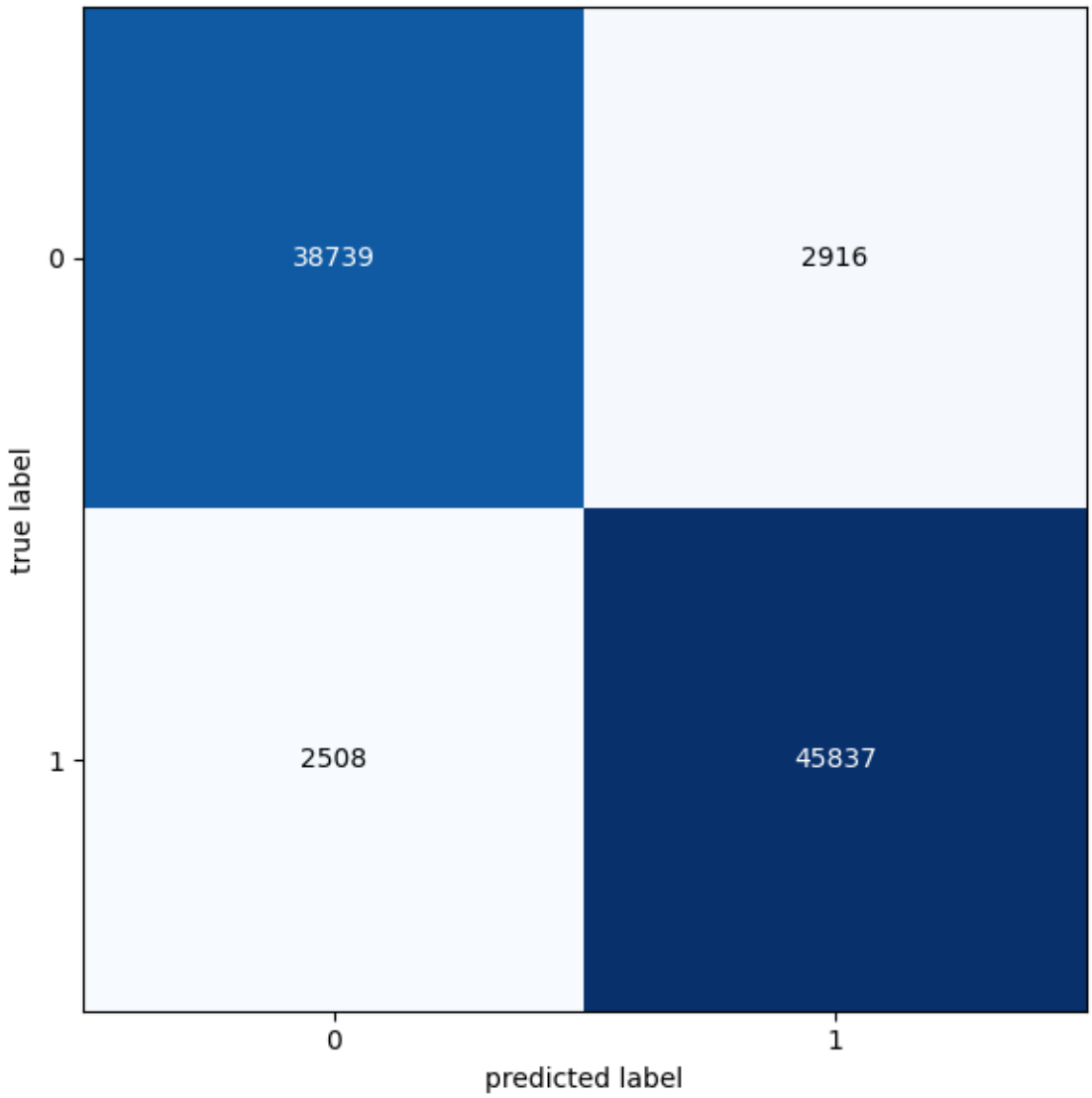
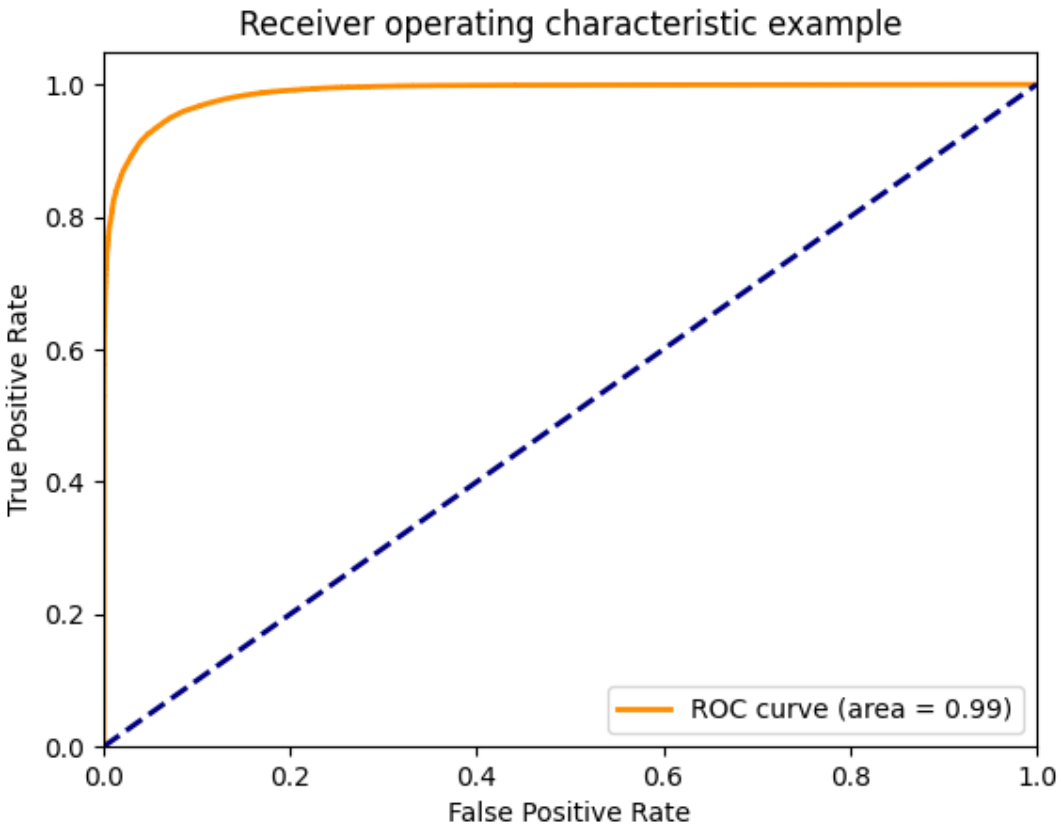
I developed a Keras classifier with 6 swish ($f(x) = x \cdot \text{sigmoid}(x)$) activation layers and 1 sigmoid layer. The classifier was compiled with the Adam optimizer. Binary_crossentropy was used to minimize loss while calculating binary outputs. The classifier was first trained on 70% of the train-io.txt file. 30% of this dataset was used to test the classifier. This resulted in an accuracy of 93.85% and a precision of 94.65%. A threshold value of 0.4723097 was calculated.



The confusion matrix is displayed above.



The ROC curve is displayed above.

The classifier was then used to predict the values of test-in.txt. The predictions where saved to test-out.txt using a threshold value of 0.4723097. This resulted in a prediction of 4643 0's and 5357 1's.