

Computer Vision Final

Project Part 2

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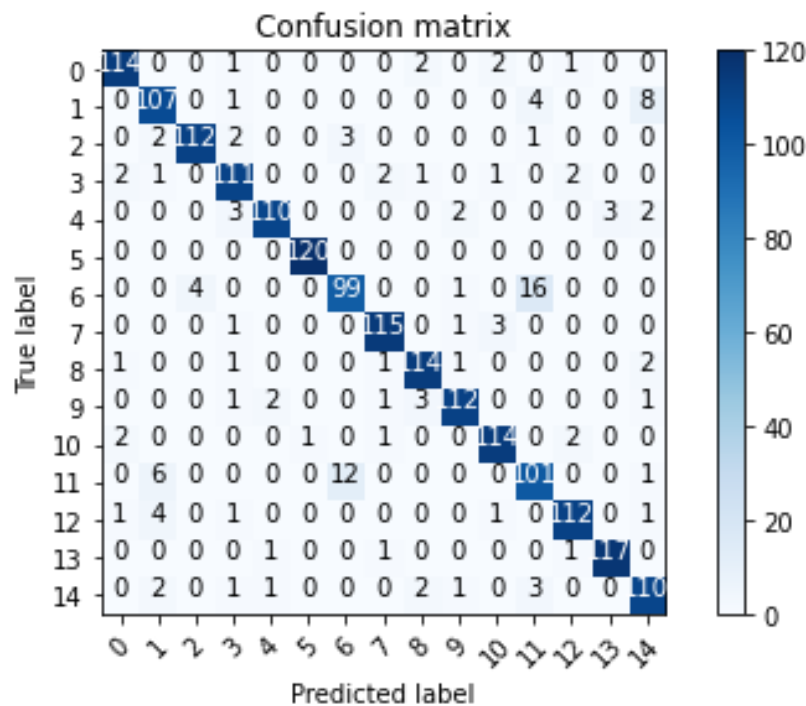
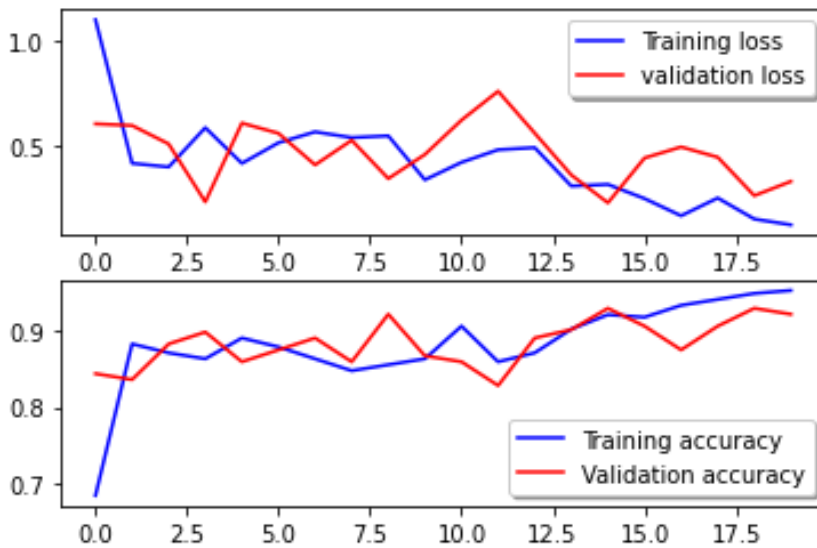
Summary

The task was to use Transfer Learning to perform scene classification on the given data.

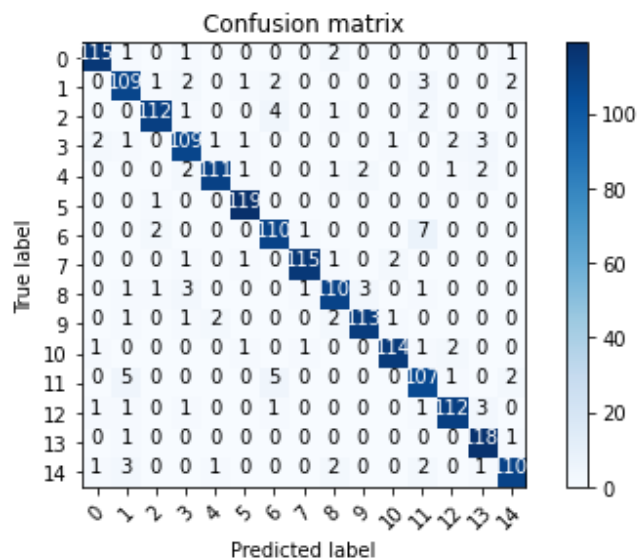
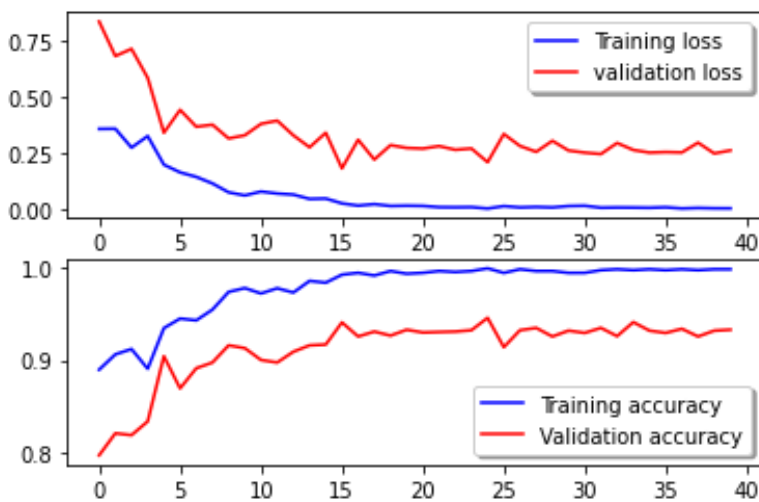
The technique is to use the pre-trained head of a well-established model Resnet 101 and to add some layers at the end which we will train for classification. I took the Resnet 101 model without the classification head and added an average pooling layer to provide features. Then I flattened and added a softmax layer.

I used an sgd optimizer with a callback to reduce the learning rate if the validation accuracy did not improve over four steps.

I split the “train” data into training data and validation data and trained the model over 20 epochs. The model could predict the test data with an accuracy of 92.6%.



The second part of the problem asked us to unfreeze a portion of the pre-trained model to increase accuracy. So I unfroze the last of five large convolution blocks that the model Resnet 101 consists of and trained the data over 40 epochs. The model could predict the test data with an accuracy of 93.5%.



For extra credit, I also implemented the first part with the model Inception V3. Even with feature extraction it performed much worse and could only achieve an accuracy of 87.05% on the test data.

