Res152_112*112:

Epoch 1/100

2022-07-18 11:37:52.614038: I tensorflow/stream_executor/cuda/cuda_dnn.cc:369] Loaded cuDNN version 8005

97/97 [==============================] - 70s 467ms/step - loss: 2.4043 - sparse_categorical_accuracy: 0.2511 - val_loss: 2.7264 - val_sparse_categorical_accuracy: 0.1000

Epoch 2/100

97/97 [==============================] - 41s 419ms/step - loss: 1.7127 - sparse_categorical_accuracy: 0.4210 - val_loss: 3.4510 - val_sparse_categorical_accuracy: 0.1000

Epoch 3/100

97/97 [==============================] - 41s 420ms/step - loss: 1.4999 - sparse_categorical_accuracy: 0.4908 - val_loss: 2.8651 - val_sparse_categorical_accuracy: 0.1273

Epoch 4/100

97/97 [==============================] - 41s 418ms/step - loss: 1.4046 - sparse_categorical_accuracy: 0.5280 - val_loss: 2.7228 - val_sparse_categorical_accuracy: 0.2000

Epoch 5/100

97/97 [==============================] - 41s 419ms/step - loss: 1.2814 - sparse_categorical_accuracy: 0.5713 - val_loss: 2.3940 - val_sparse_categorical_accuracy: 0.3445

Epoch 6/100

97/97 [==============================] - 41s 419ms/step - loss: 1.2174 - sparse_categorical_accuracy: 0.5911 - val_loss: 2.6291 - val_sparse_categorical_accuracy: 0.2758

Epoch 7/100

97/97 [==============================] - 41s 418ms/step - loss: 1.0741 - sparse_categorical_accuracy: 0.6424 - val_loss: 1.3663 - val_sparse_categorical_accuracy: 0.5359

Epoch 8/100

97/97 [==============================] - 41s 419ms/step - loss: 0.9914 - sparse_categorical_accuracy: 0.6661 - val_loss: 2.7495 - val_sparse_categorical_accuracy: 0.4555

Epoch 9/100

97/97 [==============================] - 41s 419ms/step - loss: 0.9366 - sparse_categorical_accuracy: 0.6849 - val_loss: 2.1392 - val_sparse_categorical_accuracy: 0.4633

Epoch 10/100

97/97 [==============================] - 41s 418ms/step - loss: 0.9433 - sparse_categorical_accuracy: 0.6923 - val_loss: 2.3218 - val_sparse_categorical_accuracy: 0.4578

Epoch 11/100

97/97 [==============================] - 41s 419ms/step - loss: 0.7930 - sparse_categorical_accuracy: 0.7344 - val_loss: 10.5943 - val_sparse_categorical_accuracy: 0.5430

Epoch 12/100

97/97 [==============================] - 41s 419ms/step - loss: 0.6678 - sparse_categorical_accuracy: 0.7814 - val_loss: 2.1218 - val_sparse_categorical_accuracy: 0.4820

Epoch 13/100

97/97 [==============================] - 41s 418ms/step - loss: 0.5709 - sparse_categorical_accuracy: 0.8090 - val_loss: 2.0819 - val_sparse_categorical_accuracy: 0.4703

Epoch 14/100

97/97 [==============================] - 41s 419ms/step - loss: 0.5199 - sparse_categorical_accuracy:

0.8250 - val_loss: 3.0368 - val_sparse_categorical_accuracy: 0.4367

Epoch 15/100

97/97 [==============================] - 41s 418ms/step - loss: 0.4467 - sparse_categorical_accuracy: 0.8514 - val_loss: 2.5577 - val_sparse_categorical_accuracy: 0.4914

Epoch 16/100

97/97 [==============================] - 41s 418ms/step - loss: 0.4055 - sparse_categorical_accuracy: 0.8642 - val_loss: 5.1084 - val_sparse_categorical_accuracy: 0.5039

Epoch 17/100

97/97 [==============================] - 41s 419ms/step - loss: 0.3646 - sparse_categorical_accuracy: 0.8784 - val_loss: 2.7423 - val_sparse_categorical_accuracy: 0.5773

