Epoch 1/500

62/62 [==============================] - 8s 103ms/step - loss: 1.3572 - categorical\_accuracy: 0.4859 - val\_loss: 1.2759 - val\_categorical\_accuracy: 0.5417 - lr: 1.0000e-05

Epoch 2/500

62/62 [==============================] - 6s 102ms/step - loss: 1.3110 - categorical\_accuracy: 0.5212 - val\_loss: 1.2217 - val\_categorical\_accuracy: 0.5938 - lr: 1.0000e-05

Epoch 3/500

62/62 [==============================] - 6s 100ms/step - loss: 1.2549 - categorical\_accuracy: 0.5302 - val\_loss: 1.1724 - val\_categorical\_accuracy: 0.6250 - lr: 1.0000e-05

Epoch 4/500

62/62 [==============================] - 6s 102ms/step - loss: 1.2066 - categorical\_accuracy: 0.5635 - val\_loss: 1.1224 - val\_categorical\_accuracy: 0.6250 - lr: 1.0000e-05

Epoch 5/500

62/62 [==============================] - 6s 101ms/step - loss: 1.1457 - categorical\_accuracy: 0.5806 - val\_loss: 1.0901 - val\_categorical\_accuracy: 0.5417 - lr: 1.0000e-05

Epoch 6/500

62/62 [==============================] - 6s 103ms/step - loss: 1.0950 - categorical\_accuracy: 0.5907 - val\_loss: 1.0601 - val\_categorical\_accuracy: 0.6250 - lr: 1.0000e-05

Epoch 7/500

62/62 [==============================] - 6s 98ms/step - loss: 1.0511 - categorical\_accuracy: 0.6119 - val\_loss: 1.0325 - val\_categorical\_accuracy: 0.6042 - lr: 1.0000e-05

Epoch 8/500

62/62 [==============================] - 6s 99ms/step - loss: 0.9991 - categorical\_accuracy: 0.6492 - val\_loss: 1.0213 - val\_categorical\_accuracy: 0.6250 - lr: 1.0000e-05

Epoch 9/500

62/62 [==============================] - 6s 102ms/step - loss: 0.9425 - categorical\_accuracy: 0.6663 - val\_loss: 0.9916 - val\_categorical\_accuracy: 0.5938 - lr: 1.0000e-05

Epoch 10/500

61/62 [============================>.] - ETA: 0s - loss: 0.8895 - categorical\_accuracy: 0.6844WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0010.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0010.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 131ms/step - loss: 0.8879 - categorical\_accuracy: 0.6845 - val\_loss: 0.9618 - val\_categorical\_accuracy: 0.5938 - lr: 1.0000e-05

Epoch 11/500

62/62 [==============================] - 6s 97ms/step - loss: 0.8533 - categorical\_accuracy: 0.7097 - val\_loss: 0.9155 - val\_categorical\_accuracy: 0.6354 - lr: 1.0000e-05

Epoch 12/500

62/62 [==============================] - 6s 99ms/step - loss: 0.8079 - categorical\_accuracy: 0.7147 - val\_loss: 0.8776 - val\_categorical\_accuracy: 0.6667 - lr: 1.0000e-05

Epoch 13/500

62/62 [==============================] - 6s 100ms/step - loss: 0.7777 - categorical\_accuracy: 0.7238 - val\_loss: 0.8599 - val\_categorical\_accuracy: 0.6667 - lr: 1.0000e-05

Epoch 14/500

62/62 [==============================] - 6s 99ms/step - loss: 0.7165 - categorical\_accuracy: 0.7480 - val\_loss: 0.8331 - val\_categorical\_accuracy: 0.6979 - lr: 1.0000e-05

Epoch 15/500

62/62 [==============================] - 6s 100ms/step - loss: 0.6659 - categorical\_accuracy: 0.7742 - val\_loss: 0.7916 - val\_categorical\_accuracy: 0.6667 - lr: 1.0000e-05

Epoch 16/500

62/62 [==============================] - 6s 98ms/step - loss: 0.6227 - categorical\_accuracy: 0.7994 - val\_loss: 0.7909 - val\_categorical\_accuracy: 0.6771 - lr: 1.0000e-05

Epoch 17/500

62/62 [==============================] - 6s 101ms/step - loss: 0.5918 - categorical\_accuracy: 0.8054 - val\_loss: 0.7548 - val\_categorical\_accuracy: 0.6771 - lr: 1.0000e-05

Epoch 18/500

62/62 [==============================] - 6s 102ms/step - loss: 0.5591 - categorical\_accuracy: 0.8165 - val\_loss: 0.7415 - val\_categorical\_accuracy: 0.7188 - lr: 1.0000e-05

Epoch 19/500

62/62 [==============================] - 6s 103ms/step - loss: 0.5214 - categorical\_accuracy: 0.8236 - val\_loss: 0.7292 - val\_categorical\_accuracy: 0.6979 - lr: 1.0000e-05

Epoch 20/500

61/62 [============================>.] - ETA: 0s - loss: 0.4762 - categorical\_accuracy: 0.8504WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0020.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0020.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 121ms/step - loss: 0.4745 - categorical\_accuracy: 0.8508 - val\_loss: 0.6802 - val\_categorical\_accuracy: 0.7188 - lr: 1.0000e-05

Epoch 21/500

62/62 [==============================] - 6s 95ms/step - loss: 0.4741 - categorical\_accuracy: 0.8558 - val\_loss: 0.7016 - val\_categorical\_accuracy: 0.7292 - lr: 1.0000e-05

Epoch 22/500

62/62 [==============================] - 6s 104ms/step - loss: 0.4243 - categorical\_accuracy: 0.8669 - val\_loss: 0.6852 - val\_categorical\_accuracy: 0.7083 - lr: 1.0000e-05

Epoch 23/500

62/62 [==============================] - 6s 100ms/step - loss: 0.3914 - categorical\_accuracy: 0.8730 - val\_loss: 0.6637 - val\_categorical\_accuracy: 0.7083 - lr: 1.0000e-05

