CHINESE-MNIST

Adrian Vargas Orellana

Indice

01

BASE DE DATOS

- 15.000 Imagenes (64x64)
- Chinese_mnist.csv
  original name (example): Locate{1,3,4}.jpg
  index extracted: suite_id: 1, sample_id: 3, code: 4
  resulted file name: input_1_3_4.jpg

Character	Code	Value
'九'	1	0
'十'	2	1
'百'	3	2
'千'	4	3
'万'	5	4
'亿'	6	5
'零'	7	6
'一'	8	7
'二'	9	8
'三'	10	9
'四'	11	10
'五'	12	100
'六'	13	1000
'七'	14	10000
'八'	15	100000

02

PROCESAMIENTO

suite_id	sample_id	Code	value	Character
1	1	10	9	九

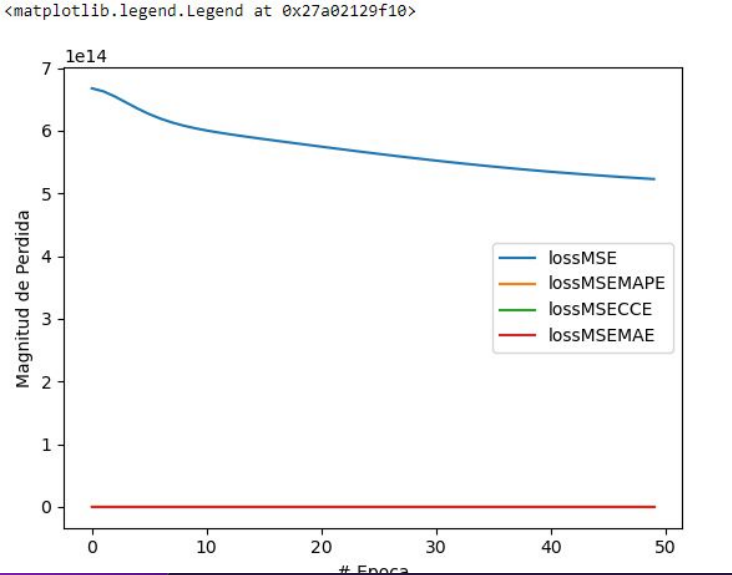
input_1_1_10.jpg

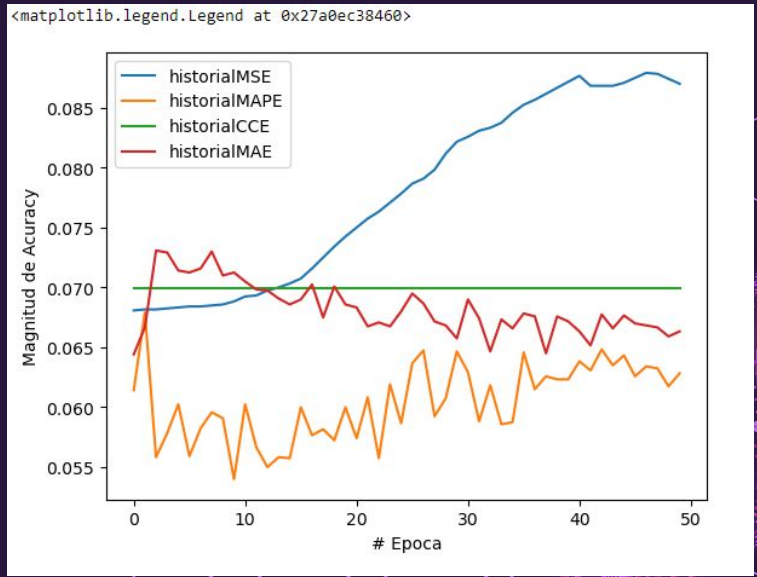
X = np.array (64x64
Y = np.array (amb y senseOne Hot Encoded)

(12000, 64, 64)
(12000,)
(12000, 64, 64)
(12000, 15)

