축하합니다! 통과하셨습니다!

받은 학점 90% 최신 제출물 학점 90% 통과 점수: 80% 이상

다음 항목으로 이동

1. Face verification and face recognition are the two most common names given to the task of comparing a new picture against one person's face. True/False? 1 / 1점

- (•) False
- ( ) True

더 보기

맞습니다
Correct. This is the description of face verification, but not of face recognition.

2. You want to build a system that receives a person's face picture and determines if the person is inside a workgroup. You have pictures of all the faces of the people currently in the workgroup, but some members might leave, and some new members might be added. Which of the following do you agree with? 1 / 1점

- [x] It will be more efficient to learn a function $d(\text{img}_1, \text{img}_2)$ for this task.

  Correct
  Correct. Since this is a one-shot learning task this function will allow us to compare two images to verify identity.
- [ ] This can't be considered a one-shot learning task since there might be many members in the workgroup.
- [x] This can be considered a one-shot learning task.

  Correct
  Correct. Since we might have only one example of the person we want to recognize.
- [ ] It is best to build a convolutional neural network with a softmax output with as many outputs as members of the group.

더 보기

맞습니다
Great, you got all the right answers.

3. You want to build a system that receives a person's face picture and determines if the person is inside a workgroup. You have pictures of all the faces of the people currently in the workgroup, but some members might leave, and some new members might be added. To train a system to solve this problem using the triplet loss you get many persons and take several pictures of each one. Which of the following do you agree with? (Select the best answer.) 1 / 1점

- ( ) You shouldn't use persons outside the workgroup you are interested in because that might create a high variance in your model.
- ( ) It would be best to increase the number of persons in the dataset by taking only one picture of each person to have a more representative set of the population.
- (•) You take several pictures of the same person to train $d(\text{img}_1, \text{img}_2)$ using the triplet loss.
- ( ) You take several pictures of the same person because this way you can get more pictures to train the network efficiently since you already have the person in place.

더 보기

맞습니다
Correct. To train using the triplet loss you need several pictures of the same person.

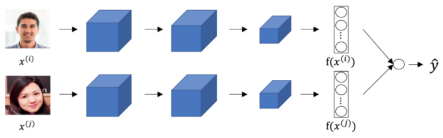
4. Which of the following is a correct definition of the triplet loss? Consider that $\alpha > 0$. (We encourage you to figure out the answer from first principles, rather than just refer to the lecture.) 1 / 1점

- (•) $max(||f(A) - f(P)||^2 - ||f(A) - f(N)||^2 + \alpha, 0)$
- ( ) $max(||f(A) - f(N)||^2 - ||f(A) - f(P)||^2 - \alpha, 0)$
- ( ) $max(||f(A) - f(N)||^2 - ||f(A) - f(P)||^2 + \alpha, 0)$
- ( ) $max(||f(A) - f(P)||^2 - ||f(A) - f(N)||^2 - \alpha, 0)$

더 보기

맞습니다
Correct

5. Consider the following Siamese network architecture: 0 / 1점



Which of the following do you agree with the most?

- ( ) This depicts two "different" neural networks with different architectures, although we use the same drawing.
- ( ) The two neural networks depicted in the image have the same architecture, but they might have different parameters.
- (•) Although we depict two neural networks and two images, the two images are combined in a single volume and pass through a single neural network.
- ( ) The upper and lower neural networks depicted have exactly the same parameters, but the outputs are computed independently for each image.

더 보기

틀립니다
We pass each image through the same neural network in a separate way since the values of the first image don't affect the output from passing the second image through the network, and the other way around.

6. You train a ConvNet on a dataset with cats, dogs, birds, and other types of animals. You try to find a filter that strongly responds to horizontal edges. You are more likely to find this filter in layer 6 of the network than in layer 1. True/False? 1 / 1점

False

True

더 보기

맞습니다
Correct. Edges are a very low-level feature, thus it is more likely to find such a feature detector in the first layers of the network.

7. In neural style transfer, we train the pixels of an image, and not the parameters of a network. 1 / 1점

False

True

더 보기

맞습니다
Correct. Neural style transfer compares the high-level features of two images and modifies the pixels of one of them in order to look artistic.

8. In neural style transfer, we define style as: 1 / 1점

The correlation between the activation of the content image C and the style image S.

The correlation between the generated image G and the style image S.

$\left\|a^{[l](S)} - a^{[l](G)}\right\|^2$ the distance between the activation of the style image and the content image.

The correlation between activations across channels of an image.

더 보기

맞습니다
Correct, this correlation is represented by $G_{kk'}^{[l](I)}$ for the image I.

9. In neural style transfer, we can't use gradient descent since there are no trainable parameters. True/False? 1 / 1점

True

False

더 보기

맞습니다
Correct. We use gradient descent on the cost function $J(G)$ and we update the pixel values of the generated image G.

10. You are working with 3D data. You are building a network layer whose input volume has size 32x32x32x16 (this volume has 16 channels), and applies convolutions with 32 filters of dimension 3x3x3x16 (no padding, stride 1). What is the resulting output volume? 1 / 1점

30x30x30x32

Undefined: This convolution step is impossible and cannot be performed because the dimensions specified don't match up.

30x30x30x16

더 보기

맞습니다
Correct, you have used the formula $\lfloor \frac{n^{[l-1]} - f + 2 \times p}{s} \rfloor + 1 = n^{[l]}$ over the three first dimensions of the input data.