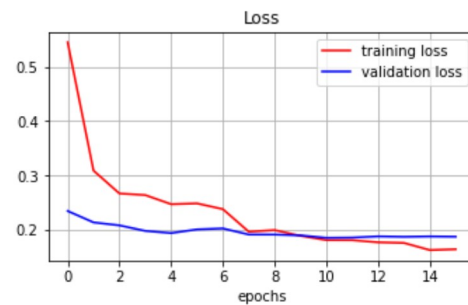
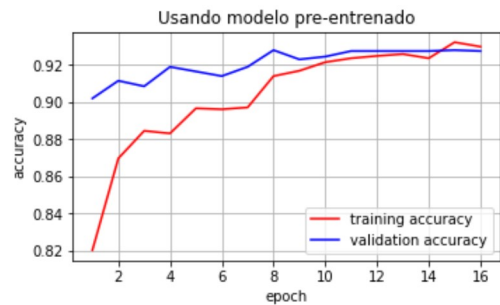


```
Imágenes entrenamiento originales: 8000
Imágenes entrenamiento con augmentation: 8000
Entrenamiento: Imágenes con tatuajes: 4596 sin: 3404 total imágenes de train: 8000
Validación: Imágenes con tatuajes: 1149 sin: 851 total imágenes de validate: 2000
Test: Imágenes con tatuajes: 1149 sin: 851 total imágenes de test: 2000
Entrenando con augmentation
Epoch 1/30
250/250 [=====] - 79s 317ms/step - loss: 0.5455 - accuracy: 0.8202 - val_loss: 0.2342 - val_accuracy: 0.9020 - lr: 1.0000e-04
Epoch 2/30
250/250 [=====] - 79s 314ms/step - loss: 0.3087 - accuracy: 0.8696 - val_loss: 0.2131 - val_accuracy: 0.9115 - lr: 1.0000e-04
Epoch 3/30
250/250 [=====] - 78s 310ms/step - loss: 0.2664 - accuracy: 0.8845 - val_loss: 0.2076 - val_accuracy: 0.9085 - lr: 1.0000e-04
Epoch 4/30
250/250 [=====] - 78s 313ms/step - loss: 0.2635 - accuracy: 0.8831 - val_loss: 0.1974 - val_accuracy: 0.9190 - lr: 1.0000e-04
Epoch 5/30
250/250 [=====] - 77s 310ms/step - loss: 0.2467 - accuracy: 0.8966 - val_loss: 0.1933 - val_accuracy: 0.9165 - lr: 1.0000e-04
Epoch 6/30
250/250 [=====] - 77s 309ms/step - loss: 0.2482 - accuracy: 0.8961 - val_loss: 0.2001 - val_accuracy: 0.9140 - lr: 1.0000e-04
Epoch 7/30
250/250 [=====] - ETA: 0s - loss: 0.2376 - accuracy: 0.8971
Epoch 00007: ReduceLROnPlateau reducing learning rate to 2.499999936844688e-05.
250/250 [=====] - 77s 308ms/step - loss: 0.2376 - accuracy: 0.8971 - val_loss: 0.2019 - val_accuracy: 0.9190 - lr: 1.0000e-04
Epoch 8/30
250/250 [=====] - 77s 309ms/step - loss: 0.1959 - accuracy: 0.9140 - val_loss: 0.1907 - val_accuracy: 0.9280 - lr: 2.5000e-05
Epoch 9/30
250/250 [=====] - 77s 309ms/step - loss: 0.1989 - accuracy: 0.9169 - val_loss: 0.1906 - val_accuracy: 0.9230 - lr: 2.5000e-05
Epoch 10/30
250/250 [=====] - ETA: 0s - loss: 0.1883 - accuracy: 0.9215
Epoch 00010: ReduceLROnPlateau reducing learning rate to 6.24999984211172e-06.
250/250 [=====] - 77s 307ms/step - loss: 0.1883 - accuracy: 0.9215 - val_loss: 0.1891 - val_accuracy: 0.9245 - lr: 2.5000e-05
Epoch 11/30
250/250 [=====] - 77s 308ms/step - loss: 0.1804 - accuracy: 0.9236 - val_loss: 0.1846 - val_accuracy: 0.9275 - lr: 6.2500e-06
Epoch 12/30
250/250 [=====] - 77s 306ms/step - loss: 0.1802 - accuracy: 0.9249 - val_loss: 0.1851 - val_accuracy: 0.9275 - lr: 6.2500e-06
Epoch 13/30
250/250 [=====] - 77s 309ms/step - loss: 0.1763 - accuracy: 0.9259 - val_loss: 0.1873 - val_accuracy: 0.9275 - lr: 6.2500e-06
Epoch 14/30
250/250 [=====] - ETA: 0s - loss: 0.1752 - accuracy: 0.9236
Epoch 00014: ReduceLROnPlateau reducing learning rate to 1.56249996052793e-06.
250/250 [=====] - 77s 308ms/step - loss: 0.1752 - accuracy: 0.9236 - val_loss: 0.1865 - val_accuracy: 0.9275 - lr: 6.2500e-06
Epoch 15/30
250/250 [=====] - 77s 308ms/step - loss: 0.1620 - accuracy: 0.9323 - val_loss: 0.1872 - val_accuracy: 0.9280 - lr: 1.5625e-06
Epoch 16/30
250/250 [=====] - ETA: 0s - loss: 0.1635 - accuracy: 0.9299Restoring model weights from the end of the best epoch.
250/250 [=====] - 77s 308ms/step - loss: 0.1635 - accuracy: 0.9299 - val_loss: 0.1867 - val_accuracy: 0.9275 - lr: 1.5625e-06
Epoch 00016: early stopping
```