Epoch 18/100

97/97 [==============================] - 41s 419ms/step - loss: 0.3013 - sparse_categorical_accuracy: 0.9012 - val_loss: 2.8022 - val_sparse_categorical_accuracy: 0.4727

Epoch 19/100

97/97 [==============================] - 41s 419ms/step - loss: 0.2804 - sparse_categorical_accuracy: 0.9102 - val_loss: 2.7719 - val_sparse_categorical_accuracy: 0.4961

Epoch 20/100

97/97 [==============================] - 41s 419ms/step - loss: 0.2878 - sparse_categorical_accuracy: 0.9079 - val_loss: 55.8183 - val_sparse_categorical_accuracy: 0.1391

Epoch 21/100

97/97 [==============================] - 41s 418ms/step - loss: 0.5233 - sparse_categorical_accuracy: 0.8284 - val_loss: 2.8942 - val_sparse_categorical_accuracy: 0.3875

Epoch 22/100

97/97 [==============================] - 41s 419ms/step - loss: 0.2871 - sparse_categorical_accuracy: 0.9075 - val_loss: 2.0933 - val_sparse_categorical_accuracy: 0.5367

Epoch 23/100

97/97 [==============================] - 41s 418ms/step - loss: 0.1749 - sparse_categorical_accuracy: 0.9448 - val_loss: 2.3004 - val_sparse_categorical_accuracy: 0.5695

Epoch 24/100

97/97 [==============================] - 41s 419ms/step - loss: 0.1464 - sparse_categorical_accuracy: 0.9541 - val_loss: 7.6270 - val_sparse_categorical_accuracy: 0.5711

Epoch 25/100

97/97 [==============================] - 41s 419ms/step - loss: 0.1364 - sparse_categorical_accuracy: 0.9571 - val_loss: 2.4297 - val_sparse_categorical_accuracy: 0.5453

Epoch 26/100

97/97 [==============================] - 41s 419ms/step - loss: 0.1406 - sparse_categorical_accuracy: 0.9570 - val_loss: 2.4325 - val_sparse_categorical_accuracy: 0.5789

Epoch 27/100

97/97 [==============================] - 41s 419ms/step - loss: 0.1594 - sparse_categorical_accuracy: 0.9498 - val_loss: 2.0310 - val_sparse_categorical_accuracy: 0.6078

Epoch 28/100

97/97 [==============================] - 41s 420ms/step - loss: 0.1152 - sparse_categorical_accuracy: 0.9640 - val_loss: 2.1466 - val_sparse_categorical_accuracy: 0.5938

Epoch 29/100

97/97 [==============================] - 41s 420ms/step - loss: 0.1241 - sparse_categorical_accuracy: 0.9609 - val_loss: 10.0702 - val_sparse_categorical_accuracy: 0.4461
Epoch 30/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1733 - sparse_categorical_accuracy: 0.9442 - val_loss: 25.9625 - val_sparse_categorical_accuracy: 0.5031
Epoch 31/100
97/97 [==============================] - 41s 420ms/step - loss: 0.1077 - sparse_categorical_accuracy: 0.9696 - val_loss: 2.0182 - val_sparse_categorical_accuracy: 0.5891
Epoch 32/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0963 - sparse_categorical_accuracy: 0.9715 - val_loss: 2.6786 - val_sparse_categorical_accuracy: 0.5312
Epoch 33/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1300 - sparse_categorical_accuracy: 0.9602 - val_loss: 2.3876 - val_sparse_categorical_accuracy: 0.5500
Epoch 34/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1214 - sparse_categorical_accuracy: 0.9616 - val_loss: 2.0687 - val_sparse_categorical_accuracy: 0.6109
Epoch 35/100
97/97 [==============================] - 41s 420ms/step - loss: 0.1009 - sparse_categorical_accuracy: 0.9662 - val_loss: 2.5717 - val_sparse_categorical_accuracy: 0.5297
Epoch 36/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1109 - sparse_categorical_accuracy: 0.9637 - val_loss: 4.5214 - val_sparse_categorical_accuracy: 0.5906
Epoch 37/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1071 - sparse_categorical_accuracy: 0.9670 - val_loss: 2.1130 - val_sparse_categorical_accuracy: 0.6062
Epoch 38/100
97/97 [==============================] - 41s 420ms/step - loss: 0.1229 - sparse_categorical_accuracy: 0.9594 - val_loss: 2.0630 - val_sparse_categorical_accuracy: 0.6211
Epoch 39/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1255 - sparse_categorical_accuracy: 0.9609 - val_loss: 2.2697 - val_sparse_categorical_accuracy: 0.5422
Epoch 40/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0767 - sparse_categorical_accuracy: 0.9759 - val_loss: 2.1426 - val_sparse_categorical_accuracy: 0.6086
Epoch 41/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0710 - sparse_categorical_accuracy: 0.9802 - val_loss: 2.7422 - val_sparse_categorical_accuracy: 0.5531
Epoch 42/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0893 - sparse_categorical_accuracy: 0.9718 - val_loss: 2.2328 - val_sparse_categorical_accuracy: 0.5461
Epoch 43/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1156 - sparse_categorical_accuracy: 0.9630 - val_loss: 4.2643 - val_sparse_categorical_accuracy: 0.4633

