

Res18_112*112:

Epoch 1/300

97/97 [=====] - 13s 81ms/step - loss: 1.6156 - sparse_categorical_accuracy: 0.4593
- val_loss: 5.7348 - val_sparse_categorical_accuracy: 0.1422

Epoch 2/300

97/97 [=====] - 7s 71ms/step - loss: 1.2590 - sparse_categorical_accuracy: 0.5742 -
val_loss: 2.9625 - val_sparse_categorical_accuracy: 0.2055

Epoch 3/300

97/97 [=====] - 7s 69ms/step - loss: 1.0785 - sparse_categorical_accuracy: 0.6376 -
val_loss: 2.7889 - val_sparse_categorical_accuracy: 0.2750

Epoch 4/300

97/97 [=====] - 7s 69ms/step - loss: 0.9517 - sparse_categorical_accuracy: 0.6828 -
val_loss: 2.3141 - val_sparse_categorical_accuracy: 0.3688

Epoch 5/300

97/97 [=====] - 7s 70ms/step - loss: 0.8317 - sparse_categorical_accuracy: 0.7166 -
val_loss: 2.7880 - val_sparse_categorical_accuracy: 0.3461

Epoch 6/300

97/97 [=====] - 7s 70ms/step - loss: 0.7002 - sparse_categorical_accuracy: 0.7646 -
val_loss: 2.6041 - val_sparse_categorical_accuracy: 0.4047

Epoch 7/300

97/97 [=====] - 7s 70ms/step - loss: 0.5801 - sparse_categorical_accuracy: 0.8048 -
val_loss: 1.6816 - val_sparse_categorical_accuracy: 0.5406

Epoch 8/300

97/97 [=====] - 7s 70ms/step - loss: 0.4434 - sparse_categorical_accuracy: 0.8473 -
val_loss: 2.7635 - val_sparse_categorical_accuracy: 0.4422

Epoch 9/300

97/97 [=====] - 7s 70ms/step - loss: 0.3472 - sparse_categorical_accuracy: 0.8822 -
val_loss: 1.6626 - val_sparse_categorical_accuracy: 0.5570

Epoch 10/300

97/97 [=====] - 7s 70ms/step - loss: 0.2470 - sparse_categorical_accuracy: 0.9162 -
val_loss: 2.7896 - val_sparse_categorical_accuracy: 0.4859

Epoch 11/300

97/97 [=====] - 7s 70ms/step - loss: 0.2172 - sparse_categorical_accuracy: 0.9260 -
val_loss: 3.7026 - val_sparse_categorical_accuracy: 0.3953

Epoch 12/300

97/97 [=====] - 7s 70ms/step - loss: 0.1237 - sparse_categorical_accuracy: 0.9583 -
val_loss: 1.7902 - val_sparse_categorical_accuracy: 0.6156

Epoch 13/300

97/97 [=====] - 7s 70ms/step - loss: 0.1123 - sparse_categorical_accuracy: 0.9613 -
val_loss: 1.8179 - val_sparse_categorical_accuracy: 0.6242

Epoch 14/300

97/97 [=====] - 7s 70ms/step - loss: 0.1008 - sparse_categorical_accuracy: 0.9661 -
val_loss: 2.1968 - val_sparse_categorical_accuracy: 0.6109

Epoch 15/300

97/97 [=====] - 7s 70ms/step - loss: 0.0831 - sparse_categorical_accuracy: 0.9731 -
val_loss: 2.0608 - val_sparse_categorical_accuracy: 0.6266

Epoch 16/300

97/97 [=====] - 7s 69ms/step - loss: 0.0812 - sparse_categorical_accuracy: 0.9747 -
val_loss: 2.4111 - val_sparse_categorical_accuracy: 0.6000

Epoch 17/300

97/97 [=====] - 7s 71ms/step - loss: 0.0575 - sparse_categorical_accuracy: 0.9817 -
val_loss: 1.9653 - val_sparse_categorical_accuracy: 0.6492

Epoch 18/300

97/97 [=====] - 7s 70ms/step - loss: 0.0542 - sparse_categorical_accuracy: 0.9820 -
val_loss: 2.4522 - val_sparse_categorical_accuracy: 0.5711

Epoch 19/300

97/97 [=====] - 7s 69ms/step - loss: 0.0973 - sparse_categorical_accuracy: 0.9676 -
val_loss: 2.3930 - val_sparse_categorical_accuracy: 0.5953

Epoch 20/300

97/97 [=====] - 7s 69ms/step - loss: 0.0447 - sparse_categorical_accuracy: 0.9855 -
val_loss: 2.2027 - val_sparse_categorical_accuracy: 0.6375

Epoch 21/300

97/97 [=====] - 7s 70ms/step - loss: 0.0264 - sparse_categorical_accuracy: 0.9928 -
val_loss: 2.2064 - val_sparse_categorical_accuracy: 0.6078

Epoch 22/300

97/97 [=====] - 7s 71ms/step - loss: 0.0149 - sparse_categorical_accuracy: 0.9949 -
val_loss: 1.9251 - val_sparse_categorical_accuracy: 0.6578

Epoch 23/300

97/97 [=====] - 7s 69ms/step - loss: 0.0362 - sparse_categorical_accuracy: 0.9881 -
val_loss: 2.4410 - val_sparse_categorical_accuracy: 0.5969

Epoch 24/300

97/97 [=====] - 7s 70ms/step - loss: 0.0814 - sparse_categorical_accuracy: 0.9721 -
val_loss: 3.2000 - val_sparse_categorical_accuracy: 0.5570

