Deep Learning

Convolutional Neural Networks (CNN)

800

1- Suppose the the image (a). Calculate the **output of the below model.**

Conv2d(2, (3, 3), (1, 1))
Conv2d(3, (1, 1), (1, 1))
MaxPooling((2, 2), (1, 1))

1	5	8	4	9
8	9	3	2	7
4	5	2	1	8
1	0	0	1	5
0	0	0	0	0

(a)

Conv2d(n, s)
n: Number of Kernels
k: Size of Kernels
s: (stride_x, stride_y)

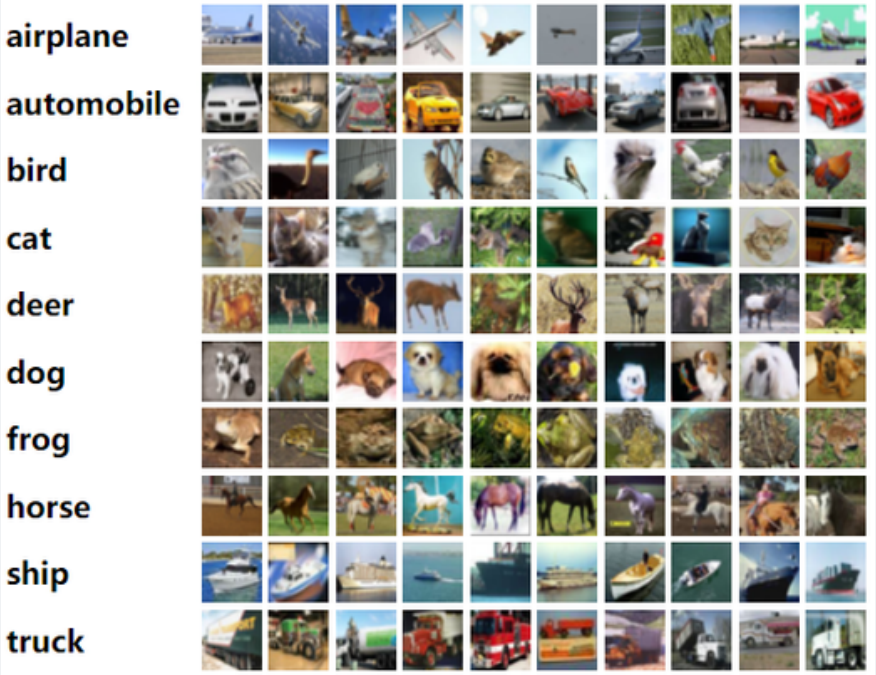
MaxPooling((w, h), (stride_x, stride_y))
w, h: width , height of pooling window

Initialize the kernels (weights) randomly (desired).

Use padding, for Conv2d layers.

2. Load the CIFAR-10 dataset and write a code to classify the classes. (same as previous ex set.)

- **Use CNN.**
- Use 10 % of the train-set as validation-set.
- Number of epochs: 5
- Compare the case when using **Dense layers and CNN.**



+ CNN