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Entrenando con augmentation

Epoch 1/30

250/250 [=====] - 79s 318ms/step - loss: 0.1934 - accuracy: 0.9171 - val_loss: 0.1930 - val_accuracy: 0.9195 - lr: 0.0010

Epoch 2/30

250/250 [=====] - 77s 308ms/step - loss: 0.1879 - accuracy: 0.9200 - val_loss: 0.1921 - val_accuracy: 0.9195 - lr: 0.0010

Epoch 3/30

250/250 [=====] - 77s 308ms/step - loss: 0.1783 - accuracy: 0.9241 - val_loss: 0.1906 - val_accuracy: 0.9265 - lr: 0.0010

Epoch 4/30

250/250 [=====] - ETA: 0s - loss: 0.1731 - accuracy: 0.9249

Epoch 00004: ReduceLROnPlateau reducing learning rate to 0.0002500000118743628.

250/250 [=====] - 77s 307ms/step - loss: 0.1731 - accuracy: 0.9249 - val_loss: 0.1931 - val_accuracy: 0.9225 - lr: 0.0010

Epoch 5/30

250/250 [=====] - 77s 307ms/step - loss: 0.1692 - accuracy: 0.9275 - val_loss: 0.1883 - val_accuracy: 0.9280 - lr: 2.5000e-04

Epoch 6/30

250/250 [=====] - 78s 313ms/step - loss: 0.1569 - accuracy: 0.9312 - val_loss: 0.1874 - val_accuracy: 0.9305 - lr: 2.5000e-04

Epoch 7/30

250/250 [=====] - ETA: 0s - loss: 0.1585 - accuracy: 0.9344

Epoch 00007: ReduceLROnPlateau reducing learning rate to 6.25000029685907e-05.

250/250 [=====] - 78s 312ms/step - loss: 0.1585 - accuracy: 0.9344 - val_loss: 0.1833 - val_accuracy: 0.9335 - lr: 2.5000e-04

Epoch 8/30

250/250 [=====] - 78s 311ms/step - loss: 0.1488 - accuracy: 0.9350 - val_loss: 0.1833 - val_accuracy: 0.9330 - lr: 6.2500e-05

Epoch 9/30

250/250 [=====] - 78s 310ms/step - loss: 0.1526 - accuracy: 0.9327 - val_loss: 0.1849 - val_accuracy: 0.9330 - lr: 6.2500e-05

Epoch 10/30

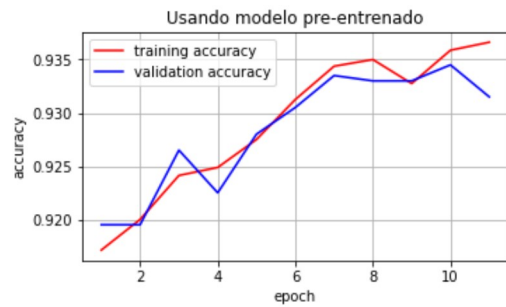
250/250 [=====] - 78s 310ms/step - loss: 0.1537 - accuracy: 0.9359 - val_loss: 0.1830 - val_accuracy: 0.9345 - lr: 6.2500e-05

Epoch 11/30

250/250 [=====] - ETA: 0s - loss: 0.1437 - accuracy: 0.9366Restoring model weights from the end of the best epoch.

250/250 [=====] - 77s 310ms/step - loss: 0.1437 - accuracy: 0.9366 - val_loss: 0.1853 - val_accuracy: 0.9315 - lr: 6.2500e-05

Epoch 00011: early stopping



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Evaluando modelo ...

WARNING:tensorflow:From <ipython-input-9-5aaaa5141803>:13: Sequential.predict_classes (from tensorflow.python.keras.engine.sequential) is deprecated and will be removed after
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.predict(x).argmax(axis=-1))`
63/63 [=====] - 3s 50ms/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 1 0 0 0 0 1 0 1 0 1 0 0 0 1 0 1 0 1 0 1 1 0 1 1 0 1 0 1]

Classification Report				
	precision	recall	f1-score	support
0	0.91	0.93	0.92	851
1	0.95	0.93	0.94	1149
accuracy			0.93	2000
macro avg	0.93	0.93	0.93	2000
weighted avg	0.93	0.93	0.93	2000

Matriz de confusión

prediction	1	0
label		
1	1069	80
0	59	792

