```
%%time
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Dropout, Flatten, Conv2D, MaxPooling2D
import tensorflow as tf
import cv2

def load_data():
  (X_train, y_train), (X_test, y_test)=tf.keras.datasets.fashion_mnist.load_data()
  X_train = X_train/255.0
  X_test = X_test/255.0
  return X_train, y_train, X_test, y_test

X_train, y_train, X_test, y_test = load_data()
fashion_model=Sequential()
fashion_model.add(Conv2D(32,(3,3),padding='same', input_shape=(28,28,1),activation=
fashion_model.add(MaxPooling2D(pool_size=(2,2),strides=(2,2)))
fashion_model.add(Conv2D(100,(3,3),activation='relu', padding='same'))
fashion_model.add(MaxPooling2D(pool_size=(2,2),strides=(2,2)))
fashion_model.add(Flatten())
fashion_model.add(Dense(units=400,activation='relu'))
fashion_model.add(Dropout(0.4))
fashion_model.add(Dense(units=10,activation='softmax'))
fashion_model.compile(optimizer='adam',loss=tf.keras.losses.sparse_categorical_cros
fashion_model.fit(X_train.reshape(-1,28,28,1),y_train,epochs=10)
score =fashion_model.evaluate(X_test.reshape(-1,28,28,1),y_test)
print(f"Test score : {score[1]}")
```

```
Epoch 1/10
1875/1875 [==============================] - 5s 2ms/step - loss: 0.4051 - acc
Epoch 2/10
1875/1875 [==============================] - 5s 2ms/step - loss: 0.2668 - acc
Epoch 3/10
1875/1875 [==============================] - 5s 2ms/step - loss: 0.2250 - acc
Epoch 4/10
1875/1875 [==============================] - 5s 3ms/step - loss: 0.1914 - acc
Epoch 5/10
1875/1875 [==============================] - 5s 3ms/step - loss: 0.1669 - acc
Epoch 6/10
1875/1875 [==============================] - 5s 3ms/step - loss: 0.1451 - acc
Epoch 7/10
1875/1875 [==============================] - 5s 2ms/step - loss: 0.1238 - acc
Epoch 8/10
1875/1875 [==============================] - 5s 3ms/step - loss: 0.1084 - acc
Epoch 9/10
1875/1875 [==============================] - 5s 2ms/step - loss: 0.0949 - acc
Epoch 10/10
1875/1875 [==============================] - 5s 3ms/step - loss: 0.0841 - acc
313/313 [==============================] - 1s 2ms/step - loss: 0.2846 - accur
Test score : 0.9229000210762024
CPU times: user 50.8 s, sys: 5.84 s, total: 56.7 s
Wall time: 49.4 s
```