I choose cifar10 as my dataset.

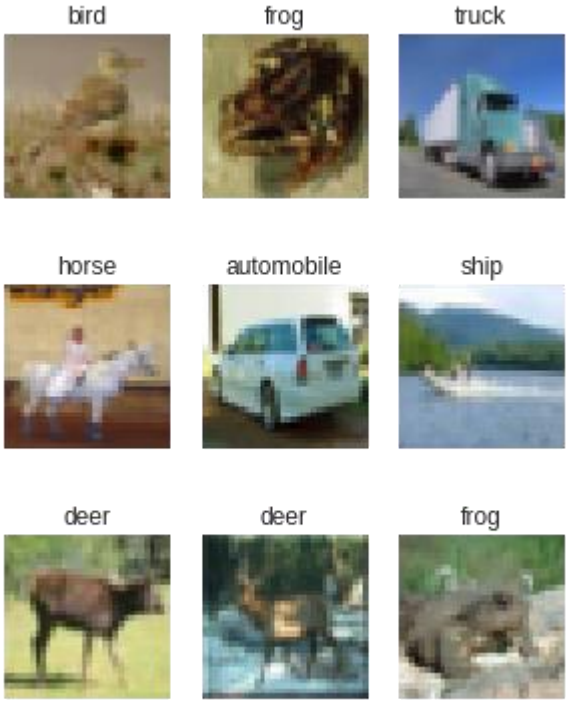
1(1) the number of samples in the training:45000,

Testing: 10000

Validation: 5000

(2) the number of categories:10. They are "airplane", "automobile", "bird", "cat", "deer", "dog", "frog", "horse", "ship", "truck"

(3) the size of the image (width, height, number of channels): 32*32*3



2

Layer (type)	Output Shape	Param #
layer_conv_1 (Conv2D)	(None, 32, 32, 64)	3136
layer_conv_2 (Conv2D)	(None, 32, 32, 64)	65600
max_pooling2d_7 (MaxPooling2	(None, 16, 16, 64)	0
flatten_7 (Flatten)	(None, 16384)	0
dense_13 (Dense)	(None, 64)	1048640
dense_14 (Dense)	(None, 10)	650

3 since

(1)filter size =4, filter number of each convolutional layer=64

(2) neuron number of the fully-connected layer:from 16384 to 64, and then from 64 to 10

(3) optimization algorithm: SGD with bath size =64

learning rate decay is 95% with intial learning rate 0.001

training epochs=40

4 My 11 combination and test accuracy are:
(0.7012, [0.0001, 3, 1]),
(0.6972, [0.00014007071232658124, 3, 3]),
(0.6956, [0.0001149227381993183, 4, 3]),
(0.6668, [0.0010933383907442255, 4, 3]),
(0.6556, [0.000959858531577898, 4, 1]),
(0.617, [0.0018323646040133406, 5, 1]),
(0.5774, [0.0034504109083992054, 5, 2]),
(0.4846, [0.003221626515288017, 4, 2]),
(0.1064, [0.009567889950647857, 3, 3]),
(0.1024, [0.0071692041129234885, 3, 3]),
(0.095, [0.007919052920154934, 3, 1])
Thus the best one is number of convolutional layers=1,
the filter number of each convolutional layer (same for each layer)=3
and learning rate=0.0001