Deep convolutional models

Quiz, 10 questions

1 point
1.
Which of the following do you typically see as you move to deeper layers in a ConvNet?
$\bigcap n_H$ and n_W increases, while n_C also increases
$\bigcap n_H$ and n_W increases, while n_C decreases
$igcolone{n}_H$ and n_W decrease, while n_C increases
$\bigcap n_H$ and n_W decreases, while n_C also decreases
1 point 2. Which of the following do you typically see in a ConvNet? (Check all that
apply.) Multiple CONV layers followed by a POOL layer
Multiple POOL layers followed by a CONV layer
FC layers in the last few layers
FC layers in the first few layers
1 point

3.

In order to be able to build very deep networks, we usually only use pooling layers to downsize the height/width of the activation volumes while

Deep	CONVOIDE TO THE CONVOIDE TO TH	"valid"	padding.	Otherwise,	we would	downsize
	the input of the model too o	uickly	' _			

Quiz, 10 questior

True



False

1 point

4.

Training a deeper network (for example, adding additional layers to the network) allows the network to fit more complex functions and thus almost always results in lower training error. For this question, assume we're referring to "plain" networks.





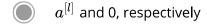
False

1 point

5.

The following equation captures the computation in a ResNet block. What goes into the two blanks above?

$$a^{[l+2]} = g(W^{[l+2]}g(W^{[l+1]}a^{[l]} + b^{[l+1]}) + b^{l+2} +$$
_____) + _____



$$\bigcirc \hspace{0.5cm} 0$$
 and $z^{[l+1]}$, respectively

$$z^{[l]}$$
 and $a^{[l]}$, respectively

$$\bigcirc$$
 0 and $a^{[l]}$, respectively

6.

Which ones of the following statements on Residual Networks are true? Deep convolutional models

•	(concent am areas appropri
Quiz, 10 questions	The skip-connections compute a complex non-linear function of the input to pass to a deeper layer in the network.
	The skip-connection makes it easy for the network to learn an identity mapping between the input and the output within the ResNet block.
	A ResNet with L layers would have on the order of L^2 skip connections in total.
	Using a skip-connection helps the gradient to backpropagate and thus helps you to train deeper networks
	1 point
	7.
	Suppose you have an input volume of dimension 64x64x16. How many parameters would a single 1x1 convolutional filter have (including the bias)?
	<u> </u>
	17
	4097
	2
	1 point
	8.
	Suppose you have an input volume of dimension $n_H \times n_W \times n_C$. Which of the following statements you agree with? (Assume that "1x1 convolutional layer" below always uses a stride of 1 and no padding.)
	You can use a 1x1 convolutional layer to reduce n_C but not n_H , n_W .
	You can use a pooling layer to reduce n_{xx} n_{xy} and n_{xy}

Deep convo	You can use a pooling layer to reduce n_H , n_W , but not n_C . lutional models
Quiz, 10 questions	You can use a 1x1 convolutional layer to reduce n_H , n_W , and n_C .
	9. Which ones of the following statements on Inception Networks are true? (Check all that apply.) Inception networks incorporates a variety of network architectures (similar to dropout, which randomly chooses a network architecture on each step) and thus has a similar regularizing effect as dropout. A single inception block allows the network to use a combination
	of 1x1, 3x3, 5x5 convolutions and pooling.
	Making an inception network deeper (by stacking more inception blocks together) should not hurt training set performance.
	Inception blocks usually use 1x1 convolutions to reduce the input data volume's size before applying 3x3 and 5x5 convolutions.
	1 point
	10. Which of the following are common reasons for using open-source implementations of ConvNets (both the model and/or weights)? Check all that apply.
	The same techniques for winning computer vision competitions, such as using multiple crops at test time, are widely used in practical deployments (or production system deployments) of ConvNets.
	A model trained for one computer vision task can usually be used to perform data augmentation even for a different computer vision task.

It is a convenient way to get working an implementation of a complex ConvNet architecture.

Submit Quiz

Quiz, 10 questions	Parameters trained for one computer vision task are often useful as pretraining for other computer vision tasks.
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