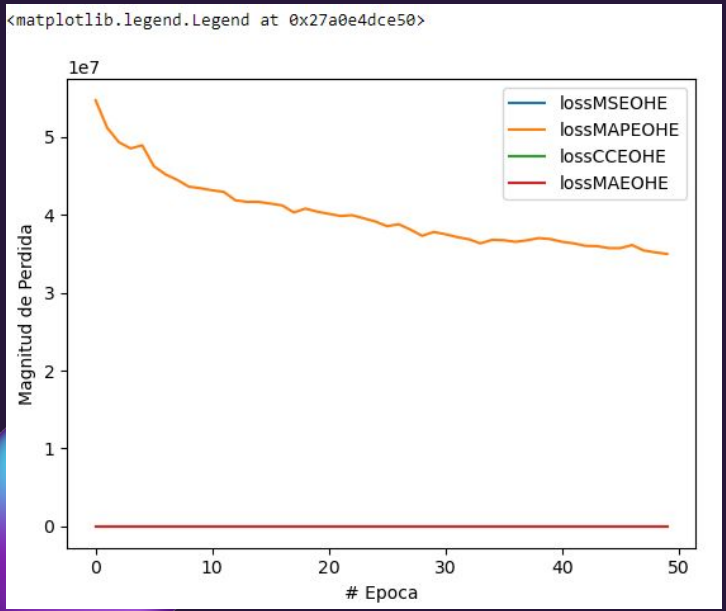
03
MODELOS

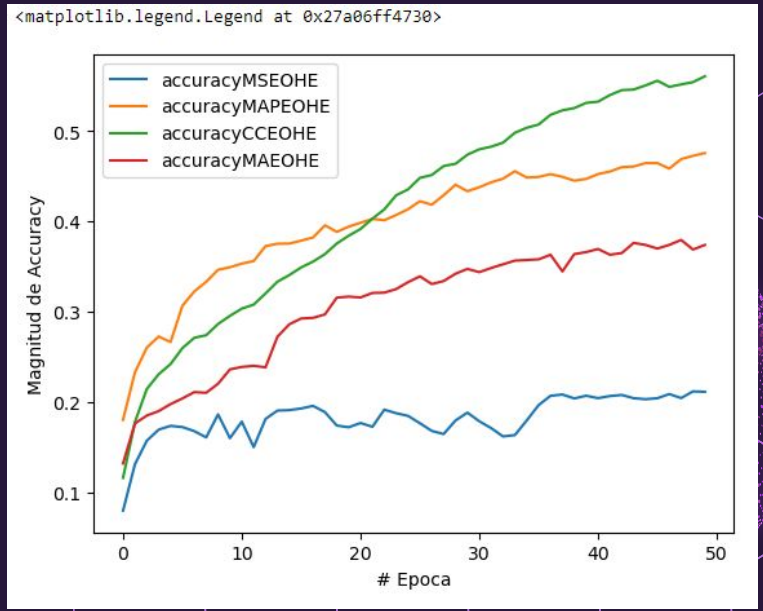
Modelos Sin One Hot Encoded



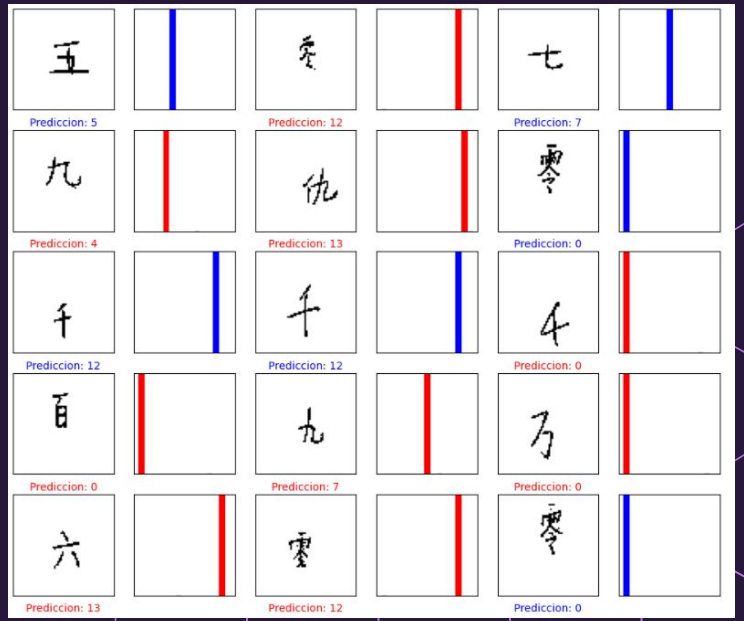


Modelos Con One Hot Encoded

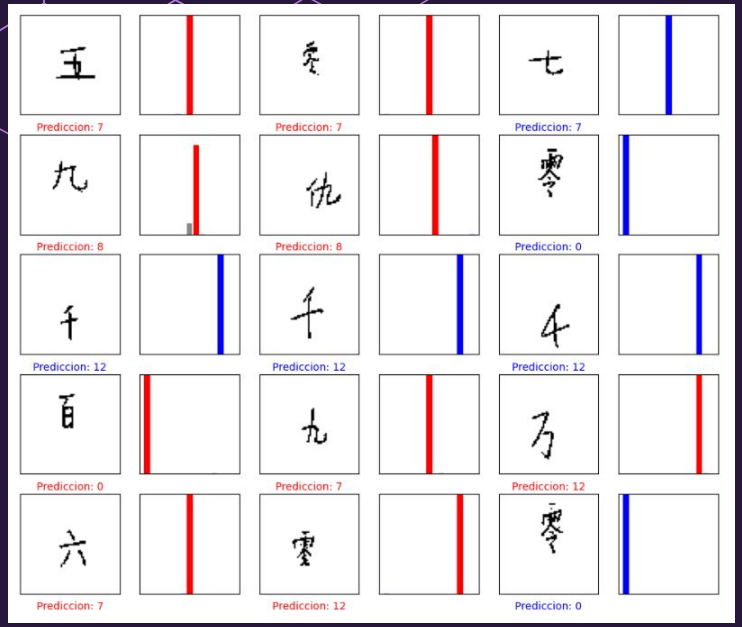




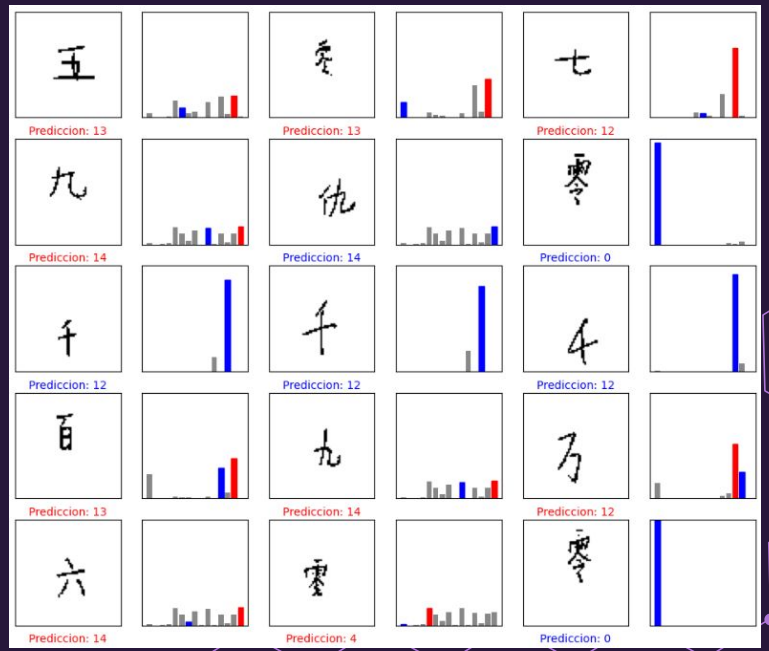
MAPE


Prediccion: 5
Prediccion: 12
Prediccion: 7
Prediccion: 4
Prediccion: 13
Prediccion: 0
Prediccion: 12
