categorical_acc
uracy: 0.7565
Epoch 8/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.9339 - t
op_k_categorical_accuracy: 0.8208 - val_loss: 2.2308 - val_top_k_categorical_acc
uracy: 0.7750
Epoch 9/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.8632 - t
op_k_categorical_accuracy: 0.8364 - val_loss: 2.3028 - val_top_k_categorical_acc
uracy: 0.7636
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Epoch 10/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.8067 - t
op_k_categorical_accuracy: 0.8467 - val_loss: 2.2427 - val_top_k_categorical_acc
uracy: 0.7786
Epoch 11/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.7510 - t
op_k_categorical_accuracy: 0.8609 - val_loss: 2.1793 - val_top_k_categorical_acc
uracy: 0.7912
Epoch 12/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.7062 - t
op_k_categorical_accuracy: 0.8696 - val_loss: 2.2404 - val_top_k_categorical_acc
uracy: 0.7853
Epoch 13/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.6602 - t
op_k_categorical_accuracy: 0.8784 - val_loss: 2.1732 - val_top_k_categorical_acc
uracy: 0.8046
Epoch 14/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.6301 - t
op_k_categorical_accuracy: 0.8872 - val_loss: 2.2326 - val_top_k_categorical_acc
uracy: 0.7956
Epoch 15/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.5979 - t
op_k_categorical_accuracy: 0.8934 - val_loss: 2.3233 - val_top_k_categorical_acc
uracy: 0.7844
Epoch 16/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.5764 - t
op_k_categorical_accuracy: 0.8984 - val_loss: 2.2007 - val_top_k_categorical_acc
uracy: 0.8040
Epoch 17/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.5455 - t
op_k_categorical_accuracy: 0.9033 - val_loss: 2.3343 - val_top_k_categorical_acc
uracy: 0.7897
Epoch 18/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.5250 - t
op_k_categorical_accuracy: 0.9079 - val_loss: 2.2597 - val_top_k_categorical_acc
uracy: 0.8064
Epoch 19/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4950 - t
op_k_categorical_accuracy: 0.9141 - val_loss: 2.2843 - val_top_k_categorical_acc
uracy: 0.8049
Epoch 20/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4831 - t
op_k_categorical_accuracy: 0.9169 - val_loss: 2.3495 - val_top_k_categorical_acc
uracy: 0.7995
Epoch 21/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4702 - t
op_k_categorical_accuracy: 0.9209 - val_loss: 2.3060 - val_top_k_categorical_acc
uracy: 0.8093
Epoch 22/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.4421 - t
op_k_categorical_accuracy: 0.9256 - val_loss: 2.3839 - val_top_k_categorical_acc
uracy: 0.7979
Epoch 23/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4391 - t
op_k_categorical_accuracy: 0.9255 - val_loss: 2.3491 - val_top_k_categorical_acc
uracy: 0.8038
Epoch 24/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4216 - t
op_k_categorical_accuracy: 0.9286 - val_loss: 2.3787 - val_top_k_categorical_acc
uracy: 0.7953
Epoch 25/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.4010 - t
op_k_categorical_accuracy: 0.9313 - val_loss: 2.3989 - val_top_k_categorical_acc
uracy: 0.7959
Epoch 26/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.3877 - t
op_k_categorical_accuracy: 0.9346 - val_loss: 2.3856 - val_top_k_categorical_acc
uracy: 0.8006
Epoch 27/32
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40000/40000 [==============================] - 15s 377us/step - loss: 1.3773 - t
op_k_categorical_accuracy: 0.9373 - val_loss: 2.3777 - val_top_k_categorical_acc
uracy: 0.8066
Epoch 28/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.3772 - t
op_k_categorical_accuracy: 0.9367 - val_loss: 2.4399 - val_top_k_categorical_acc
uracy: 0.8018
Epoch 29/32
40000/40000 [==============================] - 15s 377us/step - loss: 1.3589 - t
op_k_categorical_accuracy: 0.9395 - val_loss: 2.4524 - val_top_k_categorical_acc
uracy: 0.7953
Epoch 30/32
40000/40000 [==============================] - 15s 375us/step - loss: 1.3470 - t
op_k_categorical_accuracy: 0.9427 - val_loss: 2.4399 - val_top_k_categorical_acc
uracy: 0.8001
Epoch 31/32
40000/40000 [==============================] - 15s 377us/step - loss: 1.3399 - t
op_k_categorical_accuracy: 0.9427 - val_loss: 2.4711 - val_top_k_categorical_acc
uracy: 0.7989
Epoch 32/32
40000/40000 [==============================] - 15s 376us/step - loss: 1.3318 - t
op_k_categorical_accuracy: 0.9438 - val_loss: 2.5110 - val_top_k_categorical_acc
uracy: 0.7980
10000/10000 [==============================] - 1s 117us/step
Test loss: 2.4556733959197996
Test accuracy: 0.796
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