Res101_112*112:

Epoch 1/100

97/97 [==============================] - 46s 327ms/step - loss: 2.2499 - sparse_categorical_accuracy: 0.3028 - val_loss: 3.0667 - val_sparse_categorical_accuracy: 0.0812

Epoch 2/100

97/97 [==============================] - 29s 297ms/step - loss: 1.5962 - sparse_categorical_accuracy: 0.4679 - val_loss: 3.8895 - val_sparse_categorical_accuracy: 0.1008

Epoch 3/100

97/97 [==============================] - 29s 300ms/step - loss: 1.3836 - sparse_categorical_accuracy: 0.5377 - val_loss: 2.8216 - val_sparse_categorical_accuracy: 0.1109

Epoch 4/100

97/97 [==============================] - 29s 301ms/step - loss: 1.2471 - sparse_categorical_accuracy: 0.5838 - val_loss: 2.4538 - val_sparse_categorical_accuracy: 0.2211

Epoch 5/100

97/97 [==============================] - 29s 296ms/step - loss: 1.1270 - sparse_categorical_accuracy: 0.6242 - val_loss: 2.1592 - val_sparse_categorical_accuracy: 0.3383

Epoch 6/100

97/97 [==============================] - 29s 297ms/step - loss: 0.9975 - sparse_categorical_accuracy: 0.6680 - val_loss: 1.4884 - val_sparse_categorical_accuracy: 0.4922

Epoch 7/100

97/97 [==============================] - 29s 301ms/step - loss: 0.8950 - sparse_categorical_accuracy: 0.7031 - val_loss: 1.4281 - val_sparse_categorical_accuracy: 0.5406

Epoch 8/100

97/97 [==============================] - 29s 297ms/step - loss: 0.7742 - sparse_categorical_accuracy: 0.7378 - val_loss: 1.7468 - val_sparse_categorical_accuracy: 0.4469

Epoch 9/100

97/97 [==============================] - 29s 297ms/step - loss: 0.7152 - sparse_categorical_accuracy: 0.7567 - val_loss: 1.6372 - val_sparse_categorical_accuracy: 0.5453

Epoch 10/100

97/97 [==============================] - 29s 296ms/step - loss: 0.5685 - sparse_categorical_accuracy: 0.8083 - val_loss: 1.7234 - val_sparse_categorical_accuracy: 0.5102

Epoch 11/100

97/97 [==============================] - 29s 301ms/step - loss: 0.4899 - sparse_categorical_accuracy: 0.8379 - val_loss: 2.8892 - val_sparse_categorical_accuracy: 0.4297

Epoch 12/100

97/97 [==============================] - 29s 297ms/step - loss: 0.4103 - sparse_categorical_accuracy: 0.8607 - val_loss: 1.6842 - val_sparse_categorical_accuracy: 0.5430

Epoch 13/100

97/97 [==============================] - 29s 297ms/step - loss: 0.4313 - sparse_categorical_accuracy: 0.8559 - val_loss: 2.6052 - val_sparse_categorical_accuracy: 0.4281

Epoch 14/100

97/97 [==============================] - 29s 301ms/step - loss: 0.3121 - sparse_categorical_accuracy: 0.8951 - val_loss: 2.9737 - val_sparse_categorical_accuracy: 0.4648