Epoch 24/500

62/62 [==============================] - 6s 95ms/step - loss: 0.3756 - categorical\_accuracy: 0.8770 - val\_loss: 0.7038 - val\_categorical\_accuracy: 0.7708 - lr: 1.0000e-05

Epoch 25/500

62/62 [==============================] - 6s 94ms/step - loss: 0.3582 - categorical\_accuracy: 0.9032 - val\_loss: 0.6133 - val\_categorical\_accuracy: 0.7500 - lr: 1.0000e-05

Epoch 26/500

62/62 [==============================] - 6s 98ms/step - loss: 0.3547 - categorical\_accuracy: 0.8841 - val\_loss: 0.6137 - val\_categorical\_accuracy: 0.7708 - lr: 1.0000e-05

Epoch 27/500

62/62 [==============================] - 6s 95ms/step - loss: 0.3211 - categorical\_accuracy: 0.8972 - val\_loss: 0.5770 - val\_categorical\_accuracy: 0.7812 - lr: 1.0000e-05

Epoch 28/500

62/62 [==============================] - 6s 98ms/step - loss: 0.3080 - categorical\_accuracy: 0.8891 - val\_loss: 0.6173 - val\_categorical\_accuracy: 0.7708 - lr: 1.0000e-05

Epoch 29/500

62/62 [==============================] - 6s 97ms/step - loss: 0.2803 - categorical\_accuracy: 0.9083 - val\_loss: 0.5864 - val\_categorical\_accuracy: 0.7708 - lr: 1.0000e-05

Epoch 30/500

61/62 [============================>.] - ETA: 0s - loss: 0.2499 - categorical\_accuracy: 0.9180WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0030.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0030.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 119ms/step - loss: 0.2491 - categorical\_accuracy: 0.9183 - val\_loss: 0.5971 - val\_categorical\_accuracy: 0.7917 - lr: 1.0000e-05

Epoch 31/500

62/62 [==============================] - 6s 99ms/step - loss: 0.2340 - categorical\_accuracy: 0.9254 - val\_loss: 0.5915 - val\_categorical\_accuracy: 0.8021 - lr: 1.0000e-05

Epoch 32/500

62/62 [==============================] - 6s 102ms/step - loss: 0.2467 - categorical\_accuracy: 0.9163 - val\_loss: 0.5207 - val\_categorical\_accuracy: 0.8021 - lr: 1.0000e-05

Epoch 33/500

62/62 [==============================] - 6s 97ms/step - loss: 0.2448 - categorical\_accuracy: 0.9214 - val\_loss: 0.6033 - val\_categorical\_accuracy: 0.7812 - lr: 1.0000e-05

Epoch 34/500

62/62 [==============================] - 6s 97ms/step - loss: 0.2059 - categorical\_accuracy: 0.9294 - val\_loss: 0.5088 - val\_categorical\_accuracy: 0.8021 - lr: 1.0000e-05

Epoch 35/500

62/62 [==============================] - 6s 99ms/step - loss: 0.2068 - categorical\_accuracy: 0.9425 - val\_loss: 0.5874 - val\_categorical\_accuracy: 0.7917 - lr: 1.0000e-05

Epoch 36/500

62/62 [==============================] - 6s 97ms/step - loss: 0.1947 - categorical\_accuracy: 0.9435 - val\_loss: 0.5401 - val\_categorical\_accuracy: 0.7812 - lr: 1.0000e-05

Epoch 37/500

62/62 [==============================] - 6s 98ms/step - loss: 0.1747 - categorical\_accuracy: 0.9506 - val\_loss: 0.6751 - val\_categorical\_accuracy: 0.8229 - lr: 1.0000e-05

Epoch 38/500

62/62 [==============================] - 6s 101ms/step - loss: 0.1547 - categorical\_accuracy: 0.9536 - val\_loss: 0.5588 - val\_categorical\_accuracy: 0.8333 - lr: 1.0000e-05

Epoch 39/500

62/62 [==============================] - 6s 97ms/step - loss: 0.1789 - categorical\_accuracy: 0.9466 - val\_loss: 0.5043 - val\_categorical\_accuracy: 0.8438 - lr: 1.0000e-05

Epoch 40/500

61/62 [============================>.] - ETA: 0s - loss: 0.1443 - categorical\_accuracy: 0.9611WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0040.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0040.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.1430 - categorical\_accuracy: 0.9617 - val\_loss: 0.5639 - val\_categorical\_accuracy: 0.8438 - lr: 1.0000e-05

Epoch 41/500

62/62 [==============================] - 6s 97ms/step - loss: 0.1819 - categorical\_accuracy: 0.9466 - val\_loss: 0.4800 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-05

Epoch 42/500

62/62 [==============================] - 6s 99ms/step - loss: 0.1563 - categorical\_accuracy: 0.9526 - val\_loss: 0.5418 - val\_categorical\_accuracy: 0.8021 - lr: 1.0000e-05

Epoch 43/500

62/62 [==============================] - 6s 98ms/step - loss: 0.1389 - categorical\_accuracy: 0.9526 - val\_loss: 0.5004 - val\_categorical\_accuracy: 0.8333 - lr: 1.0000e-05

Epoch 44/500

62/62 [==============================] - 6s 96ms/step - loss: 0.1544 - categorical\_accuracy: 0.9486 - val\_loss: 0.5362 - val\_categorical\_accuracy: 0.8333 - lr: 1.0000e-05

Epoch 45/500

62/62 [==============================] - 6s 97ms/step - loss: 0.1320 - categorical\_accuracy: 0.9627 - val\_loss: 0.4097 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-05

Epoch 46/500

62/62 [==============================] - 6s 98ms/step - loss: 0.1296 - categorical\_accuracy: 0.9607 - val\_loss: 0.5286 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-05

Epoch 47/500

62/62 [==============================] - 6s 100ms/step - loss: 0.1183 - categorical\_accuracy: 0.9597 - val\_loss: 0.5032 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-05

