

```
Entrenamiento: Imágenes con tatuajes: 27551 sin: 27551 total imágenes de train: 55102
Validación: Imágenes con tatuajes: 1149 sin: 851 total imágenes de validate: 2000
Test: Imágenes con tatuajes: 1149 sin: 851 total imágenes de test: 2000
Arquitectura MobileNetv2-ft
Model: "sequential_1"
```

Layer (type)	Output Shape	Param #
=====		
mobilenetv2_1.00_224 (Model)	(None, 7, 7, 1280)	2257984
global_average_pooling2d_1 (	(None, 1280)	0
dense_3 (Dense)	(None, 320)	409920
dropout_2 (Dropout)	(None, 320)	0
dense_4 (Dense)	(None, 320)	102720
dropout_3 (Dropout)	(None, 320)	0
dense_5 (Dense)	(None, 1)	321
=====		

```
Total params: 2,770,945
Trainable params: 2,736,833
Non-trainable params: 34,112
```

```
lr actual: tf.Tensor(0.005, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: tf.Tensor(0.005, shape=(), dtype=float32)
lr nuevo: tf.Tensor(0.005, shape=(), dtype=float32)
```

Epoch 1/24

```
1722/1722 [=====] - 262s 152ms/step - loss: 0.1349 - accuracy: 0.9480 - val_loss: 0.2406 - val_accuracy: 0.9265
```

```
lr actual: tf.Tensor(0.005, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: tf.Tensor(0.005, shape=(), dtype=float32)
lr nuevo: tf.Tensor(0.005, shape=(), dtype=float32)
```

Epoch 2/24

```
1722/1722 [=====] - 258s 150ms/step - loss: 0.0655 - accuracy: 0.9769 - val_loss: 0.2589 - val_accuracy: 0.9225
```

```
lr actual: tf.Tensor(0.005, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.004267766952966369
lr nuevo: tf.Tensor(0.004267767, shape=(), dtype=float32)
```

Epoch 3/24

```
1722/1722 [=====] - 252s 146ms/step - loss: 0.0355 - accuracy: 0.9872 - val_loss: 0.2205 - val_accuracy: 0.9430
```

```
lr actual: tf.Tensor(0.004267767, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.003456708580912725
lr nuevo: tf.Tensor(0.0034567085, shape=(), dtype=float32)
```

Epoch 4/24

```
1722/1722 [=====] - 259s 150ms/step - loss: 0.0182 - accuracy: 0.9935 - val_loss: 0.1764 - val_accuracy: 0.9590
```

```
lr actual: tf.Tensor(0.0034567085, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0025
lr nuevo: tf.Tensor(0.0025, shape=(), dtype=float32)
```

Epoch 5/24

```
1722/1722 [=====] - 260s 151ms/step - loss: 0.0103 - accuracy: 0.9966 - val_loss: 0.1706 - val_accuracy: 0.9595
```

```
lr actual: tf.Tensor(0.0025, shape=(), dtype=float32)
```

```
lr maximo: 0.005 propuesto: 0.0015432914190872758
lr nuevo: tf.Tensor(0.0015432914, shape=(), dtype=float32)
Epoch 6/24
1722/1722 [=====] - 259s 151ms/step - loss: 0.0027 - accuracy: 0.9992 - val_loss: 0.1837 - val_accuracy: 0.9620
lr actual: tf.Tensor(0.0015432914, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0007322330470336313
lr nuevo: tf.Tensor(0.00073223305, shape=(), dtype=float32)
Epoch 7/24
1722/1722 [=====] - 250s 145ms/step - loss: 0.0020 - accuracy: 0.9994 - val_loss: 0.1761 - val_accuracy: 0.9655
lr actual: tf.Tensor(0.00073223305, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.00019030116872178316
lr nuevo: tf.Tensor(0.00019030117, shape=(), dtype=float32)
Epoch 8/24
1722/1722 [=====] - ETA: 0s - loss: 0.0017 - accuracy: 0.9994>saved snapshot /content/drive/My Drive/MAIR-Master/08MAIR-TFM/modelos/ensemble/mobilenet
1722/1722 [=====] - 259s 150ms/step - loss: 0.0017 - accuracy: 0.9994 - val_loss: 0.1607 - val_accuracy: 0.9660
lr actual: tf.Tensor(0.00019030117, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.005
lr nuevo: tf.Tensor(0.005, shape=(), dtype=float32)
Epoch 9/24
1722/1722 [=====] - 260s 151ms/step - loss: 0.0242 - accuracy: 0.9921 - val_loss: 0.7686 - val_accuracy: 0.8615
lr actual: tf.Tensor(0.005, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.004809698831278217
lr nuevo: tf.Tensor(0.004809699, shape=(), dtype=float32)
Epoch 10/24
1722/1722 [=====] - 259s 151ms/step - loss: 0.0172 - accuracy: 0.9939 - val_loss: 0.2283 - val_accuracy: 0.9465
lr actual: tf.Tensor(0.004809699, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.004267766952966369
lr nuevo: tf.Tensor(0.004267767, shape=(), dtype=float32)
Epoch 11/24
1722/1722 [=====] - 255s 148ms/step - loss: 0.0116 - accuracy: 0.9961 - val_loss: 0.1466 - val_accuracy: 0.9570
lr actual: tf.Tensor(0.004267767, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.003456708580912725
lr nuevo: tf.Tensor(0.0034567085, shape=(), dtype=float32)
Epoch 12/24
1722/1722 [=====] - 256s 149ms/step - loss: 0.0067 - accuracy: 0.9978 - val_loss: 0.1973 - val_accuracy: 0.9580
lr actual: tf.Tensor(0.0034567085, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0025
lr nuevo: tf.Tensor(0.0025, shape=(), dtype=float32)
Epoch 13/24
1722/1722 [=====] - 258s 150ms/step - loss: 0.0036 - accuracy: 0.9987 - val_loss: 0.1887 - val_accuracy: 0.9620
lr actual: tf.Tensor(0.0025, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0015432914190872758
lr nuevo: tf.Tensor(0.0015432914, shape=(), dtype=float32)
Epoch 14/24
1722/1722 [=====] - 256s 149ms/step - loss: 0.0021 - accuracy: 0.9995 - val_loss: 0.1734 - val_accuracy: 0.9655
lr actual: tf.Tensor(0.0015432914, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0007322330470336313
lr nuevo: tf.Tensor(0.00073223305, shape=(), dtype=float32)
Epoch 15/24
1722/1722 [=====] - 260s 151ms/step - loss: 8.3262e-04 - accuracy: 0.9998 - val_loss: 0.1871 - val_accuracy: 0.9615
lr actual: tf.Tensor(0.00073223305, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.00019030116872178316
lr nuevo: tf.Tensor(0.00019030117, shape=(), dtype=float32)
```

