- **Case Studies**
- **Practical Advice for Using ConvNets**
- **Lecture Notes (Optional)**
- **Quiz**
  - **테스트:** Deep Convolutional Models
    10개의 질문
- **Programming Assignments**

테스트테스트 • 30 min30 minutes

Deep Convolutional Models

과제 제출
기한년 8월 30일 오후 3:59 KST년 8월 30일 오후 3:59 KST

시도하기8 hours당 3회
다시 시도해주십시오

성적 받기
통과 점수:80% 이상
성적
100%
피드백 보기
최고 점수가 유지됩니다.

탐색 확인

이 페이지에서 나가시겠습니까?
이 페이지에 머물기 이 페이지에서 나가기

Deep Convolutional Models
성적 평가 퀴즈 • 30 min

만료 년 8월 30일 오후 3:59 KST

축하합니다! 통과하셨습니다!
통과 점수: 80% 이상
학습 계속하기
성적
100%

Deep Convolutional Models

최신 제출물 성적
100%
1.
질문 1

Which of the following do you typically see in a ConvNet? (Check all that apply.)

1 / 1점

Multiple CONV layers followed by a POOL layer

맞습니다

True, as seen in the case studies.

FC layers in the last few layers

맞습니다

True, fully-connected layers are often used after flattening a volume to output a set of classes in classification.

Multiple POOL layers followed by a CONV layer

FC layers in the first few layers

2.
질문 2

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 convolutions are used with “valid” padding. Otherwise, we would downsize the input of the model too quickly.

1 / 1점

True

◉○

False

✓

맞습니다

Correct!

3.
질문 3

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.

1 / 1점

◉○

False

○○

True

✓

맞습니다

Correct, Resnets are here to help us train very deep neural networks.

4.
질문 4

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

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

1 / 1점

○○

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

◉○

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

○○

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

○○

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

✓

맞습니다

Correct

5.
질문 5

Which ones of the following statements on Residual Networks are true? (Check all that apply.)

1 / 1점

☐☐

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.

✓

맞습니다

This is true.

☐☐

A ResNet with L layers would have on the order of L^2L2 skip connections in total.

☑☐

Using a skip-connection helps the gradient to backpropagate and thus helps you to train deeper networks

맞습니다

This is true.

6.
질문 6

Suppose you have an input volume of dimension n_HnH x n_WnW x n_CnC. Which of the following statements you agree with? (Assume that "1x1 convolutional layer" below always uses a stride of 1 and no padding.)

1 / 1점

☑ □

You can use a 2D pooling layer to reduce n_HnH, n_WnW, but not n_CnC.

맞습니다

This is correct.

☑ □

You can use a 1x1 convolutional layer to reduce n_CnC but not n_HnH, n_WnW.

맞습니다

Yes, a 1x1 convolutional layer with a small number of filters is going to reduce n_CnC but will keep the dimensions n_HnH and n_WnW

☐ □

You can use a 2D pooling layer to reduce n_HnH, n_WnW, and n_CnC.

☐ □

You can use a 1x1 convolutional layer to reduce n_HnH, n_WnW, and n_CnC.

7.
질문 7

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

1 / 1점

☑ □

Inception blocks usually use 1x1 convolutions to reduce the input data volume's size before applying 3x3 and 5x5 convolutions.

맞습니다

☐ □

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.

☐ □

Making an inception network deeper (by stacking more inception blocks together) *might* not hurt training set performance.

☑ □

A single inception block allows the network to use a combination of 1x1, 3x3, 5x5 convolutions and pooling.

맞습니다
8.
질문 8

Which of the following are common reasons for using open-source implementations of ConvNets (both the model and/or weights)? Check all that apply.

1 / 1점

☑ □

Parameters trained for one computer vision task are often useful as pretraining for other computer vision tasks.

맞습니다

True

☐

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 with an implementation of a complex ConvNet architecture.

✓
맞습니다

True

☐

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.

9.
질문 9

In Depthwise Separable Convolution you:

1 / 1점

☐

For the “Depthwise” computations each filter convolves with all of the color channels of the input image.

☑

The final output is of the dimension n_{out}nout x n_{out}nout x $n_c^{'}$nc′ (*where* $n_c^{'}$*nc′ is the number of filters used in the previous convolution step*).

✓
맞습니다

☑

You convolve the input image with $n_c$nc number of $n_f$nf x $n_f$nf filters (*$n_c$nc is the number of color channels of the input image*).

✓
맞습니다

☑

Perform two steps of convolution.

✓
맞습니다

☐

You convolve the input image with a filter of $n_f$nf x $n_f$nf x $n_c$nc where $n_c$nc acts as the depth of the filter (*$n_c$nc is the number of color channels of the input image*).

☐

The final output is of the dimension n_{out}nout x n_{out}nout x $n_c$nc (*where $n_c$nc is the number of color channels of the input image*).

☐

Perform one step of convolution.

☑

For the “Depthwise” computations each filter convolves with only one corresponding color channel of the input image.

✓
맞습니다
10.
질문 10

Fill in the missing dimensions shown in the image below (*marked W, Y, Z*).

1 / 1점

○

W = 5, Y = 20, Z = 5

○

W = 30, Y = 20, Z =20

○

W = 30, Y = 30, Z = 5

◉ ○

W = 5, Y = 30, Z = 20

✓

맞습니다