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import tensorflow as tf

import matplotlib.pyplot as plt

from tensorflow import keras

import numpy as np

(x_train, y_train), (x_test, y_test) = keras.datasets.fashion_mnist.load_data()

plt.imshow(x_train[1]) //output1

plt.imshow(x_train[0]) //output2

x_train = x_train.astype('float32') / 255.0

x_test = x_test.astype('float32') / 255.0

x_train = x_train.reshape(-1, 28, 28, 1)

x_test = x_test.reshape(-1, 28, 28, 1)

model = keras.Sequential([

    keras.Input(shape=(28,28,1)),

    keras.layers.Conv2D(32, (3,3), activation='relu'),

    keras.layers.MaxPooling2D((2,2)),

    keras.layers.Dropout(0.25),

    keras.layers.Conv2D(64, (3,3), activation='relu'),

    keras.layers.MaxPooling2D((2,2)),

    keras.layers.Dropout(0.25),

    keras.layers.Conv2D(128, (3,3), activation='relu'),

    keras.layers.Flatten(),

    keras.layers.Dense(128, activation='relu'),

    keras.layers.Dropout(0.25),

    keras.layers.Dense(10, activation='softmax')

])

model.summary() // output3

model.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])

history = model.fit(x_train, y_train, epochs=10, validation_data=(x_test, y_test))

test_loss, test_acc = model.evaluate(x_test, y_test)

print('Test accuracy:', test_acc) //output 4

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