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Epoch 16/24
1722/1722 [=====] - ETA: 0s - loss: 3.3781e-04 - accuracy: 0.9999>saved snapshot /content/drive/My Drive/MAIR-Master/08MAIR-TFM/modelos/ensemble/mobi
1722/1722 [=====] - 257s 149ms/step - loss: 3.3781e-04 - accuracy: 0.9999 - val_loss: 0.1821 - val_accuracy: 0.9620
lr actual: tf.Tensor(0.00019030117, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.005
lr nuevo: tf.Tensor(0.005, shape=(), dtype=float32)
Epoch 17/24
1722/1722 [=====] - 255s 148ms/step - loss: 0.0126 - accuracy: 0.9960 - val_loss: 0.3012 - val_accuracy: 0.9460
lr actual: tf.Tensor(0.005, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.004809698831278217
lr nuevo: tf.Tensor(0.004809699, shape=(), dtype=float32)
Epoch 18/24
1722/1722 [=====] - 257s 149ms/step - loss: 0.0116 - accuracy: 0.9962 - val_loss: 0.2288 - val_accuracy: 0.9465
lr actual: tf.Tensor(0.004809699, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.004267766952966369
lr nuevo: tf.Tensor(0.004267767, shape=(), dtype=float32)
Epoch 19/24
1722/1722 [=====] - 255s 148ms/step - loss: 0.0074 - accuracy: 0.9974 - val_loss: 0.1757 - val_accuracy: 0.9610
lr actual: tf.Tensor(0.004267767, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.003456708580912725
lr nuevo: tf.Tensor(0.0034567085, shape=(), dtype=float32)
Epoch 20/24
1722/1722 [=====] - 260s 151ms/step - loss: 0.0026 - accuracy: 0.9992 - val_loss: 0.1839 - val_accuracy: 0.9650
lr actual: tf.Tensor(0.0034567085, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0025
lr nuevo: tf.Tensor(0.0025, shape=(), dtype=float32)
Epoch 21/24
1722/1722 [=====] - 256s 149ms/step - loss: 0.0021 - accuracy: 0.9993 - val_loss: 0.2227 - val_accuracy: 0.9640
lr actual: tf.Tensor(0.0025, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0015432914190872758
lr nuevo: tf.Tensor(0.0015432914, shape=(), dtype=float32)
Epoch 22/24
1722/1722 [=====] - 259s 150ms/step - loss: 0.0012 - accuracy: 0.9996 - val_loss: 0.1652 - val_accuracy: 0.9675
lr actual: tf.Tensor(0.0015432914, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.0007322330470336313
lr nuevo: tf.Tensor(0.00073223305, shape=(), dtype=float32)
Epoch 23/24
1722/1722 [=====] - 257s 149ms/step - loss: 2.9908e-04 - accuracy: 0.9999 - val_loss: 0.1744 - val_accuracy: 0.9665
lr actual: tf.Tensor(0.00073223305, shape=(), dtype=float32)
lr maximo: 0.005 propuesto: 0.00019030116872178316
lr nuevo: tf.Tensor(0.00019030117, shape=(), dtype=float32)
Epoch 24/24
1722/1722 [=====] - ETA: 0s - loss: 2.2412e-04 - accuracy: 1.0000>saved snapshot /content/drive/My Drive/MAIR-Master/08MAIR-TFM/modelos/ensemble/mobi
1722/1722 [=====] - 257s 149ms/step - loss: 2.2412e-04 - accuracy: 1.0000 - val_loss: 0.1798 - val_accuracy: 0.9665
Train: 1.000, Test: 0.966
```