Epoch 25/300

97/97 [=====] - 7s 70ms/step - loss: 0.0825 - sparse_categorical_accuracy: 0.9728 -
val_loss: 2.8640 - val_sparse_categorical_accuracy: 0.5672

Epoch 26/300

97/97 [=====] - 7s 75ms/step - loss: 0.0304 - sparse_categorical_accuracy: 0.9892 -
val_loss: 2.2341 - val_sparse_categorical_accuracy: 0.6141

Epoch 27/300

97/97 [=====] - 7s 70ms/step - loss: 0.0210 - sparse_categorical_accuracy: 0.9933 -
val_loss: 1.9825 - val_sparse_categorical_accuracy: 0.6609

Epoch 28/300

97/97 [=====] - 7s 70ms/step - loss: 0.0137 - sparse_categorical_accuracy: 0.9960 -
val_loss: 5.7636 - val_sparse_categorical_accuracy: 0.4109

Epoch 29/300

97/97 [=====] - 7s 70ms/step - loss: 0.0127 - sparse_categorical_accuracy: 0.9955 -

val_loss: 3.0224 - val_sparse_categorical_accuracy: 0.5867
Epoch 30/300
97/97 [=====] - 7s 69ms/step - loss: 0.0312 - sparse_categorical_accuracy: 0.9891 -
val_loss: 3.5972 - val_sparse_categorical_accuracy: 0.5484
Epoch 31/300
97/97 [=====] - 7s 70ms/step - loss: 0.1176 - sparse_categorical_accuracy: 0.9600 -
val_loss: 3.1886 - val_sparse_categorical_accuracy: 0.5703
Epoch 32/300
97/97 [=====] - 7s 69ms/step - loss: 0.0534 - sparse_categorical_accuracy: 0.9814 -
val_loss: 3.1664 - val_sparse_categorical_accuracy: 0.5531
Epoch 33/300
97/97 [=====] - 7s 71ms/step - loss: 0.0411 - sparse_categorical_accuracy: 0.9860 -
val_loss: 2.5592 - val_sparse_categorical_accuracy: 0.5727
Epoch 34/300
97/97 [=====] - 7s 69ms/step - loss: 0.0248 - sparse_categorical_accuracy: 0.9912 -
val_loss: 2.1447 - val_sparse_categorical_accuracy: 0.6219
Epoch 35/300
97/97 [=====] - 7s 69ms/step - loss: 0.0214 - sparse_categorical_accuracy: 0.9927 -
val_loss: 2.6652 - val_sparse_categorical_accuracy: 0.5859
Epoch 36/300
97/97 [=====] - 7s 70ms/step - loss: 0.0222 - sparse_categorical_accuracy: 0.9924 -
val_loss: 4.0045 - val_sparse_categorical_accuracy: 0.5242
Epoch 37/300
97/97 [=====] - 7s 70ms/step - loss: 0.0274 - sparse_categorical_accuracy: 0.9911 -
val_loss: 3.2459 - val_sparse_categorical_accuracy: 0.5352
Epoch 38/300
97/97 [=====] - 7s 69ms/step - loss: 0.0585 - sparse_categorical_accuracy: 0.9816 -
val_loss: 2.8880 - val_sparse_categorical_accuracy: 0.5797
Epoch 39/300
97/97 [=====] - 7s 70ms/step - loss: 0.0714 - sparse_categorical_accuracy: 0.9780 -
val_loss: 2.4336 - val_sparse_categorical_accuracy: 0.6258
Epoch 40/300
97/97 [=====] - 7s 69ms/step - loss: 0.0340 - sparse_categorical_accuracy: 0.9876 -
val_loss: 2.4824 - val_sparse_categorical_accuracy: 0.5828
Epoch 41/300
97/97 [=====] - 7s 70ms/step - loss: 0.0195 - sparse_categorical_accuracy: 0.9929 -
val_loss: 2.0365 - val_sparse_categorical_accuracy: 0.6570
Epoch 42/300
97/97 [=====] - 7s 69ms/step - loss: 0.0056 - sparse_categorical_accuracy: 0.9983 -
val_loss: 1.7517 - val_sparse_categorical_accuracy: 0.7031
Epoch 43/300
97/97 [=====] - 7s 71ms/step - loss: 0.0035 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7630 - val_sparse_categorical_accuracy: 0.6961
Epoch 44/300

97/97 [=====] - 7s 69ms/step - loss: 0.0027 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.7077 - val_sparse_categorical_accuracy: 0.7141

Epoch 45/300

97/97 [=====] - 7s 70ms/step - loss: 0.0040 - sparse_categorical_accuracy: 0.9982 -
val_loss: 2.1021 - val_sparse_categorical_accuracy: 0.6742

Epoch 46/300

97/97 [=====] - 7s 70ms/step - loss: 0.0074 - sparse_categorical_accuracy: 0.9974 -
val_loss: 2.3255 - val_sparse_categorical_accuracy: 0.6594

Epoch 47/300

97/97 [=====] - 7s 70ms/step - loss: 0.0085 - sparse_categorical_accuracy: 0.9968 -
val_loss: 2.4922 - val_sparse_categorical_accuracy: 0.6375

Epoch 48/300

97/97 [=====] - 7s 71ms/step - loss: 0.0193 - sparse_categorical_accuracy: 0.9934 -
val_loss: 2.7081 - val_sparse_categorical_accuracy: 0.5938

Epoch 49/300

97/97 [=====] - 7s 69ms/step - loss: 0.1503 - sparse_categorical_accuracy: 0.9513 -
val_loss: 5.6580 - val_sparse_categorical_accuracy: 0.4016