Epoch 44/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0887 - sparse_categorical_accuracy: 0.9722 - val_loss: 2.5617 - val_sparse_categorical_accuracy: 0.5930
Epoch 45/100
97/97 [==============================] - 41s 418ms/step - loss: 0.1191 - sparse_categorical_accuracy: 0.9623 - val_loss: 4.5997 - val_sparse_categorical_accuracy: 0.5641
Epoch 46/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0864 - sparse_categorical_accuracy: 0.9740 - val_loss: 2.3964 - val_sparse_categorical_accuracy: 0.5727
Epoch 47/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0863 - sparse_categorical_accuracy: 0.9734 - val_loss: 2.7971 - val_sparse_categorical_accuracy: 0.5945
Epoch 48/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0927 - sparse_categorical_accuracy: 0.9727 - val_loss: 2.4039 - val_sparse_categorical_accuracy: 0.6180
Epoch 49/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1236 - sparse_categorical_accuracy: 0.9656 - val_loss: 4.6114 - val_sparse_categorical_accuracy: 0.4445
Epoch 50/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0846 - sparse_categorical_accuracy: 0.9735 - val_loss: 2.4962 - val_sparse_categorical_accuracy: 0.5719
Epoch 51/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0715 - sparse_categorical_accuracy: 0.9790 - val_loss: 2.5417 - val_sparse_categorical_accuracy: 0.6195
Epoch 52/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0592 - sparse_categorical_accuracy: 0.9808 - val_loss: 2.8696 - val_sparse_categorical_accuracy: 0.5750
Epoch 53/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1045 - sparse_categorical_accuracy: 0.9706 - val_loss: 10.7306 - val_sparse_categorical_accuracy: 0.2234
Epoch 54/100
97/97 [==============================] - 41s 419ms/step - loss: 0.5820 - sparse_categorical_accuracy: 0.8185 - val_loss: 1767.2764 - val_sparse_categorical_accuracy: 0.1375
Epoch 55/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1772 - sparse_categorical_accuracy: 0.9464 - val_loss: 20.1694 - val_sparse_categorical_accuracy: 0.2992
Epoch 56/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1419 - sparse_categorical_accuracy: 0.9571 - val_loss: 2.4961 - val_sparse_categorical_accuracy: 0.5477
Epoch 57/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1225 - sparse_categorical_accuracy: 0.9659 - val_loss: 4.1794 - val_sparse_categorical_accuracy: 0.4148
Epoch 58/100
97/97 [==============================] - 41s 418ms/step - loss: 0.0982 - sparse_categorical_accuracy:

0.9724 - val_loss: 2.4928 - val_sparse_categorical_accuracy: 0.5625

Epoch 59/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0679 - sparse_categorical_accuracy: 0.9770 - val_loss: 2.0234 - val_sparse_categorical_accuracy: 0.6289

