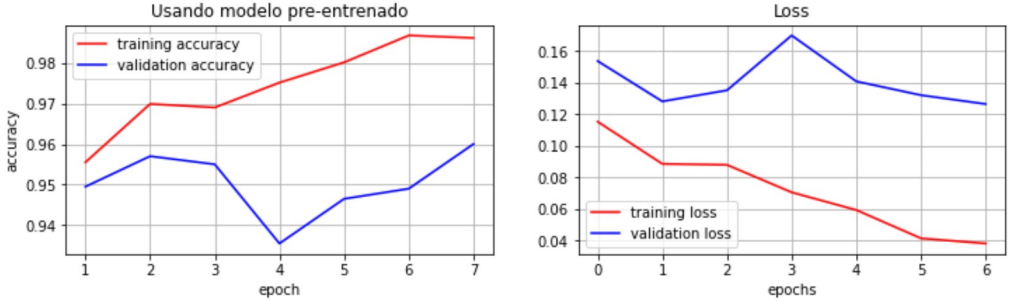
```
Imagenes entrenamiento originales: 8000
Imagenes entrenamiento con augmentation: 8000
Entrenamiento: Imágenes con tatuajes: 4596  sin: 3404  total imágenes de train: 8000
Validación: Imágenes con tatuajes:    1149  sin: 851  total imágenes de validate: 2000
Test: Imágenes con tatuajes:    1149  sin: 851  total imágenes de test: 2000
Epoch 1/30
250/250 [==============================] - 82s 328ms/step - loss: 0.5041 - accuracy: 0.7755 - val_loss: 0.3880 - val_accuracy: 0.8635 - lr: 1.0000e-04
Epoch 2/30
250/250 [==============================] - 81s 325ms/step - loss: 0.3040 - accuracy: 0.8698 - val_loss: 0.1973 - val_accuracy: 0.9205 - lr: 1.0000e-04
Epoch 3/30
250/250 [==============================] - 81s 325ms/step - loss: 0.2259 - accuracy: 0.9128 - val_loss: 0.1528 - val_accuracy: 0.9365 - lr: 1.0000e-04
Epoch 4/30
250/250 [==============================] - 82s 330ms/step - loss: 0.1911 - accuracy: 0.9245 - val_loss: 0.2093 - val_accuracy: 0.9205 - lr: 1.0000e-04
Epoch 5/30
250/250 [==============================] - 81s 326ms/step - loss: 0.1709 - accuracy: 0.9354 - val_loss: 0.2687 - val_accuracy: 0.9015 - lr: 1.0000e-04
Epoch 6/30
250/250 [==============================] - ETA: 0s - loss: 0.1540 - accuracy: 0.9435
Epoch 00006: ReduceLROnPlateau reducing learning rate to 2.499999936844688e-05.
250/250 [==============================] - 81s 323ms/step - loss: 0.1540 - accuracy: 0.9435 - val_loss: 0.1579 - val_accuracy: 0.9505 - lr: 1.0000e-04
Epoch 7/30
250/250 [==============================] - 81s 325ms/step - loss: 0.0919 - accuracy: 0.9643 - val_loss: 0.1237 - val_accuracy: 0.9515 - lr: 2.5000e-05
Epoch 8/30
250/250 [==============================] - 81s 325ms/step - loss: 0.0806 - accuracy: 0.9706 - val_loss: 0.1327 - val_accuracy: 0.9520 - lr: 2.5000e-05
Epoch 9/30
250/250 [==============================] - 82s 328ms/step - loss: 0.0586 - accuracy: 0.9766 - val_loss: 0.1212 - val_accuracy: 0.9560 - lr: 2.5000e-05
Epoch 10/30
250/250 [==============================] - ETA: 0s - loss: 0.0563 - accuracy: 0.9803
Epoch 00010: ReduceLROnPlateau reducing learning rate to 6.249999842111172e-06.
250/250 [==============================] - 81s 325ms/step - loss: 0.0563 - accuracy: 0.9803 - val_loss: 0.1930 - val_accuracy: 0.9300 - lr: 2.5000e-05
Epoch 11/30
250/250 [==============================] - 82s 326ms/step - loss: 0.0395 - accuracy: 0.9847 - val_loss: 0.1368 - val_accuracy: 0.9575 - lr: 6.2500e-06
Epoch 12/30
250/250 [==============================] - ETA: 0s - loss: 0.0377 - accuracy: 0.9860Restoring model weights from the end of the best epoch.
