

Epoch 1/40  
282/282 - 80s - loss: 1.8439 - accuracy: 0.3649 - val\_loss: 1.4972 -  
val\_accuracy: 0.4660 - lr: 1.0000e-04 - 80s/epoch - 282ms/step

Epoch 2/40  
282/282 - 77s - loss: 1.3566 - accuracy: 0.5152 - val\_loss: 1.3317 -  
val\_accuracy: 0.5310 - lr: 1.0000e-04 - 77s/epoch - 275ms/step

Epoch 3/40  
282/282 - 76s - loss: 1.1925 - accuracy: 0.5751 - val\_loss: 1.1974 -  
val\_accuracy: 0.5800 - lr: 1.0000e-04 - 76s/epoch - 268ms/step

Epoch 4/40  
282/282 - 76s - loss: 1.0688 - accuracy: 0.6185 - val\_loss: 1.0937 -  
val\_accuracy: 0.6120 - lr: 1.0000e-04 - 76s/epoch - 268ms/step

Epoch 5/40  
282/282 - 75s - loss: 0.9870 - accuracy: 0.6502 - val\_loss: 1.0616 -  
val\_accuracy: 0.6290 - lr: 1.0000e-04 - 75s/epoch - 268ms/step

Epoch 6/40  
282/282 - 76s - loss: 0.9172 - accuracy: 0.6773 - val\_loss: 1.0157 -  
val\_accuracy: 0.6490 - lr: 1.0000e-04 - 76s/epoch - 268ms/step

Epoch 7/40  
282/282 - 76s - loss: 0.8502 - accuracy: 0.7026 - val\_loss: 0.9550 -  
val\_accuracy: 0.6620 - lr: 1.0000e-04 - 76s/epoch - 268ms/step

Epoch 8/40  
282/282 - 75s - loss: 0.7907 - accuracy: 0.7310 - val\_loss: 0.9326 -  
val\_accuracy: 0.6790 - lr: 1.0000e-04 - 75s/epoch - 267ms/step

Epoch 9/40  
282/282 - 75s - loss: 0.7322 - accuracy: 0.7484 - val\_loss: 0.8915 -  
val\_accuracy: 0.6900 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 10/40  
282/282 - 75s - loss: 0.6927 - accuracy: 0.7614 - val\_loss: 0.8967 -  
val\_accuracy: 0.7030 - lr: 1.0000e-04 - 75s/epoch - 267ms/step

Epoch 11/40  
282/282 - 75s - loss: 0.6413 - accuracy: 0.7816 - val\_loss: 0.8585 -  
val\_accuracy: 0.7100 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 12/40  
282/282 - 75s - loss: 0.6051 - accuracy: 0.7977 - val\_loss: 0.8135 -  
val\_accuracy: 0.7290 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 13/40  
282/282 - 75s - loss: 0.5566 - accuracy: 0.8157 - val\_loss: 0.8008 -  
val\_accuracy: 0.7270 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 14/40  
282/282 - 75s - loss: 0.5286 - accuracy: 0.8249 - val\_loss: 0.8166 -  
val\_accuracy: 0.7320 - lr: 1.0000e-04 - 75s/epoch - 267ms/step

Epoch 15/40  
282/282 - 75s - loss: 0.4995 - accuracy: 0.8356 - val\_loss: 0.8036 -  
val\_accuracy: 0.7390 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 16/40

