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In [1]: import keras
import pandas as pd
import tensorflow as tf
from keras.datasets import mnist
from keras.models import Sequential, Input, Model
from keras.layers import Dense, Activation
from keras.layers import Conv2D, MaxPooling2D
from keras.layers import Normalization, BatchNormalization
from keras.utils import np_utils
import numpy as np
from keras.layers import Dropout, Flatten
from keras.layers import advanced_activations import LeakyReLU
import random
import matplotlib.pyplot as plt

In [2]: (X_train, y_train), (X_test, y_test)=tf.keras.datasets.cifar10.load_data()#loading dataset and splitting
# dataset into test and train

In [3]: X_train.shape#checking the shape of the train set
Out[3]: (50000, 32, 32, 3)

In [4]: np.isnan(X_train).sum()#Checking for Null values
Out[4]: 0

In [5]: np.isnan(y_test).sum()#Checking for Null values
Out[5]: 0

In [6]: np.isnan(y_train).sum()#Checking for Null values
Out[6]: 0

In [7]: np.isnan(y_test).sum()#Checking for Null values
Out[7]: 0

In [8]: X_train.shape
Out[8]: (50000, 32, 32, 3)

In [9]: #for keras to be able to run
X_train=X_train.astype('float32')
X_test=X_test.astype('float32')
X_train=X_train/255
X_test=X_test/255

In [10]: X_test.shape
Out[10]: (10000, 32, 32, 3)

In [11]: #encoding the labels of the dataset
y_train_hot=tf.keras.utils.to_categorical(y_train,num_classes=10 )
y_test_hot=tf.keras.utils.to_categorical(y_test,num_classes=10)

In [12]: y_train_hot.shape
Out[12]: (50000, 10)

In [13]: #import matplotlib.pyplot as plt
plt.imshow(X_train[12], cmap='Greys')
plt.show()

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