Epoch 48/500

62/62 [==============================] - 6s 97ms/step - loss: 0.1122 - categorical\_accuracy: 0.9677 - val\_loss: 0.4426 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-05

Epoch 49/500

62/62 [==============================] - 6s 101ms/step - loss: 0.1064 - categorical\_accuracy: 0.9698 - val\_loss: 0.4608 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-05

Epoch 50/500

61/62 [============================>.] - ETA: 0s - loss: 0.0997 - categorical\_accuracy: 0.9662WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0050.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0050.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 118ms/step - loss: 0.0992 - categorical\_accuracy: 0.9667 - val\_loss: 0.5831 - val\_categorical\_accuracy: 0.8438 - lr: 1.0000e-05

Epoch 51/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0885 - categorical\_accuracy: 0.9788 - val\_loss: 0.6105 - val\_categorical\_accuracy: 0.8125 - lr: 1.0000e-05

Epoch 52/500

62/62 [==============================] - 6s 101ms/step - loss: 0.1237 - categorical\_accuracy: 0.9627 - val\_loss: 0.4333 - val\_categorical\_accuracy: 0.8438 - lr: 1.0000e-05

Epoch 53/500

62/62 [==============================] - 6s 98ms/step - loss: 0.1280 - categorical\_accuracy: 0.9617 - val\_loss: 0.5753 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-05

Epoch 54/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0971 - categorical\_accuracy: 0.9718 - val\_loss: 0.5710 - val\_categorical\_accuracy: 0.8333 - lr: 1.0000e-05

Epoch 55/500

62/62 [==============================] - ETA: 0s - loss: 0.0831 - categorical\_accuracy: 0.9768

Epoch 00055: ReduceLROnPlateau reducing learning rate to 9.999999747378752e-07.

62/62 [==============================] - 6s 100ms/step - loss: 0.0831 - categorical\_accuracy: 0.9768 - val\_loss: 0.6483 - val\_categorical\_accuracy: 0.8333 - lr: 1.0000e-05

Epoch 56/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0935 - categorical\_accuracy: 0.9728 - val\_loss: 0.4600 - val\_categorical\_accuracy: 0.8438 - lr: 1.0000e-06

Epoch 57/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0743 - categorical\_accuracy: 0.9819 - val\_loss: 0.4344 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-06

Epoch 58/500

62/62 [==============================] - 6s 94ms/step - loss: 0.0679 - categorical\_accuracy: 0.9839 - val\_loss: 0.4330 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-06

Epoch 59/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0770 - categorical\_accuracy: 0.9819 - val\_loss: 0.4300 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-06

Epoch 60/500

61/62 [============================>.] - ETA: 0s - loss: 0.0696 - categorical\_accuracy: 0.9805WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0060.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0060.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0688 - categorical\_accuracy: 0.9808 - val\_loss: 0.4470 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-06

Epoch 61/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0592 - categorical\_accuracy: 0.9849 - val\_loss: 0.4457 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-06

Epoch 62/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0640 - categorical\_accuracy: 0.9859 - val\_loss: 0.4445 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-06

Epoch 63/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0518 - categorical\_accuracy: 0.9929 - val\_loss: 0.4537 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-06

Epoch 64/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0554 - categorical\_accuracy: 0.9899 - val\_loss: 0.4546 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-06

Epoch 65/500

62/62 [==============================] - ETA: 0s - loss: 0.0642 - categorical\_accuracy: 0.9859

Epoch 00065: ReduceLROnPlateau reducing learning rate to 9.999999974752428e-08.

62/62 [==============================] - 6s 100ms/step - loss: 0.0642 - categorical\_accuracy: 0.9859 - val\_loss: 0.4619 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-06

Epoch 66/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0592 - categorical\_accuracy: 0.9849 - val\_loss: 0.4616 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-07

Epoch 67/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0565 - categorical\_accuracy: 0.9859 - val\_loss: 0.4605 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-07

Epoch 68/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0601 - categorical\_accuracy: 0.9869 - val\_loss: 0.4612 - val\_categorical\_accuracy: 0.8750 - lr: 1.0000e-07

Epoch 69/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0634 - categorical\_accuracy: 0.9839 - val\_loss: 0.4634 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 70/500

61/62 [============================>.] - ETA: 0s - loss: 0.0603 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0070.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0070.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 119ms/step - loss: 0.0602 - categorical\_accuracy: 0.9859 - val\_loss: 0.4630 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 71/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0661 - categorical\_accuracy: 0.9869 - val\_loss: 0.4640 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 72/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0600 - categorical\_accuracy: 0.9849 - val\_loss: 0.4678 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 73/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0670 - categorical\_accuracy: 0.9839 - val\_loss: 0.4716 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 74/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0645 - categorical\_accuracy: 0.9849 - val\_loss: 0.4720 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-07

Epoch 75/500

62/62 [==============================] - ETA: 0s - loss: 0.0562 - categorical\_accuracy: 0.9879

Epoch 00075: ReduceLROnPlateau reducing learning rate to 1.0000000116860975e-08.

62/62 [==============================] - 6s 98ms/step - loss: 0.0562 - categorical\_accuracy: 0.9879 - val\_loss: 0.4704 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-07

Epoch 76/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0642 - categorical\_accuracy: 0.9808 - val\_loss: 0.4701 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 77/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0517 - categorical\_accuracy: 0.9889 - val\_loss: 0.4700 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 78/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0627 - categorical\_accuracy: 0.9849 - val\_loss: 0.4704 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 79/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0723 - categorical\_accuracy: 0.9819 - val\_loss: 0.4703 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-08

Epoch 80/500

61/62 [============================>.] - ETA: 0s - loss: 0.0528 - categorical\_accuracy: 0.9908WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0080.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0080.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0521 - categorical\_accuracy: 0.9909 - val\_loss: 0.4703 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-08

Epoch 81/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0554 - categorical\_accuracy: 0.9919 - val\_loss: 0.4710 - val\_categorical\_accuracy: 0.8542 - lr: 1.0000e-08

Epoch 82/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0673 - categorical\_accuracy: 0.9859 - val\_loss: 0.4709 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 83/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0623 - categorical\_accuracy: 0.9819 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 84/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0544 - categorical\_accuracy: 0.9889 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 85/500

62/62 [==============================] - ETA: 0s - loss: 0.0566 - categorical\_accuracy: 0.9869

Epoch 00085: ReduceLROnPlateau reducing learning rate to 9.999999939225292e-10.