Epoch 50/300

97/97 [=====] - 7s 70ms/step - loss: 0.0393 - sparse_categorical_accuracy: 0.9869 -
val_loss: 2.0063 - val_sparse_categorical_accuracy: 0.6562

Epoch 51/300

97/97 [=====] - 7s 70ms/step - loss: 0.0091 - sparse_categorical_accuracy: 0.9973 -
val_loss: 1.9809 - val_sparse_categorical_accuracy: 0.6609

Epoch 52/300

97/97 [=====] - 7s 70ms/step - loss: 0.0057 - sparse_categorical_accuracy: 0.9977 -
val_loss: 1.7519 - val_sparse_categorical_accuracy: 0.6672

Epoch 53/300

97/97 [=====] - 7s 71ms/step - loss: 0.0030 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7127 - val_sparse_categorical_accuracy: 0.6938

Epoch 54/300

97/97 [=====] - 7s 69ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.6755 - val_sparse_categorical_accuracy: 0.7000

Epoch 55/300

97/97 [=====] - 7s 69ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.7724 - val_sparse_categorical_accuracy: 0.6938

Epoch 56/300

97/97 [=====] - 7s 69ms/step - loss: 0.0025 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8183 - val_sparse_categorical_accuracy: 0.6953

Epoch 57/300

97/97 [=====] - 7s 69ms/step - loss: 0.0022 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7477 - val_sparse_categorical_accuracy: 0.6922

Epoch 58/300

97/97 [=====] - 7s 70ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7636 - val_sparse_categorical_accuracy: 0.6969

Epoch 59/300

97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7619 - val_sparse_categorical_accuracy: 0.7039

Epoch 60/300

97/97 [=====] - 7s 69ms/step - loss: 0.0026 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8275 - val_sparse_categorical_accuracy: 0.6992

Epoch 61/300

97/97 [=====] - 7s 70ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7956 - val_sparse_categorical_accuracy: 0.6969

Epoch 62/300

97/97 [=====] - 7s 70ms/step - loss: 0.0024 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7828 - val_sparse_categorical_accuracy: 0.7016

Epoch 63/300

97/97 [=====] - 7s 70ms/step - loss: 0.0021 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7792 - val_sparse_categorical_accuracy: 0.6984

Epoch 64/300

97/97 [=====] - 7s 69ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7606 - val_sparse_categorical_accuracy: 0.7023

Epoch 65/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7424 - val_sparse_categorical_accuracy: 0.6992

Epoch 66/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7636 - val_sparse_categorical_accuracy: 0.7023

Epoch 67/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7487 - val_sparse_categorical_accuracy: 0.7047

Epoch 68/300

97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7633 - val_sparse_categorical_accuracy: 0.7063

Epoch 69/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7518 - val_sparse_categorical_accuracy: 0.7047

Epoch 70/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9994 -
val_loss: 1.7631 - val_sparse_categorical_accuracy: 0.7016

Epoch 71/300

97/97 [=====] - 7s 69ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7663 - val_sparse_categorical_accuracy: 0.7016

Epoch 72/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7733 - val_sparse_categorical_accuracy: 0.7000

Epoch 73/300

97/97 [=====] - 7s 69ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9989 -

val_loss: 1.7750 - val_sparse_categorical_accuracy: 0.6977
Epoch 74/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9993 -
val_loss: 1.7681 - val_sparse_categorical_accuracy: 0.7023
Epoch 75/300
97/97 [=====] - 7s 69ms/step - loss: 0.0024 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7793 - val_sparse_categorical_accuracy: 0.7031
Epoch 76/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7812 - val_sparse_categorical_accuracy: 0.7039
Epoch 77/300
97/97 [=====] - 7s 72ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7651 - val_sparse_categorical_accuracy: 0.7031
Epoch 78/300
97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8012 - val_sparse_categorical_accuracy: 0.6961
Epoch 79/300
97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9984 -
val_loss: 1.7871 - val_sparse_categorical_accuracy: 0.7008
Epoch 80/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9991 -
val_loss: 1.7517 - val_sparse_categorical_accuracy: 0.6977
Epoch 81/300
97/97 [=====] - 7s 69ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7755 - val_sparse_categorical_accuracy: 0.6938
Epoch 82/300
97/97 [=====] - 7s 71ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8169 - val_sparse_categorical_accuracy: 0.6961
Epoch 83/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7833 - val_sparse_categorical_accuracy: 0.6992
Epoch 84/300
97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7843 - val_sparse_categorical_accuracy: 0.7016
Epoch 85/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7984 - val_sparse_categorical_accuracy: 0.6977
Epoch 86/300
97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7892 - val_sparse_categorical_accuracy: 0.7008
Epoch 87/300
97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.7648 - val_sparse_categorical_accuracy: 0.7000
Epoch 88/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8040 - val_sparse_categorical_accuracy: 0.7008
Epoch 89/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8368 - val_sparse_categorical_accuracy: 0.6953
Epoch 90/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8048 - val_sparse_categorical_accuracy: 0.6961
Epoch 91/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9992 -
val_loss: 1.8145 - val_sparse_categorical_accuracy: 0.7078
Epoch 92/300
97/97 [=====] - 7s 70ms/step - loss: 0.5363 - sparse_categorical_accuracy: 0.8369 -
val_loss: 11.4565 - val_sparse_categorical_accuracy: 0.1711
Epoch 93/300
97/97 [=====] - 7s 69ms/step - loss: 0.2342 - sparse_categorical_accuracy: 0.9209 -
val_loss: 2.5796 - val_sparse_categorical_accuracy: 0.5188
Epoch 94/300
97/97 [=====] - 7s 70ms/step - loss: 0.0540 - sparse_categorical_accuracy: 0.9839 -
val_loss: 1.7623 - val_sparse_categorical_accuracy: 0.6328
Epoch 95/300
97/97 [=====] - 7s 69ms/step - loss: 0.0177 - sparse_categorical_accuracy: 0.9942 -
val_loss: 1.8704 - val_sparse_categorical_accuracy: 0.6438
Epoch 96/300
97/97 [=====] - 7s 70ms/step - loss: 0.0240 - sparse_categorical_accuracy: 0.9925 -
val_loss: 1.9383 - val_sparse_categorical_accuracy: 0.6477
Epoch 97/300
97/97 [=====] - 7s 69ms/step - loss: 0.0074 - sparse_categorical_accuracy: 0.9972 -
val_loss: 1.9398 - val_sparse_categorical_accuracy: 0.6375
Epoch 98/300
97/97 [=====] - 7s 71ms/step - loss: 0.0034 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.6613 - val_sparse_categorical_accuracy: 0.6781
Epoch 99/300
97/97 [=====] - 7s 70ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.6723 - val_sparse_categorical_accuracy: 0.6922
Epoch 100/300
97/97 [=====] - 7s 69ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7408 - val_sparse_categorical_accuracy: 0.6875
Epoch 101/300
97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7142 - val_sparse_categorical_accuracy: 0.6945
Epoch 102/300
97/97 [=====] - 7s 69ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7009 - val_sparse_categorical_accuracy: 0.6969