Prediccion: 12
Prediccion: 0
Prediccion: 0
Prediccion: 7
Prediccion: 0
Prediccion: 13
Prediccion: 12
Prediccion: 0

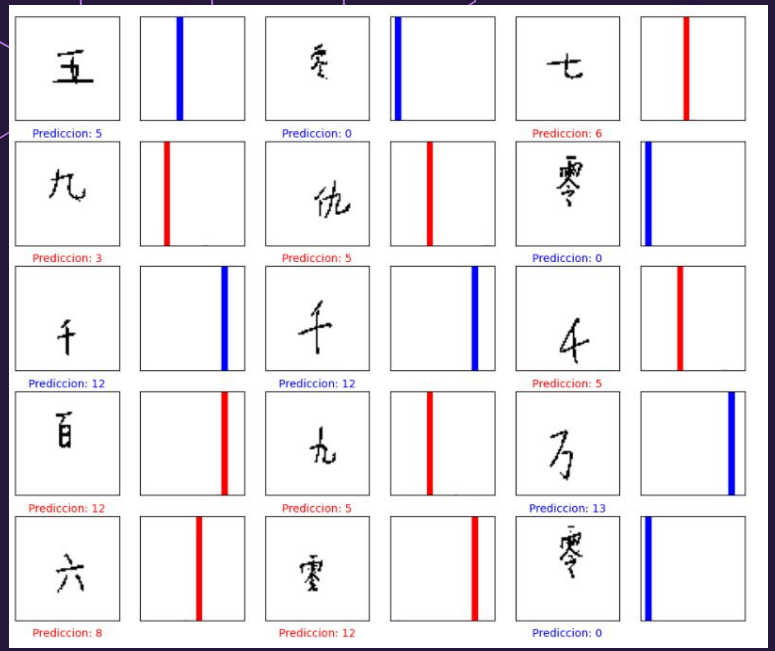
MSE


Prediccion: 7
Prediccion: 7
Prediccion: 7
Prediccion: 8
Prediccion: 8
Prediccion: 0
Prediccion: 12
Prediccion: 12
Prediccion: 12
Prediccion: 0
Prediccion: 7
Prediccion: 12
Prediccion: 7
Prediccion: 12
Prediccion: 0

