04_week1_quiz

The basics of ConvNets

测验, 10 个问题

第 1 个问题

1

point

1。第 1 个问题

What do you think applying this filter to a grayscale image will do?

01−1013−3−113−3−101−10

Detect 45 degree edges

Detect horizontal edges

Detect vertical edges

Detect image contrast

第 2 个问题

1

point

2。第 2 个问题

Suppose your input is a 300 by 300 color (RGB) image, and you are not using a convolutional network. If the first hidden layer has 100 neurons, each one fully connected to the input, how many parameters does this hidden layer have (including the bias parameters)?

9,000,001

9,000,100

27,000,001

27,000,100

第 3 个问题

1

point

3。第 3 个问题

Suppose your input is a 300 by 300 color (RGB) image, and you use a convolutional layer with 100 filters that are each 5x5. How many parameters does this hidden layer have (including the bias parameters)?

are each 5x5. How many parameters does this hidden layer have (including the bias parameters)?

2501

2600

7500

7600

4。第 4 个问题

You have an input volume that is 63x63x16, and convolve it with 32 filters that are each 7x7, using a stride of 2 and no padding. What is the output volume?

29x29x32

29x29x16

16x16x32

16x16x16

5。第 5 个问题

You have an input volume that is 15x15x8, and pad it using "pad=2." What is the dimension of the resulting volume (after padding)?

17x17x10

17x17x8

19x19x8

19x19x12

6。第 6 个问题

You have an input volume that is 63x63x16, and convolve it with 32 filters that are each 7x7, and stride of 1. You want to use a "same" convolution. What is the padding?

1

2

3

7

7。第 7 个问题

You have an input volume that is 32x32x16, and apply max pooling with a stride of 2 and a filter size of 2. What is the output volume?

32x32x8

15x15x16

16x16x16

16x16x8

8。第 8 个问题

Because pooling layers do not have parameters, they do not affect the backpropagation (derivatives) calculation.

True

False

9。第 9 个问题

In lecture we talked about "parameter sharing" as a benefit of using convolutional networks. Which of the following statements about parameter sharing in ConvNets are true? (Check all that apply.)

It allows gradient descent to set many of the parameters to zero, thus making the connections sparse.

It allows a feature detector to be used in multiple locations throughout the whole input image/input volume.

It reduces the total number of parameters, thus reducing overfitting.

It allows parameters learned for one task to be shared even for a different task (transfer learning).

It allows parameters learned for one task to be shared even for a different task (transfer learning).

10。第 10 个问题

In lecture we talked about "sparsity of connections" as a benefit of using convolutional layers. What does this mean?

Regularization causes gradient descent to set many of the parameters to zero.

Each filter is connected to every channel in the previous layer.

Each activation in the next layer depends on only a small number of activations from the previous layer.

Each layer in a convolutional network is connected only to two other layers

我了解不是我自己完成的作业将永远不会通过该课程且我的 Coursera 帐号会被取消激活。