Epoch 103/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7185 - val_sparse_categorical_accuracy: 0.6969

Epoch 104/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7238 - val_sparse_categorical_accuracy: 0.7000

Epoch 105/300

97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9991 -
val_loss: 1.7214 - val_sparse_categorical_accuracy: 0.7023

Epoch 106/300

97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7490 - val_sparse_categorical_accuracy: 0.7008

Epoch 107/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7378 - val_sparse_categorical_accuracy: 0.6984

Epoch 108/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7461 - val_sparse_categorical_accuracy: 0.6984

Epoch 109/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7316 - val_sparse_categorical_accuracy: 0.6984

Epoch 110/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9993 -
val_loss: 1.7497 - val_sparse_categorical_accuracy: 0.6992

Epoch 111/300

97/97 [=====] - 7s 70ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7586 - val_sparse_categorical_accuracy: 0.7023

Epoch 112/300

97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7660 - val_sparse_categorical_accuracy: 0.7008

Epoch 113/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7628 - val_sparse_categorical_accuracy: 0.7000

Epoch 114/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7552 - val_sparse_categorical_accuracy: 0.7055

Epoch 115/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7592 - val_sparse_categorical_accuracy: 0.7047

Epoch 116/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.7612 - val_sparse_categorical_accuracy: 0.7023

Epoch 117/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -

val_loss: 1.7888 - val_sparse_categorical_accuracy: 0.7000
Epoch 118/300
97/97 [=====] - 7s 71ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7605 - val_sparse_categorical_accuracy: 0.7055
Epoch 119/300
97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.8112 - val_sparse_categorical_accuracy: 0.6961
Epoch 120/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.7411 - val_sparse_categorical_accuracy: 0.6875
Epoch 121/300
97/97 [=====] - 7s 71ms/step - loss: 0.2445 - sparse_categorical_accuracy: 0.9260 -
val_loss: 6.2511 - val_sparse_categorical_accuracy: 0.4070
Epoch 122/300
97/97 [=====] - 7s 71ms/step - loss: 0.1479 - sparse_categorical_accuracy: 0.9498 -
val_loss: 2.2996 - val_sparse_categorical_accuracy: 0.5578
Epoch 123/300
97/97 [=====] - 7s 70ms/step - loss: 0.0327 - sparse_categorical_accuracy: 0.9882 -
val_loss: 1.8655 - val_sparse_categorical_accuracy: 0.6062
Epoch 124/300
97/97 [=====] - 7s 69ms/step - loss: 0.0121 - sparse_categorical_accuracy: 0.9963 -
val_loss: 2.3272 - val_sparse_categorical_accuracy: 0.5984
Epoch 125/300
97/97 [=====] - 7s 70ms/step - loss: 0.0053 - sparse_categorical_accuracy: 0.9979 -
val_loss: 1.5724 - val_sparse_categorical_accuracy: 0.6859
Epoch 126/300
97/97 [=====] - 7s 70ms/step - loss: 0.0022 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.5705 - val_sparse_categorical_accuracy: 0.6930
Epoch 127/300
97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.5934 - val_sparse_categorical_accuracy: 0.7008
Epoch 128/300
97/97 [=====] - 7s 70ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.6106 - val_sparse_categorical_accuracy: 0.7023
Epoch 129/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.6478 - val_sparse_categorical_accuracy: 0.6898
Epoch 130/300
97/97 [=====] - 7s 70ms/step - loss: 0.0032 - sparse_categorical_accuracy: 0.9982 -
val_loss: 1.8948 - val_sparse_categorical_accuracy: 0.6805
Epoch 131/300
97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9991 -
val_loss: 1.6845 - val_sparse_categorical_accuracy: 0.7031
Epoch 132/300

97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.6684 - val_sparse_categorical_accuracy: 0.7047
Epoch 133/300

97/97 [=====] - 7s 71ms/step - loss: 0.0046 - sparse_categorical_accuracy: 0.9976 -
val_loss: 2.9052 - val_sparse_categorical_accuracy: 0.5797
Epoch 134/300

97/97 [=====] - 7s 69ms/step - loss: 0.0400 - sparse_categorical_accuracy: 0.9871 -
val_loss: 8.0095 - val_sparse_categorical_accuracy: 0.3078
Epoch 135/300

