Report of final training result

1. Final training results

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Epoch 12/25
750/750 [==============================] - 60s 80ms/step - loss: 0.5979 - accuracy: 0.8120 - val_loss: 0.6232 - val_accuracy: 0.8058
Epoch 13/25
750/750 [==============================] - 61s 82ms/step - loss: 0.5586 - accuracy: 0.8234 - val_loss: 0.6139 - val_accuracy: 0.8023
Epoch 14/25
750/750 [==============================] - 60s 80ms/step - loss: 0.5206 - accuracy: 0.8352 - val_loss: 0.5956 - val_accuracy: 0.8108
Epoch 15/25
750/750 [==============================] - 61s 81ms/step - loss: 0.4896 - accuracy: 0.8470 - val_loss: 0.5751 - val_accuracy: 0.8183
Epoch 16/25
750/750 [==============================] - 60s 80ms/step - loss: 0.4627 - accuracy: 0.8553 - val_loss: 0.5735 - val_accuracy: 0.8182
Epoch 17/25
750/750 [==============================] - 59s 79ms/step - loss: 0.4376 - accuracy: 0.8599 - val_loss: 0.5693 - val_accuracy: 0.8180
Epoch 18/25
750/750 [==============================] - 65s 87ms/step - loss: 0.4175 - accuracy: 0.8652 - val_loss: 0.5557 - val_accuracy: 0.8262
Epoch 19/25
750/750 [==============================] - 59s 79ms/step - loss: 0.3881 - accuracy: 0.8755 - val_loss: 0.5503 - val_accuracy: 0.8270
Epoch 20/25
750/750 [==============================] - 59s 79ms/step - loss: 0.3685 - accuracy: 0.8810 - val_loss: 0.5446 - val_accuracy: 0.8283
Epoch 21/25
750/750 [==============================] - 61s 81ms/step - loss: 0.3500 - accuracy: 0.8888 - val_loss: 0.5424 - val_accuracy: 0.8323
Epoch 22/25
750/750 [==============================] - 57s 76ms/step - loss: 0.3297 - accuracy: 0.8922 - val_loss: 0.5433 - val_accuracy: 0.8288
Epoch 23/25
750/750 [==============================] - 57s 76ms/step - loss: 0.3052 - accuracy: 0.9027 - val_loss: 0.5408 - val_accuracy: 0.8338
Epoch 24/25
750/750 [==============================] - 61s 82ms/step - loss: 0.2934 - accuracy: 0.9054 - val_loss: 0.5494 - val_accuracy: 0.8353
Epoch 25/25
750/750 [==============================] - 60s 80ms/step - loss: 0.2765 - accuracy: 0.9108 - val_loss: 0.5418 - val_accuracy: 0.8355
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Final training accuracy: 91.08%
Final training loss: 0.2765
Final test accuracy: 83.55%

Overall Performance:
Our model has achieved over 83% accuracy on the test set, which is a strong indication of its ability to correctly classify the given data. This level of performance suggests that the model is generally effective for the task at hand. Moreover, the training accuracy is around 91%, which is 8% higher than the test accuracy. This is expected since the test set consists of completely unseen data. The relatively small drop in performance from validation to test suggests that the model has good generalization capabilities and is not overfitting.

Loss Values:
The training loss (0.2765) is lower than the test loss (0.5418), which is consistent with the slightly lower test accuracy. The loss did not significantly increase in the last few epochs (rather decreasing overall) which further suggests that the model is not overfitting.

2. Final demonstration proposal

We plan on making a webapp if we have time. We are not sure exactly how this will look yet, so we plan on utilizing online tutorials to learn more about how to implement our model into an accessible format