QUIZ • 30 MIN

The basics of ConvNets

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The basics of ConvNets

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1. What do you think applying this filter to a grayscale image will do? **1 / 1 point**

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

Correct

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. 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. 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. You have an input volume that is 15x15x8, and pad it using "pad=2." What is the dimension of the resulting volume (after padding)? **1 / 1 point**

Correct

6. 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 / 1 point**

Correct

7. 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? **1 / 1 point**

Correct

8. Because pooling layers do not have parameters, they do not affect the backpropagation (derivatives) calculation. **1 / 1 point**

Correct

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. In lecture we talked about "sparsity of connections" as a benefit of using convolutional layers. What does this mean? **1 / 1 point**

Correct