Epoch 15/100
97/97 [==============================] - 29s 301ms/step - loss: 0.2416 - sparse_categorical_accuracy: 0.9192 - val_loss: 2.0256 - val_sparse_categorical_accuracy: 0.5859
Epoch 16/100
97/97 [==============================] - 29s 297ms/step - loss: 0.2114 - sparse_categorical_accuracy: 0.9312 - val_loss: 2.8263 - val_sparse_categorical_accuracy: 0.5008
Epoch 17/100
97/97 [==============================] - 29s 301ms/step - loss: 0.1911 - sparse_categorical_accuracy: 0.9372 - val_loss: 2.1881 - val_sparse_categorical_accuracy: 0.5523
Epoch 18/100
97/97 [==============================] - 29s 300ms/step - loss: 0.2229 - sparse_categorical_accuracy: 0.9244 - val_loss: 2.7480 - val_sparse_categorical_accuracy: 0.4781
Epoch 19/100
97/97 [==============================] - 29s 296ms/step - loss: 0.2067 - sparse_categorical_accuracy: 0.9320 - val_loss: 3.0110 - val_sparse_categorical_accuracy: 0.4617
Epoch 20/100
97/97 [==============================] - 29s 297ms/step - loss: 0.1681 - sparse_categorical_accuracy: 0.9466 - val_loss: 2.6116 - val_sparse_categorical_accuracy: 0.5344
Epoch 21/100
97/97 [==============================] - 29s 301ms/step - loss: 0.1587 - sparse_categorical_accuracy: 0.9501 - val_loss: 2.2080 - val_sparse_categorical_accuracy: 0.5664
Epoch 22/100
97/97 [==============================] - 29s 296ms/step - loss: 0.1305 - sparse_categorical_accuracy: 0.9584 - val_loss: 2.7481 - val_sparse_categorical_accuracy: 0.4867
Epoch 23/100
97/97 [==============================] - 29s 297ms/step - loss: 0.1184 - sparse_categorical_accuracy: 0.9610 - val_loss: 2.2162 - val_sparse_categorical_accuracy: 0.5750
Epoch 24/100
97/97 [==============================] - 29s 297ms/step - loss: 0.0808 - sparse_categorical_accuracy: 0.9777 - val_loss: 2.8272 - val_sparse_categorical_accuracy: 0.5516
Epoch 25/100
97/97 [==============================] - 29s 301ms/step - loss: 0.1085 - sparse_categorical_accuracy: 0.9657 - val_loss: 2.8517 - val_sparse_categorical_accuracy: 0.5094
Epoch 26/100
97/97 [==============================] - 29s 300ms/step - loss: 0.1354 - sparse_categorical_accuracy: 0.9576 - val_loss: 2.4017 - val_sparse_categorical_accuracy: 0.5352
Epoch 27/100
97/97 [==============================] - 29s 296ms/step - loss: 0.1014 - sparse_categorical_accuracy: 0.9685 - val_loss: 2.5084 - val_sparse_categorical_accuracy: 0.5336
Epoch 28/100
97/97 [==============================] - 29s 301ms/step - loss: 0.0931 - sparse_categorical_accuracy: 0.9723 - val_loss: 2.5031 - val_sparse_categorical_accuracy: 0.5664
Epoch 29/100
97/97 [==============================] - 29s 297ms/step - loss: 0.4051 - sparse_categorical_accuracy:

0.8695 - val_loss: 2.8424 - val_sparse_categorical_accuracy: 0.4672

Epoch 30/100

97/97 [==============================] - 29s 296ms/step - loss: 0.1853 - sparse_categorical_accuracy: 0.9382 - val_loss: 2.1081 - val_sparse_categorical_accuracy: 0.5375

Epoch 31/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0967 - sparse_categorical_accuracy: 0.9698 - val_loss: 2.2499 - val_sparse_categorical_accuracy: 0.5586

Epoch 32/100

97/97 [==============================] - 29s 297ms/step - loss: 0.1007 - sparse_categorical_accuracy: 0.9689 - val_loss: 2.2793 - val_sparse_categorical_accuracy: 0.5672

Epoch 33/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0714 - sparse_categorical_accuracy: 0.9789 - val_loss: 2.3339 - val_sparse_categorical_accuracy: 0.5844

Epoch 34/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0868 - sparse_categorical_accuracy: 0.9735 - val_loss: 2.3467 - val_sparse_categorical_accuracy: 0.5820

Epoch 35/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0739 - sparse_categorical_accuracy: 0.9755 - val_loss: 3.0183 - val_sparse_categorical_accuracy: 0.5266

Epoch 36/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0486 - sparse_categorical_accuracy: 0.9856 - val_loss: 3.0876 - val_sparse_categorical_accuracy: 0.5328

Epoch 37/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0804 - sparse_categorical_accuracy: 0.9727 - val_loss: 2.6934 - val_sparse_categorical_accuracy: 0.5711

