

# The Basics of ConvNets

LATEST SUBMISSION GRADE

80%

1.

Question 1

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

$\begin{bmatrix} 0 & 1 & 1 & 0 & 1 & 3 & 3 & 1 & -1 & -3 & -3 & -1 & 0 & -1 & -1 & 0 \end{bmatrix}$

$\begin{bmatrix} 0 & 1 & 1 & 0 & 1 & 3 & 3 & 1 & -1 & -3 & -3 & -1 & 0 & -1 & -1 & 0 \end{bmatrix}$

1 / 1 point

Correct

2.

Question 2

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)?

1 / 1 point

Correct

3.

Question 3

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)?

1 / 1 point

Correct

4.

Question 4

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?

1 / 1 point

Correct

5.

Question 5

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

0 / 1 point

Incorrect

6.

Question 6

You have an input volume that is  $63 \times 63 \times 16$ , and convolve it with 32 filters that are each  $7 \times 7$ , and stride of 1. You want to use a “same” convolution. What is the padding?

**1 / 1 point**

**Correct**

7.

Question 7

You have an input volume that is  $32 \times 32 \times 16$ , and apply max pooling with a stride of 2 and a filter size of 2. What is the output volume?

**1 / 1 point**

**Correct**

8.

Question 8

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

**1 / 1 point**

**Correct**

9.

Question 9

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.)

**1 / 1 point**

**Correct**

10.

Question 10

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

**0 / 1 point**

**Incorrect**