62/62 [==============================] - 6s 95ms/step - loss: 0.0566 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-08

Epoch 86/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0550 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 87/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0545 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 88/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0617 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 89/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0586 - categorical\_accuracy: 0.9859 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 90/500

61/62 [============================>.] - ETA: 0s - loss: 0.0668 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0090.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0090.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0677 - categorical\_accuracy: 0.9859 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 91/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0694 - categorical\_accuracy: 0.9798 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 92/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0657 - categorical\_accuracy: 0.9869 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 93/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0529 - categorical\_accuracy: 0.9889 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 94/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0566 - categorical\_accuracy: 0.9849 - val\_loss: 0.4706 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 95/500

62/62 [==============================] - ETA: 0s - loss: 0.0525 - categorical\_accuracy: 0.9869

Epoch 00095: ReduceLROnPlateau reducing learning rate to 9.999999717180686e-11.

62/62 [==============================] - 6s 94ms/step - loss: 0.0525 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-09

Epoch 96/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0593 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 97/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0587 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 98/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0660 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 99/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0640 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 100/500

61/62 [============================>.] - ETA: 0s - loss: 0.0593 - categorical\_accuracy: 0.9836WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0100.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0100.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 122ms/step - loss: 0.0588 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 101/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0589 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 102/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0544 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 103/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0575 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 104/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0481 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 105/500

62/62 [==============================] - ETA: 0s - loss: 0.0572 - categorical\_accuracy: 0.9849

Epoch 00105: ReduceLROnPlateau reducing learning rate to 9.99999943962493e-12.

62/62 [==============================] - 6s 98ms/step - loss: 0.0572 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-10

Epoch 106/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0606 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 107/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0578 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 108/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0688 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 109/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0640 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 110/500

61/62 [============================>.] - ETA: 0s - loss: 0.0586 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0110.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0110.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0611 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 111/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0615 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 112/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0652 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 113/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0501 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 114/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0587 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 115/500

62/62 [==============================] - ETA: 0s - loss: 0.0604 - categorical\_accuracy: 0.9889

Epoch 00115: ReduceLROnPlateau reducing learning rate to 9.999999092680235e-13.

62/62 [==============================] - 6s 97ms/step - loss: 0.0604 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-11

Epoch 116/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0568 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 117/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0627 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 118/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0578 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 119/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0569 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 120/500

61/62 [============================>.] - ETA: 0s - loss: 0.0566 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0120.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0120.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 124ms/step - loss: 0.0561 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 121/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0644 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 122/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0588 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 123/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0581 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 124/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0642 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 125/500

62/62 [==============================] - ETA: 0s - loss: 0.0676 - categorical\_accuracy: 0.9839

Epoch 00125: ReduceLROnPlateau reducing learning rate to 9.9999988758398e-14.

62/62 [==============================] - 6s 102ms/step - loss: 0.0676 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-12

Epoch 126/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0514 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 127/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0552 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 128/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0710 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 129/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0621 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 130/500

61/62 [============================>.] - ETA: 0s - loss: 0.0690 - categorical\_accuracy: 0.9805WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0130.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0130.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 120ms/step - loss: 0.0684 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 131/500

62/62 [==============================] - 7s 109ms/step - loss: 0.0628 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 132/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0631 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 133/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0627 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 134/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0600 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 135/500

62/62 [==============================] - ETA: 0s - loss: 0.0597 - categorical\_accuracy: 0.9839

Epoch 00135: ReduceLROnPlateau reducing learning rate to 9.999999146890344e-15.

62/62 [==============================] - 6s 101ms/step - loss: 0.0597 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-13

Epoch 136/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0564 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 137/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0651 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 138/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0592 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 139/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0566 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 140/500

61/62 [============================>.] - ETA: 0s - loss: 0.0683 - categorical\_accuracy: 0.9805WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0140.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0140.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 121ms/step - loss: 0.0676 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 141/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0571 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 142/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0535 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 143/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0594 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 144/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0726 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 145/500

62/62 [==============================] - ETA: 0s - loss: 0.0613 - categorical\_accuracy: 0.9889

Epoch 00145: ReduceLROnPlateau reducing learning rate to 9.999998977483753e-16.

62/62 [==============================] - 6s 99ms/step - loss: 0.0613 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-14

Epoch 146/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0624 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 147/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0548 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 148/500

62/62 [==============================] - 6s 93ms/step - loss: 0.0683 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 149/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0625 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 150/500

61/62 [============================>.] - ETA: 0s - loss: 0.0516 - categorical\_accuracy: 0.9898WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0150.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0150.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 122ms/step - loss: 0.0514 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 151/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0568 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 152/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0566 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 153/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0558 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 154/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0525 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 155/500

62/62 [==============================] - ETA: 0s - loss: 0.0592 - categorical\_accuracy: 0.9889

Epoch 00155: ReduceLROnPlateau reducing learning rate to 9.999998977483754e-17.

62/62 [==============================] - 6s 99ms/step - loss: 0.0592 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-15

Epoch 156/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0561 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 157/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0534 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 158/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0669 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 159/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0543 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 160/500

61/62 [============================>.] - ETA: 0s - loss: 0.0519 - categorical\_accuracy: 0.9908WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0160.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0160.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 119ms/step - loss: 0.0519 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 161/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0524 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 162/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0584 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 163/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0762 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 164/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0663 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 165/500

62/62 [==============================] - ETA: 0s - loss: 0.0616 - categorical\_accuracy: 0.9839

Epoch 00165: ReduceLROnPlateau reducing learning rate to 9.999998845134856e-18.