Epoch 38/100

97/97 [==============================] - 29s 297ms/step - loss: 0.1029 - sparse_categorical_accuracy: 0.9670 - val_loss: 2.2591 - val_sparse_categorical_accuracy: 0.5852

Epoch 39/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0541 - sparse_categorical_accuracy: 0.9821 - val_loss: 3.6023 - val_sparse_categorical_accuracy: 0.5094

Epoch 40/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0642 - sparse_categorical_accuracy: 0.9796 - val_loss: 2.4858 - val_sparse_categorical_accuracy: 0.5734

Epoch 41/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0913 - sparse_categorical_accuracy: 0.9702 - val_loss: 2.7504 - val_sparse_categorical_accuracy: 0.5695

Epoch 42/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0573 - sparse_categorical_accuracy: 0.9830 - val_loss: 2.7196 - val_sparse_categorical_accuracy: 0.5578

Epoch 43/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0824 - sparse_categorical_accuracy: 0.9748 - val_loss: 3.7715 - val_sparse_categorical_accuracy: 0.4883

Epoch 44/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0777 - sparse_categorical_accuracy: 0.9760 - val_loss: 2.3637 - val_sparse_categorical_accuracy: 0.5508
Epoch 45/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0776 - sparse_categorical_accuracy: 0.9753 - val_loss: 3.5310 - val_sparse_categorical_accuracy: 0.4625
Epoch 46/100
97/97 [==============================] - 29s 300ms/step - loss: 0.2195 - sparse_categorical_accuracy: 0.9301 - val_loss: 3.3002 - val_sparse_categorical_accuracy: 0.4734
Epoch 47/100
97/97 [==============================] - 29s 296ms/step - loss: 0.1000 - sparse_categorical_accuracy: 0.9675 - val_loss: 2.1455 - val_sparse_categorical_accuracy: 0.6180
Epoch 48/100
97/97 [==============================] - 29s 301ms/step - loss: 0.1184 - sparse_categorical_accuracy: 0.9641 - val_loss: 3.3224 - val_sparse_categorical_accuracy: 0.5086
Epoch 49/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0669 - sparse_categorical_accuracy: 0.9801 - val_loss: 1.9486 - val_sparse_categorical_accuracy: 0.6516
Epoch 50/100
97/97 [==============================] - 29s 297ms/step - loss: 0.0328 - sparse_categorical_accuracy: 0.9894 - val_loss: 2.6884 - val_sparse_categorical_accuracy: 0.6156
Epoch 51/100
97/97 [==============================] - 29s 301ms/step - loss: 0.0390 - sparse_categorical_accuracy: 0.9871 - val_loss: 2.8360 - val_sparse_categorical_accuracy: 0.5656
Epoch 52/100
97/97 [==============================] - 29s 297ms/step - loss: 0.0631 - sparse_categorical_accuracy: 0.9791 - val_loss: 3.0228 - val_sparse_categorical_accuracy: 0.5688
Epoch 53/100
97/97 [==============================] - 29s 301ms/step - loss: 0.0811 - sparse_categorical_accuracy: 0.9762 - val_loss: 2.2713 - val_sparse_categorical_accuracy: 0.6070
Epoch 54/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0423 - sparse_categorical_accuracy: 0.9873 - val_loss: 3.5568 - val_sparse_categorical_accuracy: 0.4891
Epoch 55/100
97/97 [==============================] - 29s 297ms/step - loss: 0.0884 - sparse_categorical_accuracy: 0.9703 - val_loss: 2.1523 - val_sparse_categorical_accuracy: 0.6078
Epoch 56/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0401 - sparse_categorical_accuracy: 0.9868 - val_loss: 2.3078 - val_sparse_categorical_accuracy: 0.6000
Epoch 57/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0223 - sparse_categorical_accuracy: 0.9916 - val_loss: 2.3335 - val_sparse_categorical_accuracy: 0.6266
Epoch 58/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0532 - sparse_categorical_accuracy: 0.9836 - val_loss: 2.7884 - val_sparse_categorical_accuracy: 0.5938