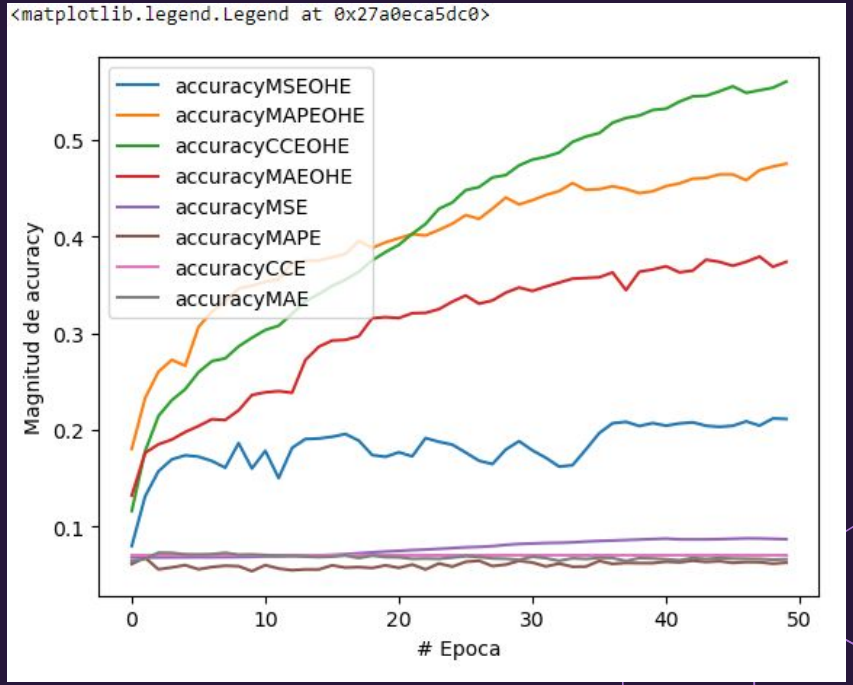
CCE


Prediccion: 13
Prediccion: 13
Prediccion: 12
Prediccion: 14
Prediccion: 14
Prediccion: 0
Prediccion: 12
Prediccion: 12
Prediccion: 12
Prediccion: 13
Prediccion: 14
Prediccion: 12
Prediccion: 14
Prediccion: 4
Prediccion: 0

MAE

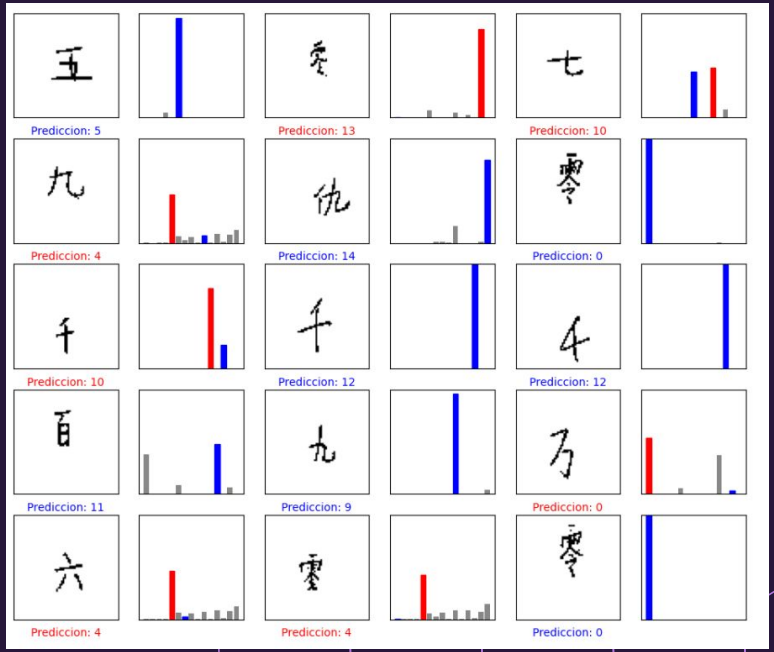

Prediccion: 5
Prediccion: 0
Prediccion: 6
Prediccion: 3
Prediccion: 5
Prediccion: 0
Prediccion: 12
Prediccion: 12
Prediccion: 5
Prediccion: 12
Prediccion: 5
Prediccion: 13
Prediccion: 8
Prediccion: 12
Prediccion: 0