62/62 [==============================] - 6s 100ms/step - loss: 0.0616 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-16

Epoch 166/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0564 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 167/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0585 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 168/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0594 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 169/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0605 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 170/500

61/62 [============================>.] - ETA: 0s - loss: 0.0653 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0170.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0170.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0649 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 171/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0567 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 172/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0544 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 173/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0635 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 174/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0618 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 175/500

62/62 [==============================] - ETA: 0s - loss: 0.0547 - categorical\_accuracy: 0.9889

Epoch 00175: ReduceLROnPlateau reducing learning rate to 9.999999010570977e-19.

62/62 [==============================] - 6s 94ms/step - loss: 0.0547 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-17

Epoch 176/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0588 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 177/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0628 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 178/500

62/62 [==============================] - 6s 94ms/step - loss: 0.0555 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 179/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0600 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 180/500

61/62 [============================>.] - ETA: 0s - loss: 0.0609 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0180.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0180.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 119ms/step - loss: 0.0607 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 181/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0726 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 182/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0647 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 183/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0523 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 184/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0566 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 185/500

62/62 [==============================] - ETA: 0s - loss: 0.0656 - categorical\_accuracy: 0.9819

Epoch 00185: ReduceLROnPlateau reducing learning rate to 9.999999424161285e-20.

62/62 [==============================] - 6s 100ms/step - loss: 0.0656 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-18

Epoch 186/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0585 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 187/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0610 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 188/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0661 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 189/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0503 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 190/500

61/62 [============================>.] - ETA: 0s - loss: 0.0593 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0190.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0190.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0587 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 191/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0638 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 192/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0517 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 193/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0504 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 194/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0692 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 195/500

62/62 [==============================] - ETA: 0s - loss: 0.0658 - categorical\_accuracy: 0.9859

Epoch 00195: ReduceLROnPlateau reducing learning rate to 9.999999682655225e-21.

62/62 [==============================] - 6s 99ms/step - loss: 0.0658 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-19

Epoch 196/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0652 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 197/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0634 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 198/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0637 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 199/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0696 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 200/500

61/62 [============================>.] - ETA: 0s - loss: 0.0559 - categorical\_accuracy: 0.9867WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0200.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0200.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 130ms/step - loss: 0.0586 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 201/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0642 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 202/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0503 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 203/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0623 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 204/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0612 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 205/500

62/62 [==============================] - ETA: 0s - loss: 0.0618 - categorical\_accuracy: 0.9899

Epoch 00205: ReduceLROnPlateau reducing learning rate to 9.999999682655225e-22.

62/62 [==============================] - 6s 96ms/step - loss: 0.0618 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-20

Epoch 206/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0547 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 207/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0613 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 208/500

62/62 [==============================] - 6s 93ms/step - loss: 0.0643 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 209/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0582 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 210/500

61/62 [============================>.] - ETA: 0s - loss: 0.0574 - categorical\_accuracy: 0.9877WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0210.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0210.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 121ms/step - loss: 0.0569 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 211/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0613 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 212/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0508 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 213/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0559 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 214/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0613 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 215/500

62/62 [==============================] - ETA: 0s - loss: 0.0662 - categorical\_accuracy: 0.9839

Epoch 00215: ReduceLROnPlateau reducing learning rate to 9.999999682655225e-23.

62/62 [==============================] - 6s 99ms/step - loss: 0.0662 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-21

Epoch 216/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0592 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 217/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0616 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 218/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0592 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 219/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0616 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 220/500

61/62 [============================>.] - ETA: 0s - loss: 0.0602 - categorical\_accuracy: 0.9898WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0220.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0220.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0616 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 221/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0608 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 222/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0566 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 223/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0690 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 224/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0567 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 225/500

62/62 [==============================] - ETA: 0s - loss: 0.0626 - categorical\_accuracy: 0.9879

Epoch 00225: ReduceLROnPlateau reducing learning rate to 9.999999682655227e-24.

62/62 [==============================] - 6s 95ms/step - loss: 0.0626 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-22

Epoch 226/500

62/62 [==============================] - 7s 106ms/step - loss: 0.0570 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 227/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0597 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 228/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0620 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 229/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0675 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 230/500

61/62 [============================>.] - ETA: 0s - loss: 0.0529 - categorical\_accuracy: 0.9877WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0230.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0230.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 122ms/step - loss: 0.0527 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 231/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0694 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 232/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0668 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 233/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0533 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 234/500

62/62 [==============================] - 7s 104ms/step - loss: 0.0563 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 235/500

62/62 [==============================] - ETA: 0s - loss: 0.0555 - categorical\_accuracy: 0.9859

Epoch 00235: ReduceLROnPlateau reducing learning rate to 9.999999998199588e-25.

62/62 [==============================] - 6s 104ms/step - loss: 0.0555 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-23

Epoch 236/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0555 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 237/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0581 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 238/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0618 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 239/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0620 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 240/500

61/62 [============================>.] - ETA: 0s - loss: 0.0599 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0240.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0240.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 119ms/step - loss: 0.0594 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 241/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0718 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 242/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0668 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 243/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0661 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 244/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0634 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 245/500

62/62 [==============================] - ETA: 0s - loss: 0.0556 - categorical\_accuracy: 0.9849

Epoch 00245: ReduceLROnPlateau reducing learning rate to 1.0000000195414814e-25.

62/62 [==============================] - 6s 99ms/step - loss: 0.0556 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-24

Epoch 246/500

62/62 [==============================] - 7s 105ms/step - loss: 0.0597 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 247/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0694 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 248/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0693 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 249/500

62/62 [==============================] - 6s 93ms/step - loss: 0.0533 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 250/500

61/62 [============================>.] - ETA: 0s - loss: 0.0585 - categorical\_accuracy: 0.9836WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0250.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0250.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 124ms/step - loss: 0.0579 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 251/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0626 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 252/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0573 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 253/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0647 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 254/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0554 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 255/500

62/62 [==============================] - ETA: 0s - loss: 0.0659 - categorical\_accuracy: 0.9839

Epoch 00255: ReduceLROnPlateau reducing learning rate to 1.0000000195414814e-26.