97/97 [=====] - 7s 70ms/step - loss: 0.0976 - sparse_categorical_accuracy: 0.9688 -
val_loss: 2.3450 - val_sparse_categorical_accuracy: 0.6109
Epoch 136/300

97/97 [=====] - 7s 69ms/step - loss: 0.0227 - sparse_categorical_accuracy: 0.9924 -
val_loss: 1.9936 - val_sparse_categorical_accuracy: 0.6359
Epoch 137/300

97/97 [=====] - 7s 71ms/step - loss: 0.0189 - sparse_categorical_accuracy: 0.9929 -
val_loss: 2.3714 - val_sparse_categorical_accuracy: 0.6195
Epoch 138/300

97/97 [=====] - 7s 70ms/step - loss: 0.0104 - sparse_categorical_accuracy: 0.9959 -
val_loss: 1.9973 - val_sparse_categorical_accuracy: 0.6680
Epoch 139/300

97/97 [=====] - 7s 70ms/step - loss: 0.0045 - sparse_categorical_accuracy: 0.9979 -
val_loss: 1.9904 - val_sparse_categorical_accuracy: 0.6695
Epoch 140/300

97/97 [=====] - 7s 70ms/step - loss: 0.0021 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7675 - val_sparse_categorical_accuracy: 0.7008
Epoch 141/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.7502 - val_sparse_categorical_accuracy: 0.7055
Epoch 142/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.7945 - val_sparse_categorical_accuracy: 0.7047
Epoch 143/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9991 -
val_loss: 1.8244 - val_sparse_categorical_accuracy: 0.7000
Epoch 144/300

97/97 [=====] - 7s 70ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8442 - val_sparse_categorical_accuracy: 0.6938
Epoch 145/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8066 - val_sparse_categorical_accuracy: 0.7023
Epoch 146/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8311 - val_sparse_categorical_accuracy: 0.7047

Epoch 147/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.8346 - val_sparse_categorical_accuracy: 0.7031

Epoch 148/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8240 - val_sparse_categorical_accuracy: 0.7055

Epoch 149/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8149 - val_sparse_categorical_accuracy: 0.7070

Epoch 150/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8221 - val_sparse_categorical_accuracy: 0.7070

Epoch 151/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8307 - val_sparse_categorical_accuracy: 0.7078

Epoch 152/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.8546 - val_sparse_categorical_accuracy: 0.6992

Epoch 153/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8418 - val_sparse_categorical_accuracy: 0.7055

Epoch 154/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8762 - val_sparse_categorical_accuracy: 0.6977

Epoch 155/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8610 - val_sparse_categorical_accuracy: 0.7031

Epoch 156/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8545 - val_sparse_categorical_accuracy: 0.7031

Epoch 157/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8349 - val_sparse_categorical_accuracy: 0.7055

Epoch 158/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8931 - val_sparse_categorical_accuracy: 0.7008

Epoch 159/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8762 - val_sparse_categorical_accuracy: 0.6961

Epoch 160/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8507 - val_sparse_categorical_accuracy: 0.6984

Epoch 161/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -

val_loss: 1.8440 - val_sparse_categorical_accuracy: 0.7016
Epoch 162/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8524 - val_sparse_categorical_accuracy: 0.7008
Epoch 163/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.8519 - val_sparse_categorical_accuracy: 0.7000
Epoch 164/300
97/97 [=====] - 7s 71ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8619 - val_sparse_categorical_accuracy: 0.7016
Epoch 165/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8517 - val_sparse_categorical_accuracy: 0.7008
Epoch 166/300
97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8572 - val_sparse_categorical_accuracy: 0.7016
Epoch 167/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.8757 - val_sparse_categorical_accuracy: 0.7016
Epoch 168/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8700 - val_sparse_categorical_accuracy: 0.7039
Epoch 169/300
97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.8731 - val_sparse_categorical_accuracy: 0.7039
Epoch 170/300
97/97 [=====] - 7s 70ms/step - loss: 0.2022 - sparse_categorical_accuracy: 0.9410 -
val_loss: 5.8408 - val_sparse_categorical_accuracy: 0.3773
Epoch 171/300
97/97 [=====] - 7s 71ms/step - loss: 0.1060 - sparse_categorical_accuracy: 0.9658 -
val_loss: 3.0386 - val_sparse_categorical_accuracy: 0.4750
Epoch 172/300
97/97 [=====] - 7s 69ms/step - loss: 0.0173 - sparse_categorical_accuracy: 0.9946 -
val_loss: 1.7629 - val_sparse_categorical_accuracy: 0.6313
Epoch 173/300
97/97 [=====] - 7s 69ms/step - loss: 0.0044 - sparse_categorical_accuracy: 0.9981 -
val_loss: 1.5950 - val_sparse_categorical_accuracy: 0.6906
Epoch 174/300
97/97 [=====] - 7s 70ms/step - loss: 0.0024 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.6003 - val_sparse_categorical_accuracy: 0.6977
Epoch 175/300
97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.6260 - val_sparse_categorical_accuracy: 0.7023
Epoch 176/300

97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.6407 - val_sparse_categorical_accuracy: 0.7055
Epoch 177/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.6461 - val_sparse_categorical_accuracy: 0.7055
Epoch 178/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.6787 - val_sparse_categorical_accuracy: 0.6969
Epoch 179/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.6956 - val_sparse_categorical_accuracy: 0.7008
Epoch 180/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.6964 - val_sparse_categorical_accuracy: 0.7055
Epoch 181/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7316 - val_sparse_categorical_accuracy: 0.7047
Epoch 182/300

97/97 [=====] - 7s 70ms/step - loss: 0.0112 - sparse_categorical_accuracy: 0.9960 -
val_loss: 2.2458 - val_sparse_categorical_accuracy: 0.6547
Epoch 183/300