Comparativas

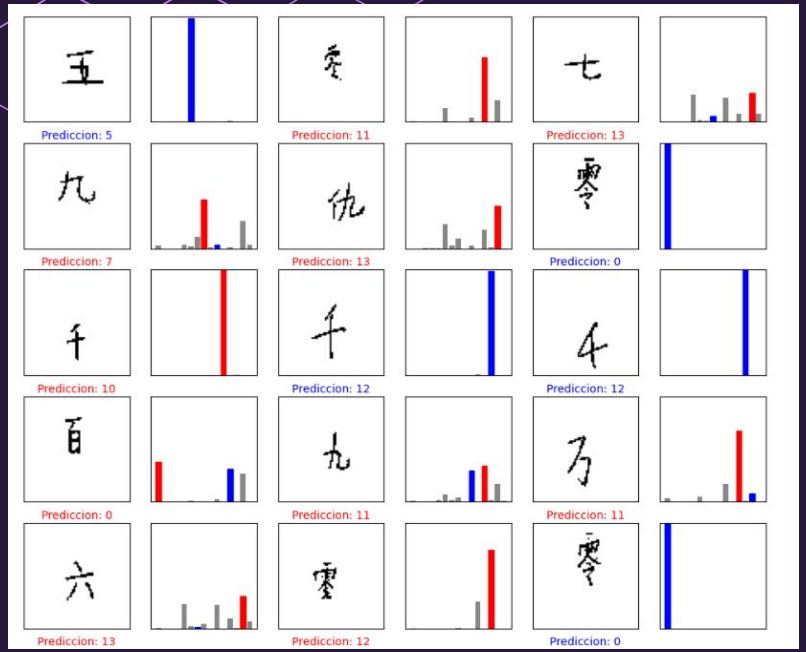


04
MEJORAS

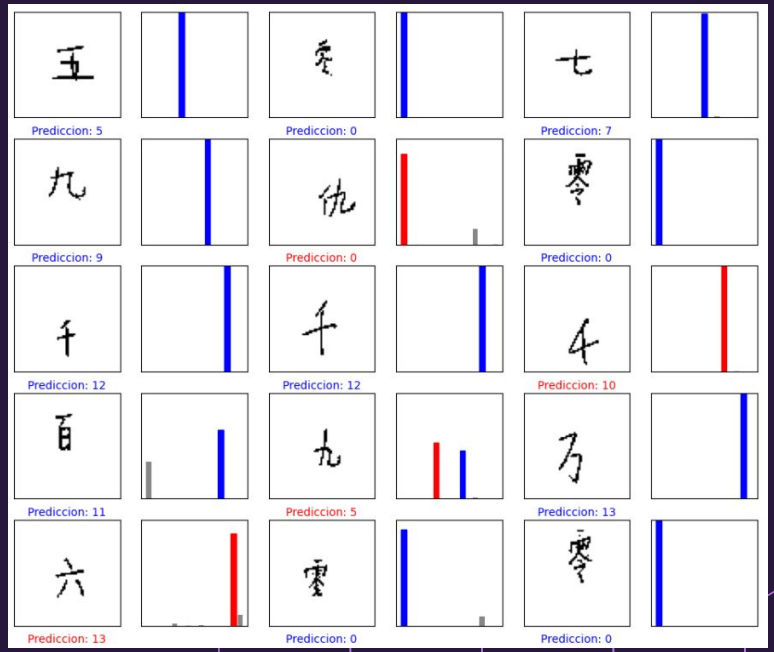
CCE 1 capa y 128 neuronas

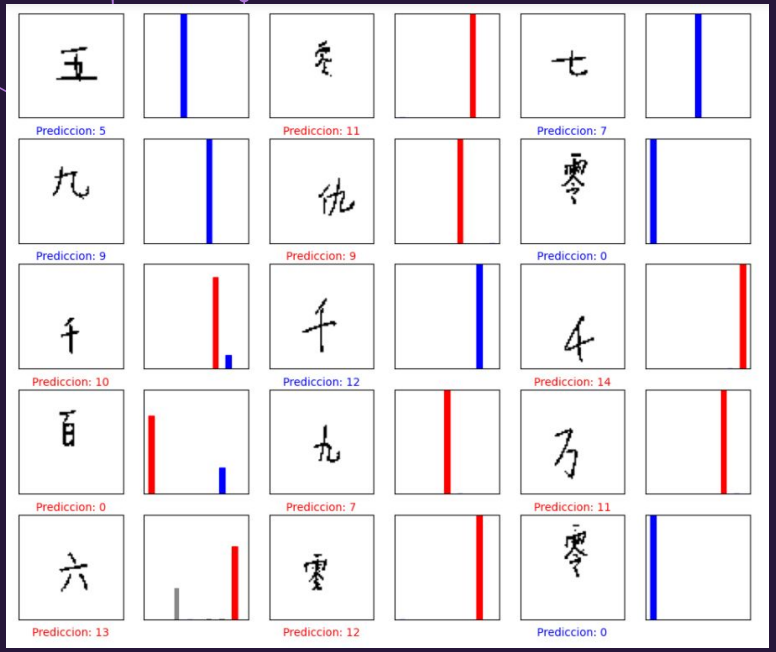


CCE 2 capas y 50 neuronas



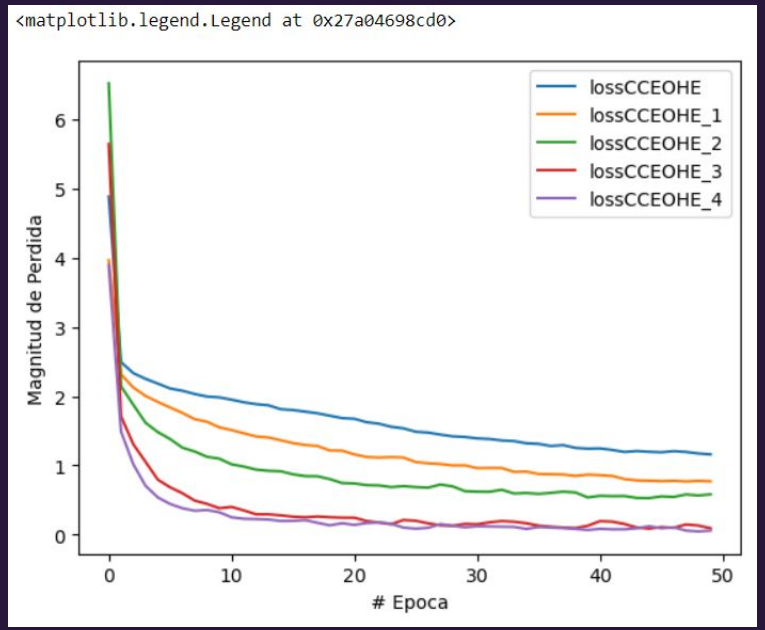
CCE 3 capas y 128 neuronas

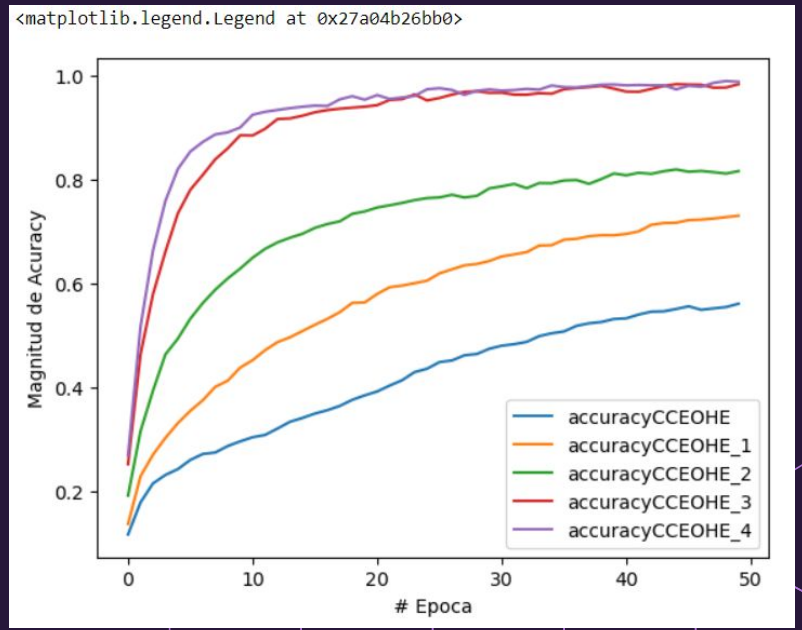




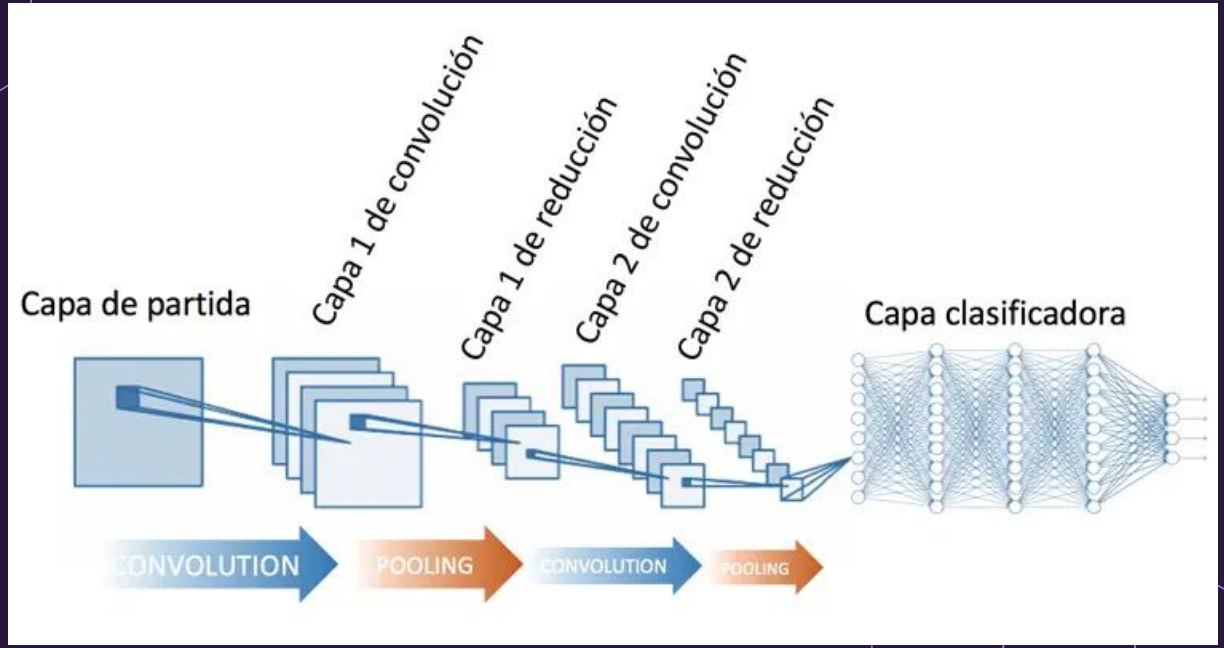
CCE 2 capas y 128 neuronas

