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Loading the data set:

from keras.datasets import mnist#download mnist data and split into train and test sets  
(X\_train, y\_train), (X\_test, y\_test) = mnist.load\_data()

EXPLOTARY DATA ANALYSIS:

import matplotlib.pyplot as plt#plot the first image in the dataset  
plt.imshow(X\_train[0]

#check image shape  
X\_train[0].shape

reshape data to fit model  
X\_train = X\_train.reshape(60000,28,28,1)  
X\_test = X\_test.reshape(10000,28,28,1)

from keras.utils import to\_categorical#one-hot encode target column  
y\_train = to\_categorical(y\_train)  
y\_test = to\_categorical(y\_test)y\_train[0]

from keras.models import Sequential  
from keras.layers import Dense, Conv2D, Flatten#create model  
model = Sequential()#add model layers  
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’))

#compile model using accuracy to measure model performance  
model.compile(optimizer='adam', loss='categorical\_crossentropy', metrics=['accuracy'])

#train the model  
model.fit(X\_train, y\_train, validation\_data=(X\_test, y\_test), epochs=3)