97/97 [=====] - 7s 69ms/step - loss: 0.0250 - sparse_categorical_accuracy: 0.9908 -
val_loss: 3.4318 - val_sparse_categorical_accuracy: 0.5508
Epoch 184/300

97/97 [=====] - 7s 69ms/step - loss: 0.0646 - sparse_categorical_accuracy: 0.9789 -
val_loss: 2.1790 - val_sparse_categorical_accuracy: 0.6359
Epoch 185/300

97/97 [=====] - 7s 70ms/step - loss: 0.0295 - sparse_categorical_accuracy: 0.9900 -
val_loss: 2.8526 - val_sparse_categorical_accuracy: 0.5656
Epoch 186/300

97/97 [=====] - 7s 70ms/step - loss: 0.0175 - sparse_categorical_accuracy: 0.9936 -
val_loss: 2.1491 - val_sparse_categorical_accuracy: 0.6484
Epoch 187/300

97/97 [=====] - 7s 70ms/step - loss: 0.0044 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.9730 - val_sparse_categorical_accuracy: 0.6734
Epoch 188/300

97/97 [=====] - 7s 70ms/step - loss: 0.0026 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.9528 - val_sparse_categorical_accuracy: 0.6789
Epoch 189/300

97/97 [=====] - 7s 70ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9895 - val_sparse_categorical_accuracy: 0.6820
Epoch 190/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9735 - val_sparse_categorical_accuracy: 0.6734

Epoch 191/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.9744 - val_sparse_categorical_accuracy: 0.6773

Epoch 192/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.9928 - val_sparse_categorical_accuracy: 0.6812

Epoch 193/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9972 - val_sparse_categorical_accuracy: 0.6766

Epoch 194/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.0055 - val_sparse_categorical_accuracy: 0.6805

Epoch 195/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0033 - val_sparse_categorical_accuracy: 0.6781

Epoch 196/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0084 - val_sparse_categorical_accuracy: 0.6734

Epoch 197/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.0106 - val_sparse_categorical_accuracy: 0.6773

Epoch 198/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.0239 - val_sparse_categorical_accuracy: 0.6773

Epoch 199/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 2.0206 - val_sparse_categorical_accuracy: 0.6781

Epoch 200/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 2.0252 - val_sparse_categorical_accuracy: 0.6773

Epoch 201/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0242 - val_sparse_categorical_accuracy: 0.6758

Epoch 202/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.0350 - val_sparse_categorical_accuracy: 0.6773

Epoch 203/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.0374 - val_sparse_categorical_accuracy: 0.6867

Epoch 204/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0410 - val_sparse_categorical_accuracy: 0.6844

Epoch 205/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -

val_loss: 2.0429 - val_sparse_categorical_accuracy: 0.6820
Epoch 206/300
97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0244 - val_sparse_categorical_accuracy: 0.6789
Epoch 207/300
97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0321 - val_sparse_categorical_accuracy: 0.6805
Epoch 208/300
97/97 [=====] - 7s 72ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.1532 - val_sparse_categorical_accuracy: 0.6844
Epoch 209/300
97/97 [=====] - 7s 69ms/step - loss: 0.0034 - sparse_categorical_accuracy: 0.9980 -
val_loss: 2.9891 - val_sparse_categorical_accuracy: 0.5961
Epoch 210/300
97/97 [=====] - 7s 70ms/step - loss: 0.1457 - sparse_categorical_accuracy: 0.9545 -
val_loss: 3.2866 - val_sparse_categorical_accuracy: 0.5430
Epoch 211/300
97/97 [=====] - 7s 70ms/step - loss: 0.0536 - sparse_categorical_accuracy: 0.9818 -
val_loss: 2.1756 - val_sparse_categorical_accuracy: 0.6430
Epoch 212/300
97/97 [=====] - 7s 71ms/step - loss: 0.0142 - sparse_categorical_accuracy: 0.9950 -
val_loss: 2.1328 - val_sparse_categorical_accuracy: 0.6422
Epoch 213/300
97/97 [=====] - 7s 70ms/step - loss: 0.0040 - sparse_categorical_accuracy: 0.9981 -
val_loss: 1.9835 - val_sparse_categorical_accuracy: 0.6609
Epoch 214/300
97/97 [=====] - 7s 70ms/step - loss: 0.0023 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.7907 - val_sparse_categorical_accuracy: 0.6961
Epoch 215/300
97/97 [=====] - 7s 71ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.7768 - val_sparse_categorical_accuracy: 0.6953
Epoch 216/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9986 -
val_loss: 1.7900 - val_sparse_categorical_accuracy: 0.6992
Epoch 217/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8266 - val_sparse_categorical_accuracy: 0.6984
Epoch 218/300
97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8185 - val_sparse_categorical_accuracy: 0.7008
Epoch 219/300
97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8399 - val_sparse_categorical_accuracy: 0.7000
Epoch 220/300

97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8553 - val_sparse_categorical_accuracy: 0.7016
Epoch 221/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8554 - val_sparse_categorical_accuracy: 0.7023
Epoch 222/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 1.8657 - val_sparse_categorical_accuracy: 0.7039
Epoch 223/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8768 - val_sparse_categorical_accuracy: 0.7055
Epoch 224/300

97/97 [=====] - 7s 69ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9992 -
val_loss: 1.8674 - val_sparse_categorical_accuracy: 0.7031
Epoch 225/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8930 - val_sparse_categorical_accuracy: 0.7047
Epoch 226/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.8966 - val_sparse_categorical_accuracy: 0.7047
Epoch 227/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8907 - val_sparse_categorical_accuracy: 0.6992
Epoch 228/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.9145 - val_sparse_categorical_accuracy: 0.7008
Epoch 229/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9215 - val_sparse_categorical_accuracy: 0.7070
Epoch 230/300

