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In [ ]: import matplotlib.pyplot as plt
import numpy as np
from keras.datasets import mnist
from keras.utils import to_categorical
(X_train,Y_train),(X_test,Y_test) = mnist.load_data()
X_train = X_train.reshape(60000,28,28,1)
X_test = X_test.reshape(10000,28,28,1)
Y_train = to_categorical(Y_train)
X_test = to_categorical(X_test)
from keras.models import Sequential
from keras.layers import Dense,Conv2D,Flatten
model = Sequential()
model.add(Conv2D(64,kernel_size=3,activation="relu",input_shape =(28,28,1)))
model.add(Conv2D(32,kernel_size=3,activation="relu"))
model.add(Flatten())
model.add(Dense(10,activation='softmax'))
model.compile(optimizer = 'adam' , loss = 'categorical_crossentropy' , metrics = ['accuracy'])
model.fit(X_train,Y_train , validation_data = (X_test,Y_test) ,epochs =5)
score = model.evaluate(X_test,Y_test , verbose =0)
sample = X_test[1:2]
prediction = model.predict(sample)
plt.imshow(sample.reshape(28,28))
plt.show()
classes = np.argmax(prediction , axis =1)
print(f'Test loss = {score[0]} / Test accuracy ={score[1]}')
print("Output classes:", classes)
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