Epoch 59/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0482 - sparse_categorical_accuracy: 0.9847 - val_loss: 3.2316 - val_sparse_categorical_accuracy: 0.5875
Epoch 60/100
97/97 [==============================] - 29s 297ms/step - loss: 0.1661 - sparse_categorical_accuracy: 0.9512 - val_loss: 469.1452 - val_sparse_categorical_accuracy: 0.2195
Epoch 61/100
97/97 [==============================] - 29s 296ms/step - loss: 0.1438 - sparse_categorical_accuracy: 0.9559 - val_loss: 3.8827 - val_sparse_categorical_accuracy: 0.4461
Epoch 62/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0773 - sparse_categorical_accuracy: 0.9758 - val_loss: 3.7404 - val_sparse_categorical_accuracy: 0.4297
Epoch 63/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0681 - sparse_categorical_accuracy: 0.9785 - val_loss: 2.1164 - val_sparse_categorical_accuracy: 0.6156
Epoch 64/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0336 - sparse_categorical_accuracy: 0.9889 - val_loss: 2.4768 - val_sparse_categorical_accuracy: 0.6086
Epoch 65/100
97/97 [==============================] - 29s 301ms/step - loss: 0.0265 - sparse_categorical_accuracy: 0.9916 - val_loss: 2.3029 - val_sparse_categorical_accuracy: 0.6500
Epoch 66/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0414 - sparse_categorical_accuracy: 0.9856 - val_loss: 3.8520 - val_sparse_categorical_accuracy: 0.5039
Epoch 67/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0507 - sparse_categorical_accuracy: 0.9829 - val_loss: 2.6869 - val_sparse_categorical_accuracy: 0.5648
Epoch 68/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0175 - sparse_categorical_accuracy: 0.9938 - val_loss: 2.2647 - val_sparse_categorical_accuracy: 0.6227
Epoch 69/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0129 - sparse_categorical_accuracy: 0.9958 - val_loss: 2.3570 - val_sparse_categorical_accuracy: 0.6492
Epoch 70/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0110 - sparse_categorical_accuracy: 0.9966 - val_loss: 2.6020 - val_sparse_categorical_accuracy: 0.6055
Epoch 71/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0093 - sparse_categorical_accuracy: 0.9972 - val_loss: 2.5615 - val_sparse_categorical_accuracy: 0.6195
Epoch 72/100
97/97 [==============================] - 29s 300ms/step - loss: 0.0119 - sparse_categorical_accuracy: 0.9961 - val_loss: 2.8004 - val_sparse_categorical_accuracy: 0.6055
Epoch 73/100
97/97 [==============================] - 29s 296ms/step - loss: 0.0170 - sparse_categorical_accuracy:

0.9940 - val_loss: 2.7710 - val_sparse_categorical_accuracy: 0.5984

Epoch 74/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0461 - sparse_categorical_accuracy: 0.9838 - val_loss: 3.7317 - val_sparse_categorical_accuracy: 0.5125

Epoch 75/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0835 - sparse_categorical_accuracy: 0.9727 - val_loss: 2.8727 - val_sparse_categorical_accuracy: 0.5641

Epoch 76/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0832 - sparse_categorical_accuracy: 0.9723 - val_loss: 3.1679 - val_sparse_categorical_accuracy: 0.5008

Epoch 77/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0769 - sparse_categorical_accuracy: 0.9744 - val_loss: 2.2979 - val_sparse_categorical_accuracy: 0.5953

Epoch 78/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0625 - sparse_categorical_accuracy: 0.9783 - val_loss: 2.9243 - val_sparse_categorical_accuracy: 0.5188

Epoch 79/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0574 - sparse_categorical_accuracy: 0.9818 - val_loss: 2.7301 - val_sparse_categorical_accuracy: 0.6016

Epoch 80/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0400 - sparse_categorical_accuracy: 0.9848 - val_loss: 4.3097 - val_sparse_categorical_accuracy: 0.4508