97/97 [=====] - 7s 69ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.0246 - val_sparse_categorical_accuracy: 0.6898
Epoch 231/300

97/97 [=====] - 7s 70ms/step - loss: 0.0022 - sparse_categorical_accuracy: 0.9986 -
val_loss: 2.0622 - val_sparse_categorical_accuracy: 0.6812
Epoch 232/300

97/97 [=====] - 7s 70ms/step - loss: 0.0020 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.2619 - val_sparse_categorical_accuracy: 0.6914
Epoch 233/300

97/97 [=====] - 7s 69ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.2829 - val_sparse_categorical_accuracy: 0.6766
Epoch 234/300

97/97 [=====] - 7s 70ms/step - loss: 0.0496 - sparse_categorical_accuracy: 0.9851 -
val_loss: 6.5782 - val_sparse_categorical_accuracy: 0.3680

Epoch 235/300

97/97 [=====] - 7s 69ms/step - loss: 0.0729 - sparse_categorical_accuracy: 0.9751 -
val_loss: 1.9641 - val_sparse_categorical_accuracy: 0.6414

Epoch 236/300

97/97 [=====] - 7s 69ms/step - loss: 0.0142 - sparse_categorical_accuracy: 0.9951 -
val_loss: 2.3301 - val_sparse_categorical_accuracy: 0.6445

Epoch 237/300

97/97 [=====] - 7s 71ms/step - loss: 0.0060 - sparse_categorical_accuracy: 0.9978 -
val_loss: 2.0697 - val_sparse_categorical_accuracy: 0.6703

Epoch 238/300

97/97 [=====] - 7s 70ms/step - loss: 0.0035 - sparse_categorical_accuracy: 0.9982 -
val_loss: 1.8807 - val_sparse_categorical_accuracy: 0.6906

Epoch 239/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8547 - val_sparse_categorical_accuracy: 0.6867

Epoch 240/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9985 -
val_loss: 1.8585 - val_sparse_categorical_accuracy: 0.6938

Epoch 241/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.8896 - val_sparse_categorical_accuracy: 0.6945

Epoch 242/300

97/97 [=====] - 7s 72ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8811 - val_sparse_categorical_accuracy: 0.6953

Epoch 243/300

97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.8902 - val_sparse_categorical_accuracy: 0.6969

Epoch 244/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.9031 - val_sparse_categorical_accuracy: 0.6977

Epoch 245/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9990 -
val_loss: 1.8989 - val_sparse_categorical_accuracy: 0.6977

Epoch 246/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9111 - val_sparse_categorical_accuracy: 0.6984

Epoch 247/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9394 - val_sparse_categorical_accuracy: 0.6961

Epoch 248/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.9449 - val_sparse_categorical_accuracy: 0.6930

Epoch 249/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -

val_loss: 1.9022 - val_sparse_categorical_accuracy: 0.6992
Epoch 250/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9218 - val_sparse_categorical_accuracy: 0.6969
Epoch 251/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 1.9286 - val_sparse_categorical_accuracy: 0.6984
Epoch 252/300
97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 1.9955 - val_sparse_categorical_accuracy: 0.6992
Epoch 253/300
97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0373 - val_sparse_categorical_accuracy: 0.6938
Epoch 254/300
97/97 [=====] - 7s 69ms/step - loss: 0.0166 - sparse_categorical_accuracy: 0.9942 -
val_loss: 5.6068 - val_sparse_categorical_accuracy: 0.4625
Epoch 255/300
97/97 [=====] - 7s 69ms/step - loss: 0.0793 - sparse_categorical_accuracy: 0.9744 -
val_loss: 4.3056 - val_sparse_categorical_accuracy: 0.5258
Epoch 256/300
97/97 [=====] - 7s 69ms/step - loss: 0.0251 - sparse_categorical_accuracy: 0.9907 -
val_loss: 3.9320 - val_sparse_categorical_accuracy: 0.5188
Epoch 257/300
97/97 [=====] - 7s 70ms/step - loss: 0.0097 - sparse_categorical_accuracy: 0.9965 -
val_loss: 3.8648 - val_sparse_categorical_accuracy: 0.5547
Epoch 258/300
97/97 [=====] - 7s 71ms/step - loss: 0.0048 - sparse_categorical_accuracy: 0.9981 -
val_loss: 2.3085 - val_sparse_categorical_accuracy: 0.6516
Epoch 259/300
97/97 [=====] - 7s 70ms/step - loss: 0.0029 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.4118 - val_sparse_categorical_accuracy: 0.6617
Epoch 260/300
97/97 [=====] - 7s 70ms/step - loss: 0.0018 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.1315 - val_sparse_categorical_accuracy: 0.6812
Epoch 261/300
97/97 [=====] - 7s 70ms/step - loss: 0.0017 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.0718 - val_sparse_categorical_accuracy: 0.6820
Epoch 262/300
97/97 [=====] - 7s 71ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.0706 - val_sparse_categorical_accuracy: 0.6875
Epoch 263/300
97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.0626 - val_sparse_categorical_accuracy: 0.6883
Epoch 264/300

97/97 [=====] - 7s 70ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9986 -
val_loss: 2.1719 - val_sparse_categorical_accuracy: 0.6687
Epoch 265/300