Epoch 60/100

97/97 [==============================] - 41s 418ms/step - loss: 0.0413 - sparse_categorical_accuracy: 0.9886 - val_loss: 2.1768 - val_sparse_categorical_accuracy: 0.6469

Epoch 61/100

97/97 [==============================] - 41s 420ms/step - loss: 0.0591 - sparse_categorical_accuracy: 0.9834 - val_loss: 2.2407 - val_sparse_categorical_accuracy: 0.6250

Epoch 62/100

97/97 [==============================] - 41s 420ms/step - loss: 0.0489 - sparse_categorical_accuracy: 0.9846 - val_loss: 7.0365 - val_sparse_categorical_accuracy: 0.5508

Epoch 63/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0586 - sparse_categorical_accuracy: 0.9822 - val_loss: 3.6605 - val_sparse_categorical_accuracy: 0.4531

Epoch 64/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0914 - sparse_categorical_accuracy: 0.9701 - val_loss: 2.4791 - val_sparse_categorical_accuracy: 0.6078

Epoch 65/100

97/97 [==============================] - 41s 420ms/step - loss: 0.0478 - sparse_categorical_accuracy: 0.9860 - val_loss: 3.1535 - val_sparse_categorical_accuracy: 0.5367

Epoch 66/100

97/97 [==============================] - 41s 419ms/step - loss: 0.1330 - sparse_categorical_accuracy: 0.9596 - val_loss: 26.3034 - val_sparse_categorical_accuracy: 0.4289

Epoch 67/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0912 - sparse_categorical_accuracy: 0.9735 - val_loss: 2.2158 - val_sparse_categorical_accuracy: 0.6070

Epoch 68/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0650 - sparse_categorical_accuracy: 0.9795 - val_loss: 219.9380 - val_sparse_categorical_accuracy: 0.1187

Epoch 69/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0855 - sparse_categorical_accuracy: 0.9728 - val_loss: 2.4339 - val_sparse_categorical_accuracy: 0.6141

Epoch 70/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0504 - sparse_categorical_accuracy: 0.9856 - val_loss: 2.1142 - val_sparse_categorical_accuracy: 0.6156

Epoch 71/100

97/97 [==============================] - 41s 420ms/step - loss: 0.0306 - sparse_categorical_accuracy: 0.9907 - val_loss: 2.2281 - val_sparse_categorical_accuracy: 0.6313

Epoch 72/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0289 - sparse_categorical_accuracy: 0.9902 - val_loss: 2.2064 - val_sparse_categorical_accuracy: 0.6500

Epoch 73/100

97/97 [==============================] - 41s 419ms/step - loss: 0.0255 - sparse_categorical_accuracy: 0.9911 - val_loss: 2.6004 - val_sparse_categorical_accuracy: 0.6008
Epoch 74/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0368 - sparse_categorical_accuracy: 0.9881 - val_loss: 2.3789 - val_sparse_categorical_accuracy: 0.6227
Epoch 75/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0798 - sparse_categorical_accuracy: 0.9747 - val_loss: 2.9480 - val_sparse_categorical_accuracy: 0.5859
Epoch 76/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1008 - sparse_categorical_accuracy: 0.9692 - val_loss: 3.0528 - val_sparse_categorical_accuracy: 0.5773
Epoch 77/100
97/97 [==============================] - 41s 420ms/step - loss: 0.0514 - sparse_categorical_accuracy: 0.9843 - val_loss: 2.5093 - val_sparse_categorical_accuracy: 0.6172
Epoch 78/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0309 - sparse_categorical_accuracy: 0.9894 - val_loss: 2.4108 - val_sparse_categorical_accuracy: 0.6492
Epoch 79/100
97/97 [==============================] - 41s 420ms/step - loss: 0.0199 - sparse_categorical_accuracy: 0.9931 - val_loss: 2.4683 - val_sparse_categorical_accuracy: 0.6187
Epoch 80/100
97/97 [==============================] - 41s 418ms/step - loss: 0.0445 - sparse_categorical_accuracy: 0.9846 - val_loss: 2.3170 - val_sparse_categorical_accuracy: 0.6203
Epoch 81/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0463 - sparse_categorical_accuracy: 0.9844 - val_loss: 2.5595 - val_sparse_categorical_accuracy: 0.5914
Epoch 82/100
97/97 [==============================] - 41s 419ms/step - loss: 0.1442 - sparse_categorical_accuracy: 0.9569 - val_loss: 3.2813 - val_sparse_categorical_accuracy: 0.4891
Epoch 83/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0865 - sparse_categorical_accuracy: 0.9720 - val_loss: 2.7134 - val_sparse_categorical_accuracy: 0.6187
Epoch 84/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0379 - sparse_categorical_accuracy: 0.9869 - val_loss: 2.0057 - val_sparse_categorical_accuracy: 0.6336
Epoch 85/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0396 - sparse_categorical_accuracy: 0.9876 - val_loss: 2.3600 - val_sparse_categorical_accuracy: 0.6305
Epoch 86/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0365 - sparse_categorical_accuracy: 0.9885 - val_loss: 2.3195 - val_sparse_categorical_accuracy: 0.6328
Epoch 87/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0425 - sparse_categorical_accuracy: 0.9851 - val_loss: 3.2020 - val_sparse_categorical_accuracy: 0.5852

