축하합니다! 통과하셨습니다!

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다음 항목으로 이동

1. When building a ConvNet, typically you start with some POOL layers followed by some CONV layers. True/False? 1 / 1점

- False
- True

더 보기

맞습니다
Correct. It is typical for ConvNets to use a POOL layer after some Conv layers; sometimes even one POOL layer after each CONV layer; but is not common to start with POOL layers.

2. LeNet - 5 made extensive use of padding to create valid convolutions, to avoid increasing the number of channels after every convolutional layer. True/False? 1 / 1점

- True
- False

더 보기

맞습니다
Yes, back in 1998 when the corresponding paper of LeNet - 5 was written padding wasn't used.

3. The motivation of Residual Networks is that very deep networks are so good at fitting complex functions that when training them we almost always overfit the training data. True/False? 1 / 1점

- True
- False

더 보기

맞습니다
Correct, very deep neural networks are hard to train and a deeper network does not always imply lower training error. Residual Networks allow us to train very deep neural networks.

4. The following equation captures the computation in a ResNet block. What goes into the two blanks above? 1 / 1점

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

- $z^{[l]}$ and $a^{[l]}$, respectively
- $a^{[l]}$ and 0, respectively
- 0 and $a^{[l]}$, respectively
- 0 and $z^{[l+1]}$, respectively

더 보기

맞습니다
Correct

5. In the best scenario when adding a ResNet block it will learn to approximate the identity function after a lot of training, helping improve the overall performance of the network. True/False? 1 / 1점

- True
- False

더 보기

맞습니다
Correct. When adding a ResNet block it can easily learn to approximate the identity function, thus in a worst-case scenario, it will not affect the performance of the network at all.

6. For a volume of $125 \times 125 \times 64$ which of the following can be used to reduce this to a $125 \times 125 \times 32$ volume? 1 / 1점

- Use a 1×1 convolutional layer with a stride of 2, and 32 filters.
- Use a 1×1 convolutional layer with a stride of 1, and 32 filters.
- Use a POOL layer of size 2×2 with a stride of 2.
- Use a POOL layer of size 2×2 but with a stride of 1.

더 보기

맞습니다
Yes, since using 1×1 convolutions is a great way to reduce the depth dimension without affecting the other dimensions.

7. Which ones of the following statements on Inception Networks are true? (Check all that apply.) 1 / 1점

- [ ] Making an inception network deeper (by stacking more inception blocks together) might not hurt training set performance.
- [x] Inception blocks usually use 1x1 convolutions to reduce the input data volume's size before applying 3x3 and 5x5 convolutions.

✓ Correct

☐ Inception networks incorporate 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.

✓ Correct

더 보기

맞습니다
Great, you got all the right answers.

8. Parameters trained for one computer vision task can't be used directly in another task. In most cases, we must change the softmax layer, or the last layers of the model and re-train for the new task. True/False? 1 / 1점

○ False

◉ True

더 보기

맞습니다
Yes, this is a good way to take advantage of open-source models trained more or less for the task you want to do. This may also help you save a great number of computational resources and data.

9. Which of the following are true about Depth wise-separable convolutions? (Choose all that apply) 1 / 1점

☐ The result has always the same number of channels n_c as the input.

☑ They combine depthwise convolutions with pointwise convolutions.

✓ Correct
Correct, this combination is what we call depth wise separable convolutions.

☑ They have a lower computational cost than normal convolutions.

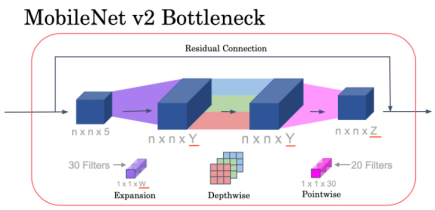
✓ Correct
Yes, as seen in the lectures the use of the depthwise and pointwise convolution reduces the computational cost significantly.

☐ They are just a combination of a normal convolution and a bottleneck layer.

더 보기

맞습니다
Great, you got all the right answers.

10. Fill in the missing dimensions shown in the image below (marked W, Y, Z). 1 / 1점



○ W = 30, Y = 20, Z =20

◉ W = 5, Y = 30, Z = 20

○ W = 30, Y = 30, Z = 5

○ W = 5, Y = 20, Z = 5

더 보기

맞습니다