62/62 [==============================] - 6s 100ms/step - loss: 0.0659 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-25

Epoch 256/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0646 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 257/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0618 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 258/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0570 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 259/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0570 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 260/500

61/62 [============================>.] - ETA: 0s - loss: 0.0628 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0260.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0260.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0621 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 261/500

62/62 [==============================] - 7s 106ms/step - loss: 0.0608 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 262/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0631 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 263/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0650 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 264/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0657 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 265/500

62/62 [==============================] - ETA: 0s - loss: 0.0534 - categorical\_accuracy: 0.9859

Epoch 00265: ReduceLROnPlateau reducing learning rate to 9.999999887266024e-28.

62/62 [==============================] - 6s 98ms/step - loss: 0.0534 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-26

Epoch 266/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0588 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 267/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0532 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 268/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0566 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 269/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0645 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 270/500

61/62 [============================>.] - ETA: 0s - loss: 0.0649 - categorical\_accuracy: 0.9836WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0270.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0270.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 125ms/step - loss: 0.0656 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 271/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0584 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 272/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0675 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 273/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0604 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 274/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0691 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 275/500

62/62 [==============================] - ETA: 0s - loss: 0.0700 - categorical\_accuracy: 0.9819

Epoch 00275: ReduceLROnPlateau reducing learning rate to 1.0000000272452012e-28.

62/62 [==============================] - 6s 101ms/step - loss: 0.0700 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-27

Epoch 276/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0600 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 277/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0602 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 278/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0533 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 279/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0580 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 280/500

61/62 [============================>.] - ETA: 0s - loss: 0.0598 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0280.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0280.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 131ms/step - loss: 0.0604 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 281/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0606 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 282/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0619 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 283/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0592 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 284/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0639 - categorical\_accuracy: 0.9778 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 285/500

62/62 [==============================] - ETA: 0s - loss: 0.0519 - categorical\_accuracy: 0.9869

Epoch 00285: ReduceLROnPlateau reducing learning rate to 1.0000000031710769e-29.

62/62 [==============================] - 6s 99ms/step - loss: 0.0519 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-28

Epoch 286/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0790 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 287/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0546 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 288/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0603 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 289/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0587 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 290/500

61/62 [============================>.] - ETA: 0s - loss: 0.0584 - categorical\_accuracy: 0.9898WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0290.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0290.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0580 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 291/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0606 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 292/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0642 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 293/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0629 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 294/500

62/62 [==============================] - 6s 94ms/step - loss: 0.0597 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 295/500

62/62 [==============================] - ETA: 0s - loss: 0.0587 - categorical\_accuracy: 0.9869

Epoch 00295: ReduceLROnPlateau reducing learning rate to 1.0000000031710769e-30.

62/62 [==============================] - 6s 99ms/step - loss: 0.0587 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-29

Epoch 296/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0539 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 297/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0558 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 298/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0601 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 299/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0501 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 300/500

61/62 [============================>.] - ETA: 0s - loss: 0.0519 - categorical\_accuracy: 0.9887WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0300.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0300.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0514 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 301/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0565 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 302/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0557 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 303/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0606 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 304/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0659 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 305/500

62/62 [==============================] - ETA: 0s - loss: 0.0572 - categorical\_accuracy: 0.9889

Epoch 00305: ReduceLROnPlateau reducing learning rate to 1.000000003171077e-31.

62/62 [==============================] - 6s 97ms/step - loss: 0.0572 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-30

Epoch 306/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0757 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 307/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0596 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 308/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0562 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 309/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0545 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 310/500

61/62 [============================>.] - ETA: 0s - loss: 0.0602 - categorical\_accuracy: 0.9867WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0310.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0310.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 121ms/step - loss: 0.0601 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 311/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0480 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 312/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0645 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 313/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0571 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 314/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0547 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 315/500

62/62 [==============================] - ETA: 0s - loss: 0.0483 - categorical\_accuracy: 0.9909

Epoch 00315: ReduceLROnPlateau reducing learning rate to 9.999999796611899e-33.

62/62 [==============================] - 6s 95ms/step - loss: 0.0483 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-31

Epoch 316/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0547 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 317/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0586 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 318/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0676 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 319/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0545 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 320/500

61/62 [============================>.] - ETA: 0s - loss: 0.0605 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0320.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0320.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 125ms/step - loss: 0.0601 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 321/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0563 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 322/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0549 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 323/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0588 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 324/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0565 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 325/500

62/62 [==============================] - ETA: 0s - loss: 0.0579 - categorical\_accuracy: 0.9859

Epoch 00325: ReduceLROnPlateau reducing learning rate to 9.999999502738312e-34.

62/62 [==============================] - 6s 99ms/step - loss: 0.0579 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-32

Epoch 326/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0591 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 327/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0549 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 328/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0535 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 329/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0646 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 330/500

61/62 [============================>.] - ETA: 0s - loss: 0.0666 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0330.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0330.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 122ms/step - loss: 0.0664 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 331/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0526 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 332/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0625 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 333/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0565 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 334/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0655 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 335/500

62/62 [==============================] - ETA: 0s - loss: 0.0635 - categorical\_accuracy: 0.9788

Epoch 00335: ReduceLROnPlateau reducing learning rate to 9.999999319067318e-35.

62/62 [==============================] - 6s 102ms/step - loss: 0.0635 - categorical\_accuracy: 0.9788 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-33

Epoch 336/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0590 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 337/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0691 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 338/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0583 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 339/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0588 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 340/500

61/62 [============================>.] - ETA: 0s - loss: 0.0689 - categorical\_accuracy: 0.9826WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0340.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0340.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 127ms/step - loss: 0.0688 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 341/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0563 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 342/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0565 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 343/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0595 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 344/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0663 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 345/500

62/62 [==============================] - ETA: 0s - loss: 0.0476 - categorical\_accuracy: 0.9919

Epoch 00345: ReduceLROnPlateau reducing learning rate to 9.999999319067319e-36.