Epoch 88/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0285 - sparse_categorical_accuracy: 0.9904 - val_loss: 2.6409 - val_sparse_categorical_accuracy: 0.5906
Epoch 89/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0508 - sparse_categorical_accuracy: 0.9824 - val_loss: 3.9577 - val_sparse_categorical_accuracy: 0.5437
Epoch 90/100
97/97 [==============================] - 41s 420ms/step - loss: 0.0425 - sparse_categorical_accuracy: 0.9870 - val_loss: 2.6774 - val_sparse_categorical_accuracy: 0.6273
Epoch 91/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0399 - sparse_categorical_accuracy: 0.9878 - val_loss: 3.2863 - val_sparse_categorical_accuracy: 0.5336
Epoch 92/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0506 - sparse_categorical_accuracy: 0.9832 - val_loss: 2.4475 - val_sparse_categorical_accuracy: 0.6187
Epoch 93/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0292 - sparse_categorical_accuracy: 0.9904 - val_loss: 3.1949 - val_sparse_categorical_accuracy: 0.5914
Epoch 94/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0313 - sparse_categorical_accuracy: 0.9896 - val_loss: 3.3030 - val_sparse_categorical_accuracy: 0.5328
Epoch 95/100
97/97 [==============================] - 41s 418ms/step - loss: 0.0498 - sparse_categorical_accuracy: 0.9834 - val_loss: 2.6168 - val_sparse_categorical_accuracy: 0.6141
Epoch 96/100
97/97 [==============================] - 41s 418ms/step - loss: 0.0341 - sparse_categorical_accuracy: 0.9888 - val_loss: 2.6999 - val_sparse_categorical_accuracy: 0.5938
Epoch 97/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0202 - sparse_categorical_accuracy: 0.9946 - val_loss: 2.5980 - val_sparse_categorical_accuracy: 0.6016
Epoch 98/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0155 - sparse_categorical_accuracy: 0.9951 - val_loss: 3.4250 - val_sparse_categorical_accuracy: 0.5492
Epoch 99/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0709 - sparse_categorical_accuracy: 0.9801 - val_loss: 8.1310 - val_sparse_categorical_accuracy: 0.5445
Epoch 100/100
97/97 [==============================] - 41s 419ms/step - loss: 0.0685 - sparse_categorical_accuracy: 0.9762 - val_loss: 3.8525 - val_sparse_categorical_accuracy: 0.5344
Model: "deep__res_2"

Layer (type)	Output Shape	Param #
conv2d_249 (Conv2D)	multiple	9472

_____

batch_normalization_247 (Bat multiple 256

_____

activation_233 (Activation) multiple 0

_____

max_pooling2d_19 (MaxPooling multiple 0

_____

sequential_4 (Sequential) (None, 4, 4, 2048) 58361216

_____

global_average_pooling2d_4 (multiple 0

_____

dense_16 (Dense) multiple 20490

===

Total params: 58,391,434

Trainable params: 58,240,010

Non-trainable params: 151,424

_____