282/282 - 75s - loss: 0.4779 - accuracy: 0.8458 - val\_loss: 0.7759 -  
val\_accuracy: 0.7480 - lr: 1.0000e-04 - 75s/epoch - 267ms/step  
Epoch 17/40  
282/282 - 75s - loss: 0.4450 - accuracy: 0.8549 - val\_loss: 0.7541 -  
val\_accuracy: 0.7560 - lr: 1.0000e-04 - 75s/epoch - 267ms/step  
Epoch 18/40  
282/282 - 75s - loss: 0.4042 - accuracy: 0.8702 - val\_loss: 0.8750 -  
val\_accuracy: 0.7200 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 19/40  
282/282 - 75s - loss: 0.3963 - accuracy: 0.8747 - val\_loss: 0.7640 -  
val\_accuracy: 0.7460 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 20/40  
282/282 - 75s - loss: 0.3526 - accuracy: 0.8861 - val\_loss: 0.7761 -  
val\_accuracy: 0.7570 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 21/40  
282/282 - 75s - loss: 0.3462 - accuracy: 0.8912 - val\_loss: 0.8107 -  
val\_accuracy: 0.7530 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 22/40  
282/282 - 75s - loss: 0.3310 - accuracy: 0.8950 - val\_loss: 0.7508 -  
val\_accuracy: 0.7640 - lr: 1.0000e-04 - 75s/epoch - 267ms/step  
Epoch 23/40  
282/282 - 75s - loss: 0.2979 - accuracy: 0.9080 - val\_loss: 0.7990 -  
val\_accuracy: 0.7600 - lr: 1.0000e-04 - 75s/epoch - 267ms/step  
Epoch 24/40  
282/282 - 75s - loss: 0.3041 - accuracy: 0.9007 - val\_loss: 0.7907 -  
val\_accuracy: 0.7620 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 25/40  
282/282 - 75s - loss: 0.2948 - accuracy: 0.9044 - val\_loss: 0.7627 -  
val\_accuracy: 0.7750 - lr: 1.0000e-04 - 75s/epoch - 267ms/step  
Epoch 26/40  
282/282 - 76s - loss: 0.2550 - accuracy: 0.9195 - val\_loss: 0.7983 -  
val\_accuracy: 0.7570 - lr: 1.0000e-04 - 76s/epoch - 268ms/step  
Epoch 27/40  
282/282 - 75s - loss: 0.2269 - accuracy: 0.9307 - val\_loss: 0.7936 -  
val\_accuracy: 0.7690 - lr: 1.0000e-04 - 75s/epoch - 266ms/step  
Epoch 28/40  
282/282 - 74s - loss: 0.2345 - accuracy: 0.9279 - val\_loss: 0.8087 -  
val\_accuracy: 0.7690 - lr: 1.0000e-04 - 74s/epoch - 263ms/step  
Epoch 29/40  
282/282 - 75s - loss: 0.2125 - accuracy: 0.9351 - val\_loss: 0.7370 -  
val\_accuracy: 0.7890 - lr: 1.0000e-04 - 75s/epoch - 265ms/step  
Epoch 30/40  
282/282 - 75s - loss: 0.2043 - accuracy: 0.9366 - val\_loss: 0.7883 -  
val\_accuracy: 0.7790 - lr: 1.0000e-04 - 75s/epoch - 265ms/step  
Epoch 31/40  
282/282 - 75s - loss: 0.2186 - accuracy: 0.9344 - val\_loss: 0.8507 -  
val\_accuracy: 0.7560 - lr: 1.0000e-04 - 75s/epoch - 265ms/step

Epoch 32/40

282/282 - 75s - loss: 0.1789 - accuracy: 0.9478 - val\_loss: 0.8849 -  
val\_accuracy: 0.7620 - lr: 1.0000e-04 - 75s/epoch - 265ms/step

Epoch 33/40

282/282 - 75s - loss: 0.1809 - accuracy: 0.9470 - val\_loss: 0.8615 -  
val\_accuracy: 0.7660 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 34/40

282/282 - 75s - loss: 0.1679 - accuracy: 0.9523 - val\_loss: 0.8082 -  
val\_accuracy: 0.7720 - lr: 1.0000e-04 - 75s/epoch - 266ms/step

Epoch 35/40

282/282 - 75s - loss: 0.1209 - accuracy: 0.9697 - val\_loss: 0.7562 -  
val\_accuracy: 0.7850 - lr: 5.0000e-06 - 75s/epoch - 267ms/step

Epoch 36/40

282/282 - 75s - loss: 0.1042 - accuracy: 0.9752 - val\_loss: 0.7624 -  
val\_accuracy: 0.7840 - lr: 5.0000e-06 - 75s/epoch - 265ms/step

Epoch 37/40

282/282 - 75s - loss: 0.0987 - accuracy: 0.9764 - val\_loss: 0.7613 -  
val\_accuracy: 0.7860 - lr: 5.0000e-06 - 75s/epoch - 267ms/step

Epoch 38/40

282/282 - 75s - loss: 0.0955 - accuracy: 0.9777 - val\_loss: 0.7572 -  
val\_accuracy: 0.7860 - lr: 5.0000e-06 - 75s/epoch - 266ms/step

Epoch 39/40

282/282 - 75s - loss: 0.0929 - accuracy: 0.9788 - val\_loss: 0.7632 -  
val\_accuracy: 0.7900 - lr: 5.0000e-06 - 75s/epoch - 267ms/step

Epoch 40/40

282/282 - 75s - loss: 0.0906 - accuracy: 0.9787 - val\_loss: 0.7575 -  
val\_accuracy: 0.7910 - lr: 5.0000e-06 - 75s/epoch - 266ms/step