Epoch 81/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0397 - sparse_categorical_accuracy: 0.9875 - val_loss: 3.0882 - val_sparse_categorical_accuracy: 0.5453

Epoch 82/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0341 - sparse_categorical_accuracy: 0.9890 - val_loss: 2.8213 - val_sparse_categorical_accuracy: 0.5828

Epoch 83/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0194 - sparse_categorical_accuracy: 0.9926 - val_loss: 2.1593 - val_sparse_categorical_accuracy: 0.6445

Epoch 84/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0171 - sparse_categorical_accuracy: 0.9929 - val_loss: 2.3978 - val_sparse_categorical_accuracy: 0.6305

Epoch 85/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0526 - sparse_categorical_accuracy: 0.9843 - val_loss: 3.3866 - val_sparse_categorical_accuracy: 0.5109

Epoch 86/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0473 - sparse_categorical_accuracy: 0.9851 - val_loss: 3.0470 - val_sparse_categorical_accuracy: 0.5555

Epoch 87/100

97/97 [==============================] - 29s 297ms/step - loss: 0.5441 - sparse_categorical_accuracy: 0.8382 - val_loss: 12090.9082 - val_sparse_categorical_accuracy: 0.1023

Epoch 88/100

97/97 [==============================] - 29s 300ms/step - loss: 0.2079 - sparse_categorical_accuracy: 0.9411 - val_loss: 1.9248 - val_sparse_categorical_accuracy: 0.5680

Epoch 89/100

97/97 [==============================] - 29s 301ms/step - loss: 0.0634 - sparse_categorical_accuracy: 0.9835 - val_loss: 2.0816 - val_sparse_categorical_accuracy: 0.6016

Epoch 90/100

97/97 [==============================] - 29s 301ms/step - loss: 0.2033 - sparse_categorical_accuracy: 0.9359 - val_loss: 3.1946 - val_sparse_categorical_accuracy: 0.5484

Epoch 91/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0725 - sparse_categorical_accuracy: 0.9783 - val_loss: 2.7068 - val_sparse_categorical_accuracy: 0.5656

Epoch 92/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0856 - sparse_categorical_accuracy: 0.9743 - val_loss: 3.2333 - val_sparse_categorical_accuracy: 0.5039

Epoch 93/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0264 - sparse_categorical_accuracy: 0.9916 - val_loss: 2.0697 - val_sparse_categorical_accuracy: 0.6430

Epoch 94/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0077 - sparse_categorical_accuracy: 0.9972 - val_loss: 2.1522 - val_sparse_categorical_accuracy: 0.6625

Epoch 95/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0035 - sparse_categorical_accuracy: 0.9984 - val_loss: 2.2872 - val_sparse_categorical_accuracy: 0.6508

Epoch 96/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0033 - sparse_categorical_accuracy: 0.9988 - val_loss: 2.4420 - val_sparse_categorical_accuracy: 0.6492

Epoch 97/100

97/97 [==============================] - 29s 296ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9985 - val_loss: 2.4098 - val_sparse_categorical_accuracy: 0.6547

Epoch 98/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0021 - sparse_categorical_accuracy: 0.9989 - val_loss: 2.4697 - val_sparse_categorical_accuracy: 0.6570

Epoch 99/100

97/97 [==============================] - 29s 297ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9988 - val_loss: 2.4456 - val_sparse_categorical_accuracy: 0.6641

Epoch 100/100

97/97 [==============================] - 29s 300ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 - val_loss: 2.4886 - val_sparse_categorical_accuracy: 0.6656

Model: "deep__res_1"

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Layer (type)	Output Shape	Param #
conv2d_145 (Conv2D)	multiple	9472

_____

batch_normalization_143 (Bat multiple 256

_____

activation_133 (Activation) multiple 0

_____

max_pooling2d_18 (MaxPooling multiple 0

_____

sequential_3 (Sequential) (None, 4, 4, 2048) 42648448

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global_average_pooling2d_3 (multiple 0

_____

dense_15 (Dense) multiple 20490

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Total params: 42,678,666

Trainable params: 42,573,322

Non-trainable params: 105,344

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