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import numpy as np
import pandas as pd
traindata = pd.read_csv('sign_mnist_train.csv')
trainlabel=traindata['label'].values
traindata.drop('label',inplace=True,axis=1)
trainimages = traindata.values
trainimages=trainimages.reshape(-1,28,28,1)
testdata = pd.read_csv('sign_mnist_test.csv')
testlabel=testdata['label'].values
testdata.drop('label',inplace=True,axis=1)
testimages = testdata.values
testimages=testimages.reshape(-1,28,28,1)

from keras.models import Sequential
from keras.layers import Conv2D,MaxPooling2D, Dense,Flatten, Dropout

classifier = Sequential()
classifier.add(Conv2D(filters=8, kernel_size=(3,3),strides=(1,1),padding='same',input_shape=
classifier.add(MaxPooling2D(pool_size=(2,2)))
classifier.add(Conv2D(filters=16, kernel_size=(3,3),strides=(1,1),padding='same',activation=
classifier.add(Dropout(0.5))
classifier.add(MaxPooling2D(pool_size=(4,4)))
classifier.add(Dense(128, activation='relu'))
classifier.add(Flatten())
classifier.add(Dense(26, activation='softmax'))

classifier.compile(loss='sparse_categorical_crossentropy', optimizer='adam', metrics=['accu
classifier.fit(trainimages,trainlabel,validation_split=0.2, epochs=25, batch_size=100)

Epoch 1/25
220/220 [=====] - 9s 41ms/step - loss: 3.8601 - accuracy: 0.4034 -
Epoch 2/25
220/220 [=====] - 11s 49ms/step - loss: 0.8063 - accuracy: 0.7301 -
Epoch 3/25
220/220 [=====] - 10s 43ms/step - loss: 0.5344 - accuracy: 0.8205 -
Epoch 4/25
220/220 [=====] - 10s 44ms/step - loss: 0.3998 - accuracy: 0.8630 -
Epoch 5/25
220/220 [=====] - 12s 53ms/step - loss: 0.3211 - accuracy: 0.8897 -
Epoch 6/25
220/220 [=====] - 9s 42ms/step - loss: 0.2818 - accuracy: 0.9029 -
Epoch 7/25
220/220 [=====] - 9s 43ms/step - loss: 0.2430 - accuracy: 0.9187 -
Epoch 8/25
220/220 [=====] - 11s 49ms/step - loss: 0.2022 - accuracy: 0.9283 -
Epoch 9/25
220/220 [=====] - 9s 43ms/step - loss: 0.1959 - accuracy: 0.9330 -

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Epoch 10/25
220/220 [=====] - 8s 37ms/step - loss: 0.1781 - accuracy: 0.9380
Epoch 11/25
220/220 [=====] - 8s 37ms/step - loss: 0.1624 - accuracy: 0.9458 -
Epoch 12/25
220/220 [=====] - 8s 37ms/step - loss: 0.1435 - accuracy: 0.9504 -
Epoch 13/25
220/220 [=====] - 8s 38ms/step - loss: 0.1298 - accuracy: 0.9562 -
Epoch 14/25
220/220 [=====] - 8s 37ms/step - loss: 0.1383 - accuracy: 0.9536 -
Epoch 15/25
220/220 [=====] - 8s 37ms/step - loss: 0.1255 - accuracy: 0.9581 -
Epoch 16/25
220/220 [=====] - 10s 44ms/step - loss: 0.1151 - accuracy: 0.9612 -
Epoch 17/25
220/220 [=====] - 9s 39ms/step - loss: 0.1061 - accuracy: 0.9654 -
Epoch 18/25
220/220 [=====] - 9s 41ms/step - loss: 0.1003 - accuracy: 0.9659 -
Epoch 19/25
220/220 [=====] - 10s 47ms/step - loss: 0.0875 - accuracy: 0.9706 -
Epoch 20/25
220/220 [=====] - 8s 37ms/step - loss: 0.1000 - accuracy: 0.9654 -
Epoch 21/25
220/220 [=====] - 8s 37ms/step - loss: 0.0941 - accuracy: 0.9679 -
Epoch 22/25
220/220 [=====] - 8s 38ms/step - loss: 0.0961 - accuracy: 0.9676 -
Epoch 23/25
220/220 [=====] - 8s 37ms/step - loss: 0.0818 - accuracy: 0.9720 -
Epoch 24/25
220/220 [=====] - 8s 38ms/step - loss: 0.0982 - accuracy: 0.9682 -
Epoch 25/25
220/220 [=====] - 8s 37ms/step - loss: 0.0846 - accuracy: 0.9725 -

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<tensorflow.python.keras.callbacks.History at 0x14148e1c0>

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accuracy = classifier.evaluate(testimages,testlabel,batch_size=32)
print("Accuracy: ",accuracy[1])

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225/225 [=====] - 1s 5ms/step - loss: 0.4271 - accuracy: 0.8967
Accuracy: 0.896681547164917

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classifier.save('Model.h5')

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from keras.utils.vis_utils import plot_model

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plot_model(classifier,show_shapes=True, show_layer_names=True)
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png