Comparativas



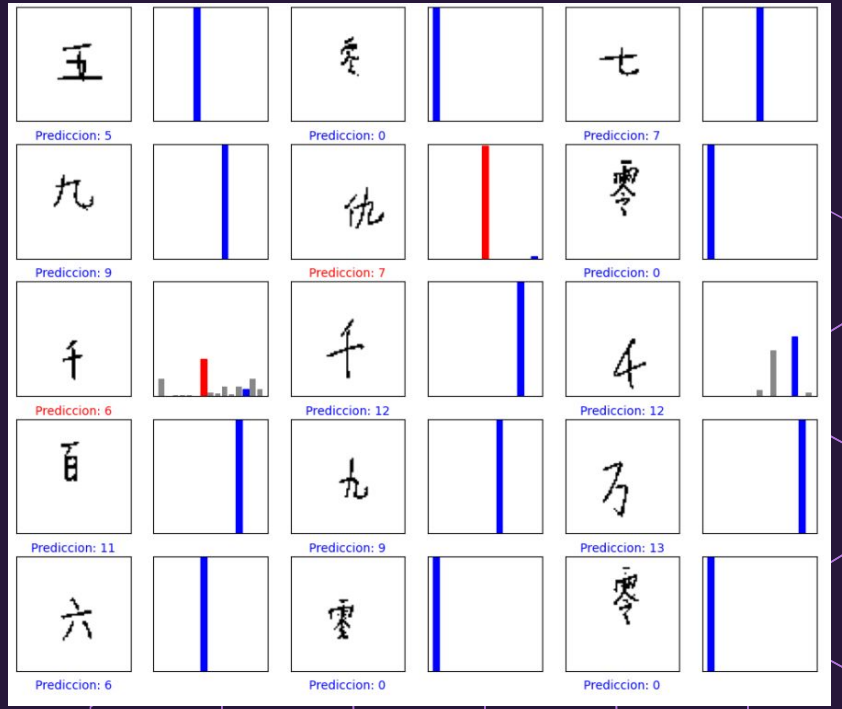


Red Neuronal Convolucional

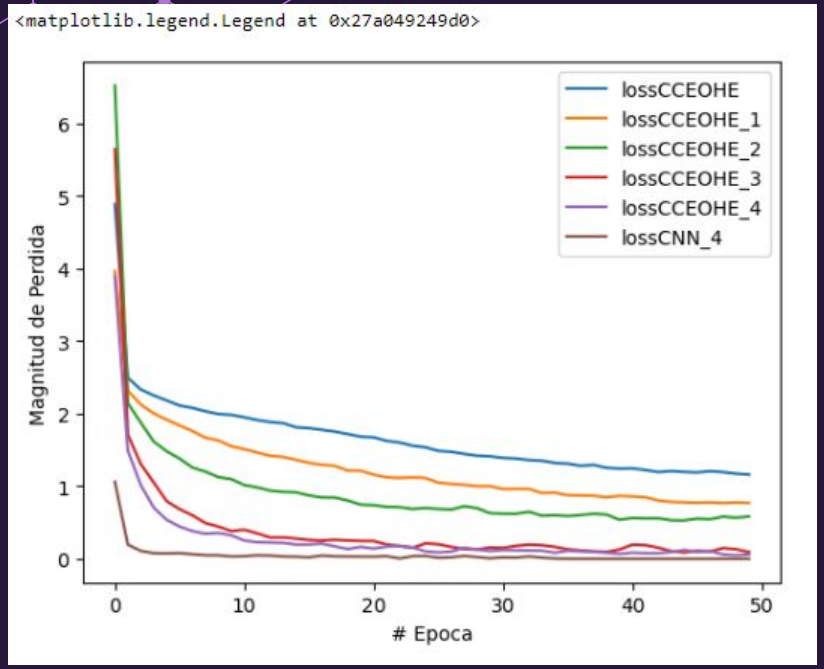


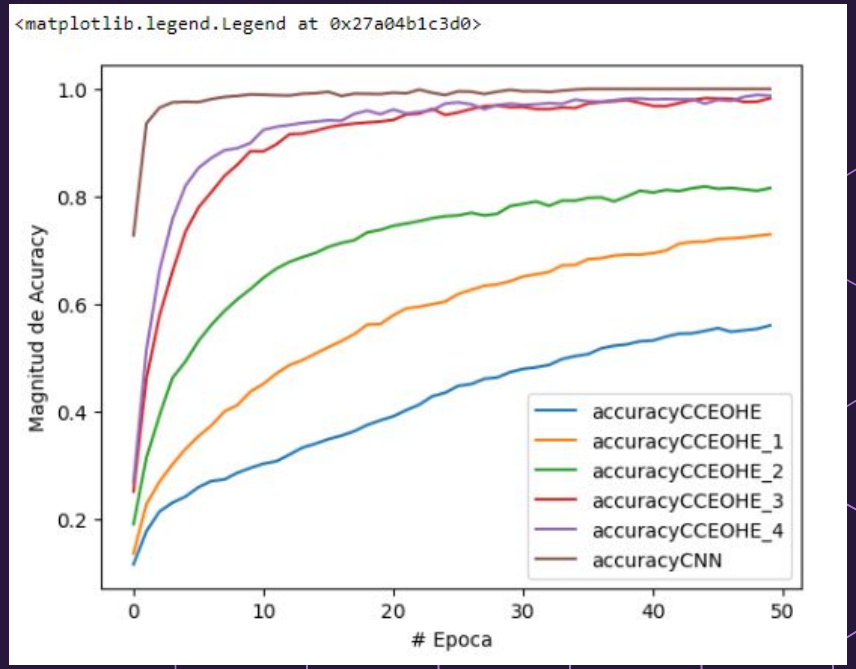
Red Neuronal Convolucional

```
modelCNN = tf.keras.Sequential([
    tf.keras.layers.Conv2D(32, (3,3), input_shape=[64, 64, 1], activation=tf.nn.relu),
    tf.keras.layers.MaxPooling2D(2,2),#2,2 es el tamaño de la matriz

    tf.keras.layers.Conv2D(64, (3,3), input_shape=[64, 64, 1], activation=tf.nn.relu),
    tf.keras.layers.MaxPooling2D(2,2),#2,2 es el tamaño de la matriz

    tf.keras.layers.Flatten(),

    tf.keras.layers.Dense(128, activation=tf.nn.relu),
    tf.keras.layers.Dense(128, activation=tf.nn.relu),
    tf.keras.layers.Dense(128, activation=tf.nn.relu),
    tf.keras.layers.Dense(15, activation=tf.nn.softmax), posibles
])
modelCNN.compile(
    optimizer = 'adam',
    loss='categorical_crossentropy',
    metrics=['accuracy']
)
modelCNN.summary()
```



Comparativas





05

CONCLUSIONES

GRACIAS!

Alguna pregunta?

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yourwebsite.com

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