250/250 [==============================] - 82s 326ms/step - loss: 0.0377 - accuracy: 0.9860 - val_loss: 0.1431 - val_accuracy: 0.9530 - lr: 6.2500e-06
Epoch 00012: early stopping
Saved model to disk at 20200627-14:26-
Epoch 1/30
250/250 [==============================] - 82s 329ms/step - loss: 0.1152 - accuracy: 0.9555 - val_loss: 0.1536 - val_accuracy: 0.9495 - lr: 0.0010
Epoch 2/30
250/250 [==============================] - 82s 327ms/step - loss: 0.0885 - accuracy: 0.9699 - val_loss: 0.1280 - val_accuracy: 0.9570 - lr: 0.0010
Epoch 3/30
250/250 [==============================] - 82s 327ms/step - loss: 0.0879 - accuracy: 0.9690 - val_loss: 0.1350 - val_accuracy: 0.9550 - lr: 0.0010
Epoch 4/30
250/250 [==============================] - 82s 326ms/step - loss: 0.0705 - accuracy: 0.9751 - val_loss: 0.1698 - val_accuracy: 0.9355 - lr: 0.0010
Epoch 5/30
250/250 [==============================] - ETA: 0s - loss: 0.0592 - accuracy: 0.9801
Epoch 00005: ReduceLROnPlateau reducing learning rate to 0.0002500000118743628.
250/250 [==============================] - 81s 325ms/step - loss: 0.0592 - accuracy: 0.9801 - val_loss: 0.1407 - val_accuracy: 0.9465 - lr: 0.0010
Epoch 6/30
250/250 [==============================] - 82s 327ms/step - loss: 0.0413 - accuracy: 0.9868 - val_loss: 0.1320 - val_accuracy: 0.9490 - lr: 2.5000e-04
Epoch 7/30
250/250 [==============================] - ETA: 0s - loss: 0.0381 - accuracy: 0.9861Restoring model weights from the end of the best epoch.
```

```
250/250 [==============================] - 82s 326ms/step - loss: 0.0381 - accuracy: 0.9861 - val_loss: 0.1263 - val_accuracy: 0.9600 - lr: 2.5000e-04
Epoch 00007: early stopping
Saved model to disk at 20200627-14:35-
```



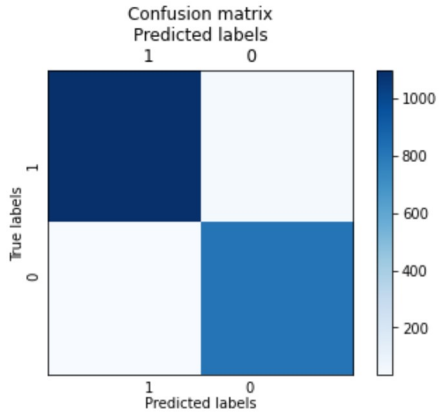

```
Evaluando modelo ...
WARNING:tensorflow:From <ipython-input-36-5aaea5141803>:13: Sequential.predict_classes (from tensorflow.python.keras.engine.sequential) is deprecated and will be removed afte
Instructions for updating:
Please use instead:* `np.argmax(model.predict(x), axis=-1)`,   if your model does multi-class classification   (e.g. if it uses a `softmax` last-layer activation).* `(model.p
63/63 [==============================] - 5s 72ms/step
Clases reales:    [0 0 0 0 0 0 0 1 0 1 0 1 0 0 0 1 0 1 0 0 0 1 1 0 1 1 0 1 0 1]
Clases predichas: [0 0 0 0 0 0 0 1 0 1 0 1 0 0 0 1 0 1 0 0 1 1 1 0 1 1 0 1 0 1]

 Classification Report
              precision    recall  f1-score   support

           0       0.94      0.96      0.95       851
           1       0.97      0.96      0.96      1149

    accuracy                           0.96      2000
   macro avg       0.96      0.96      0.96      2000
weighted avg       0.96      0.96      0.96      2000

Matriz de confusión
prediction     1    0
label
1           1098   51
0             35  816
```


Confusion matrix
Predicted labels
1
0
True labels
1
0
1000
800
600
400
200
1
0
Predicted labels