62/62 [==============================] - 6s 100ms/step - loss: 0.0476 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-34

Epoch 346/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0525 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 347/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0659 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 348/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0563 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 349/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0568 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 350/500

61/62 [============================>.] - ETA: 0s - loss: 0.0646 - categorical\_accuracy: 0.9826WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0350.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0350.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0653 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 351/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0596 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 352/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0572 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 353/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0583 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 354/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0572 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 355/500

62/62 [==============================] - ETA: 0s - loss: 0.0574 - categorical\_accuracy: 0.9889

Epoch 00355: ReduceLROnPlateau reducing learning rate to 9.999999462560281e-37.

62/62 [==============================] - 6s 99ms/step - loss: 0.0574 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-35

Epoch 356/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0512 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 357/500

62/62 [==============================] - 7s 105ms/step - loss: 0.0672 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 358/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0547 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 359/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0712 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 360/500

61/62 [============================>.] - ETA: 0s - loss: 0.0574 - categorical\_accuracy: 0.9836WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0360.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0360.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 130ms/step - loss: 0.0566 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 361/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0585 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 362/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0623 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 363/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0558 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 364/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0568 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 365/500

62/62 [==============================] - ETA: 0s - loss: 0.0605 - categorical\_accuracy: 0.9869

Epoch 00365: ReduceLROnPlateau reducing learning rate to 9.99999946256028e-38.

62/62 [==============================] - 6s 101ms/step - loss: 0.0605 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-36

Epoch 366/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0674 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 367/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0579 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 368/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0558 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 369/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0598 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 370/500

61/62 [============================>.] - ETA: 0s - loss: 0.0501 - categorical\_accuracy: 0.9918WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0370.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0370.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 125ms/step - loss: 0.0499 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 371/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0592 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 372/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0592 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 373/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0616 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 374/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0577 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 375/500

62/62 [==============================] - ETA: 0s - loss: 0.0583 - categorical\_accuracy: 0.9829

Epoch 00375: ReduceLROnPlateau reducing learning rate to 9.99999991097579e-39.

62/62 [==============================] - 6s 98ms/step - loss: 0.0583 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-37

Epoch 376/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0636 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 377/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0690 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 378/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0583 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 379/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0653 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 380/500

61/62 [============================>.] - ETA: 0s - loss: 0.0630 - categorical\_accuracy: 0.9867WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0380.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0380.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 120ms/step - loss: 0.0632 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 381/500

62/62 [==============================] - 6s 94ms/step - loss: 0.0558 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 382/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0515 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 383/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0535 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 384/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0600 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 385/500

62/62 [==============================] - ETA: 0s - loss: 0.0614 - categorical\_accuracy: 0.9869

Epoch 00385: ReduceLROnPlateau reducing learning rate to 9.999999350456405e-40.

62/62 [==============================] - 6s 100ms/step - loss: 0.0614 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-38

Epoch 386/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0619 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 387/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0563 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 388/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0576 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 389/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0731 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 390/500

61/62 [============================>.] - ETA: 0s - loss: 0.0745 - categorical\_accuracy: 0.9816WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0390.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0390.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 131ms/step - loss: 0.0738 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 391/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0609 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 392/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0623 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 393/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0546 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 394/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0635 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 395/500

62/62 [==============================] - ETA: 0s - loss: 0.0597 - categorical\_accuracy: 0.9879

Epoch 00395: ReduceLROnPlateau reducing learning rate to 1.0000002153053334e-40.

62/62 [==============================] - 6s 99ms/step - loss: 0.0597 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0000e-39

Epoch 396/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0641 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 397/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0589 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 398/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0596 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 399/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0602 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 400/500

61/62 [============================>.] - ETA: 0s - loss: 0.0622 - categorical\_accuracy: 0.9867WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0400.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0400.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 124ms/step - loss: 0.0621 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 401/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0762 - categorical\_accuracy: 0.9758 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 402/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0618 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 403/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0603 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 404/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0717 - categorical\_accuracy: 0.9778 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 405/500

62/62 [==============================] - ETA: 0s - loss: 0.0692 - categorical\_accuracy: 0.9778

Epoch 00405: ReduceLROnPlateau reducing learning rate to 9.99994610111476e-42.

62/62 [==============================] - 6s 97ms/step - loss: 0.0692 - categorical\_accuracy: 0.9778 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9999e-41

Epoch 406/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0608 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 407/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0570 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 408/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0748 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 409/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0582 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 410/500

61/62 [============================>.] - ETA: 0s - loss: 0.0583 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0410.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0410.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0578 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 411/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0595 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 412/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0593 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 413/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0657 - categorical\_accuracy: 0.9788 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 414/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0636 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 415/500

62/62 [==============================] - ETA: 0s - loss: 0.0558 - categorical\_accuracy: 0.9879

Epoch 00415: ReduceLROnPlateau reducing learning rate to 9.999665841421895e-43.

62/62 [==============================] - 6s 100ms/step - loss: 0.0558 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9997e-42

Epoch 416/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0751 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 417/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0664 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 418/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0571 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 419/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0505 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 420/500

61/62 [============================>.] - ETA: 0s - loss: 0.0621 - categorical\_accuracy: 0.9887WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0420.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0420.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 129ms/step - loss: 0.0614 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 421/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0636 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 422/500

62/62 [==============================] - 7s 105ms/step - loss: 0.0595 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 423/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0676 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 424/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0513 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 425/500

62/62 [==============================] - ETA: 0s - loss: 0.0640 - categorical\_accuracy: 0.9778

Epoch 00425: ReduceLROnPlateau reducing learning rate to 1.0005271035279195e-43.