97/97 [=====] - 7s 69ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2174 - val_sparse_categorical_accuracy: 0.6727
Epoch 266/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.1913 - val_sparse_categorical_accuracy: 0.6797
Epoch 267/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9986 -
val_loss: 2.1937 - val_sparse_categorical_accuracy: 0.6820
Epoch 268/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.1870 - val_sparse_categorical_accuracy: 0.6844
Epoch 269/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.1723 - val_sparse_categorical_accuracy: 0.6828
Epoch 270/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.1937 - val_sparse_categorical_accuracy: 0.6789
Epoch 271/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.1955 - val_sparse_categorical_accuracy: 0.6805
Epoch 272/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9991 -
val_loss: 2.1882 - val_sparse_categorical_accuracy: 0.6773
Epoch 273/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.1907 - val_sparse_categorical_accuracy: 0.6805
Epoch 274/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9991 -
val_loss: 2.1860 - val_sparse_categorical_accuracy: 0.6828
Epoch 275/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9986 -
val_loss: 2.1840 - val_sparse_categorical_accuracy: 0.6797
Epoch 276/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.1992 - val_sparse_categorical_accuracy: 0.6773
Epoch 277/300

97/97 [=====] - 7s 70ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.2381 - val_sparse_categorical_accuracy: 0.6883
Epoch 278/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2853 - val_sparse_categorical_accuracy: 0.6875

Epoch 279/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.2175 - val_sparse_categorical_accuracy: 0.6906

Epoch 280/300

97/97 [=====] - 7s 69ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9990 -
val_loss: 2.1953 - val_sparse_categorical_accuracy: 0.6898

Epoch 281/300

97/97 [=====] - 7s 69ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.2061 - val_sparse_categorical_accuracy: 0.6898

Epoch 282/300

97/97 [=====] - 7s 70ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9990 -
val_loss: 2.2150 - val_sparse_categorical_accuracy: 0.6883

Epoch 283/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2239 - val_sparse_categorical_accuracy: 0.6867

Epoch 284/300

97/97 [=====] - 7s 70ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2331 - val_sparse_categorical_accuracy: 0.6883

Epoch 285/300

97/97 [=====] - 7s 69ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2463 - val_sparse_categorical_accuracy: 0.6898

Epoch 286/300

97/97 [=====] - 7s 70ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2379 - val_sparse_categorical_accuracy: 0.6891

Epoch 287/300

97/97 [=====] - 7s 69ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9992 -
val_loss: 2.2462 - val_sparse_categorical_accuracy: 0.6883

Epoch 288/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.2499 - val_sparse_categorical_accuracy: 0.6883

Epoch 289/300

97/97 [=====] - 7s 70ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9989 -
val_loss: 2.2527 - val_sparse_categorical_accuracy: 0.6891

Epoch 290/300

97/97 [=====] - 7s 70ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9985 -
val_loss: 2.2642 - val_sparse_categorical_accuracy: 0.6875

Epoch 291/300

97/97 [=====] - 7s 70ms/step - loss: 0.0016 - sparse_categorical_accuracy: 0.9988 -
val_loss: 2.2751 - val_sparse_categorical_accuracy: 0.6875

Epoch 292/300

97/97 [=====] - 7s 69ms/step - loss: 0.0014 - sparse_categorical_accuracy: 0.9987 -
val_loss: 2.2767 - val_sparse_categorical_accuracy: 0.6859

Epoch 293/300

97/97 [=====] - 7s 71ms/step - loss: 0.0015 - sparse_categorical_accuracy: 0.9986 -

val_loss: 2.1911 - val_sparse_categorical_accuracy: 0.6828

Epoch 294/300

97/97 [=====] - 7s 71ms/step - loss: 0.1172 - sparse_categorical_accuracy: 0.9662 - val_loss: 7.2600 - val_sparse_categorical_accuracy: 0.3922

Epoch 295/300

97/97 [=====] - 7s 69ms/step - loss: 0.0529 - sparse_categorical_accuracy: 0.9823 - val_loss: 2.0770 - val_sparse_categorical_accuracy: 0.6602

Epoch 296/300

97/97 [=====] - 7s 69ms/step - loss: 0.0084 - sparse_categorical_accuracy: 0.9969 - val_loss: 2.0846 - val_sparse_categorical_accuracy: 0.6375

Epoch 297/300

97/97 [=====] - 7s 70ms/step - loss: 0.0034 - sparse_categorical_accuracy: 0.9982 - val_loss: 1.7152 - val_sparse_categorical_accuracy: 0.6711

Epoch 298/300

97/97 [=====] - 7s 70ms/step - loss: 0.0021 - sparse_categorical_accuracy: 0.9987 - val_loss: 1.7178 - val_sparse_categorical_accuracy: 0.6812

Epoch 299/300

97/97 [=====] - 7s 69ms/step - loss: 0.0019 - sparse_categorical_accuracy: 0.9986 - val_loss: 1.8315 - val_sparse_categorical_accuracy: 0.6727

Epoch 300/300

97/97 [=====] - 7s 70ms/step - loss: 0.0028 - sparse_categorical_accuracy: 0.9985 - val_loss: 1.8339 - val_sparse_categorical_accuracy: 0.6703

Model: "shallow_res"

Layer (type)	Output Shape	Param #
=====		
conv2d_36 (Conv2D)	multiple	9472

batch_normalization_34 (Batch Normalization)	multiple	256

activation_34 (Activation)	multiple	0

max_pooling2d_15 (MaxPooling2D)	multiple	0

sequential (Sequential)	(None, 4, 4, 512)	11181184

global_average_pooling2d (Global Average Pooling2D)	multiple	0

dense_12 (Dense)	multiple	5130
=====		
Total params: 11,196,042		
Trainable params: 11,186,442		
Non-trainable params: 9,600		

Training and Validation Accuracy Training and Validation Loss