62/62 [==============================] - 6s 100ms/step - loss: 0.0640 - categorical\_accuracy: 0.9778 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.0005e-42

Epoch 426/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0577 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 427/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0582 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 428/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0567 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 429/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0493 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 430/500

61/62 [============================>.] - ETA: 0s - loss: 0.0665 - categorical\_accuracy: 0.9836WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0430.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0430.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0665 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 431/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0606 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 432/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0655 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 433/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0662 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 434/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0696 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 435/500

62/62 [==============================] - ETA: 0s - loss: 0.0592 - categorical\_accuracy: 0.9869

Epoch 00435: ReduceLROnPlateau reducing learning rate to 9.949219096706202e-45.

62/62 [==============================] - 6s 103ms/step - loss: 0.0592 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.9492e-44

Epoch 436/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0599 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 437/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0536 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 438/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0540 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 439/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0534 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 440/500

61/62 [============================>.] - ETA: 0s - loss: 0.0582 - categorical\_accuracy: 0.9877WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0440.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0440.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 121ms/step - loss: 0.0576 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 441/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0594 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 442/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0563 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 443/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0658 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 444/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0698 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 445/500

62/62 [==============================] - ETA: 0s - loss: 0.0692 - categorical\_accuracy: 0.9849

Epoch 00445: ReduceLROnPlateau reducing learning rate to 9.80908925027372e-46.

62/62 [==============================] - 6s 100ms/step - loss: 0.0692 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 9.8091e-45

Epoch 446/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0652 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 447/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0581 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 448/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0564 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 449/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0666 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 450/500

61/62 [============================>.] - ETA: 0s - loss: 0.0454 - categorical\_accuracy: 0.9928WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0450.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0450.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 123ms/step - loss: 0.0450 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 451/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0516 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 452/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0589 - categorical\_accuracy: 0.9899 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 453/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0630 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 454/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0527 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 455/500

62/62 [==============================] - ETA: 0s - loss: 0.0608 - categorical\_accuracy: 0.9879

Epoch 00455: ReduceLROnPlateau reducing learning rate to 1.4012984643248171e-46.

62/62 [==============================] - 6s 102ms/step - loss: 0.0608 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 1.4013e-45

Epoch 456/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0688 - categorical\_accuracy: 0.9798 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 457/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0566 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 458/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0611 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 459/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0628 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 460/500

61/62 [============================>.] - ETA: 0s - loss: 0.0637 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0460.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0460.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 126ms/step - loss: 0.0633 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 461/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0654 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 462/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0583 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 463/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0602 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 464/500

62/62 [==============================] - 6s 97ms/step - loss: 0.0510 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 465/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0552 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 466/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0618 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 467/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0553 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 468/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0565 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 469/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0644 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 470/500

61/62 [============================>.] - ETA: 0s - loss: 0.0614 - categorical\_accuracy: 0.9846WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0470.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0470.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 121ms/step - loss: 0.0608 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 471/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0506 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 472/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0716 - categorical\_accuracy: 0.9778 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 473/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0564 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 474/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0635 - categorical\_accuracy: 0.9808 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 475/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0707 - categorical\_accuracy: 0.9829 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 476/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0573 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 477/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0511 - categorical\_accuracy: 0.9919 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 478/500

62/62 [==============================] - 6s 96ms/step - loss: 0.0622 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 479/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0542 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 480/500

61/62 [============================>.] - ETA: 0s - loss: 0.0558 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0480.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0480.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 120ms/step - loss: 0.0551 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 481/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0603 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 482/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0521 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 483/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0536 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 484/500

62/62 [==============================] - 6s 98ms/step - loss: 0.0652 - categorical\_accuracy: 0.9819 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 485/500

62/62 [==============================] - 6s 100ms/step - loss: 0.0551 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 486/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0742 - categorical\_accuracy: 0.9788 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 487/500

62/62 [==============================] - 6s 101ms/step - loss: 0.0496 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 488/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0591 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 489/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0561 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 490/500

61/62 [============================>.] - ETA: 0s - loss: 0.0663 - categorical\_accuracy: 0.9857WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0490.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0490.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 8s 129ms/step - loss: 0.0658 - categorical\_accuracy: 0.9859 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 491/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0564 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 492/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0530 - categorical\_accuracy: 0.9879 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 493/500

62/62 [==============================] - 6s 103ms/step - loss: 0.0542 - categorical\_accuracy: 0.9929 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 494/500

62/62 [==============================] - 6s 95ms/step - loss: 0.0576 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 495/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0690 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 496/500

62/62 [==============================] - 6s 104ms/step - loss: 0.0584 - categorical\_accuracy: 0.9909 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 497/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0587 - categorical\_accuracy: 0.9849 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 498/500

62/62 [==============================] - 6s 99ms/step - loss: 0.0661 - categorical\_accuracy: 0.9839 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 499/500

62/62 [==============================] - 6s 102ms/step - loss: 0.0494 - categorical\_accuracy: 0.9869 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

Epoch 500/500

61/62 [============================>.] - ETA: 0s - loss: 0.0550 - categorical\_accuracy: 0.9887WARNING:absl:Found untraced functions such as lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_fn, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses, lstm\_cell\_layer\_call\_and\_return\_conditional\_losses while saving (showing 5 of 5). These functions will not be directly callable after loading.

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0500.ckpt/assets

INFO:tensorflow:Assets written to: /content/drive/MyDrive/LookLearn/models\_dir/cp-0500.ckpt/assets

WARNING:absl:<keras.layers.recurrent.LSTM object at 0x7f4df62424d0> has the same name 'LSTM' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTM'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

WARNING:absl:<keras.layers.recurrent.LSTMCell object at 0x7f4df623f910> has the same name 'LSTMCell' as a built-in Keras object. Consider renaming <class 'keras.layers.recurrent.LSTMCell'> to avoid naming conflicts when loading with `tf.keras.models.load\_model`. If renaming is not possible, pass the object in the `custom\_objects` parameter of the load function.

62/62 [==============================] - 7s 120ms/step - loss: 0.0549 - categorical\_accuracy: 0.9889 - val\_loss: 0.4705 - val\_categorical\_accuracy: 0.8646 - lr: 0.0000e+00

<keras.callbacks.History at 0x7f4dd25fdb90>