Congratulations! You passed!

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1. Face verification requires comparing a new picture against one person's face, whereas face recognition requires comparing a new picture against K persons' faces. 1 / 1 point

- False
- True

Expand

Correct
Correct.

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 / 1 point

- [ ] It is best to build a convolutional neural network with a softmax output with as many outputs as members of the group.
- [ ] This can't be considered a one-shot learning task since there might be many members in the workgroup.
- [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.

- [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.

Expand

Correct
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 must collect pictures of different faces from only the current members of the team. True/False? 1 / 1 point

- True
- False

Expand

Correct
Correct. Although it is necessary to have several pictures of the same person, it is not absolutely necessary that all the pictures only come from current members of the team.

4. In the triplet loss: 1 / 1 point

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

Which of the following are true about the triplet loss? Choose all that apply.

- [x] $f(A)$ represents the encoding of the Anchor.

  Correct
  Correct. f represents the network that is in charge of creating the encoding of the images, and A represents the anchor image.

- [ ] A the anchor image is a hyperparameter of the Siamese network. images.

  Correct
  Correct. Being a positive image the encoding of P

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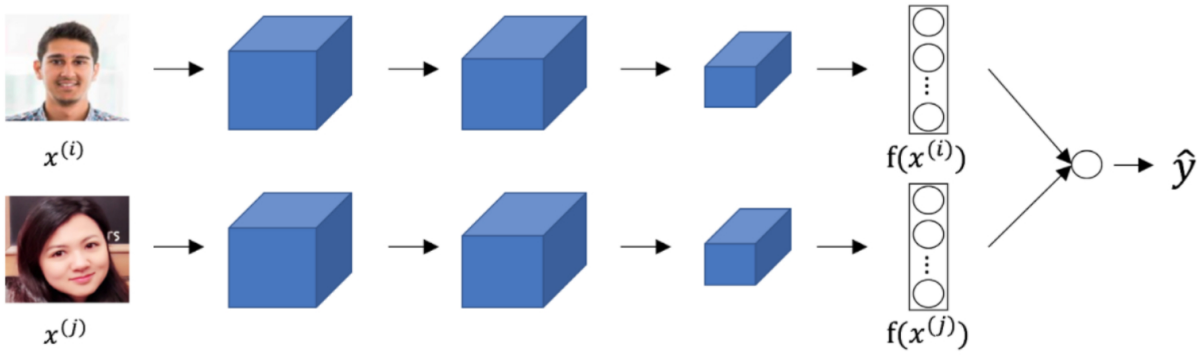
Expand

Correct
Great, you got all the right answers.

5. Consider the following Siamese network architecture: 1 / 1 point



The upper and lower neural networks have different input images, but have exactly the same parameters.

- (•) True
- ( ) False

Expand

Correct
Yes it is true, parameters are shared among these two networks.

6. Our intuition about the layers of a neural network tells us that units that respond more to complex features are more likely to be in deeper layers. True/False? 1 / 1 point

- False
- True

Expand

Correct
Correct. Neurons that understand more complex shapes are more likely to be in deeper layers of a neural network.

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

- True
- False

Expand

Correct
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 the deeper layers of a ConvNet, each channel corresponds to a different feature detector. The style matrix $G^{[l]}$ measures the degree to which the activations of different feature detectors in layer l vary (or correlate) together with each other. 1 / 1 point

- False
- True

Expand

Correct
Yes, the style matrix $G^{[l]}$ can be seen as a matrix of cross-correlations between the different feature detectors.

9. In neural style transfer, what is updated in each iteration of the optimization algorithm? 1 / 1 point

- The pixel values of the generated image G
- The pixel values of the content image C

- The regularization parameters
- The neural network parameters

Expand

Correct
Yes, neural style transfer is different from many of the algorithms you've seen up to now, because it doesn't learn any parameters; instead it learns directly the pixels of an image.

10. You are working with 3D data. The input "image" has size $32 \times 32 \times 32 \times 3$, if you apply a convolutional layer with 16 filters of size $4 \times 4 \times 4$, zero padding and stride 1. What is the size of the output volume? **1 / 1 point**

- $29 \times 29 \times 29 \times 3$.
- $29 \times 29 \times 29 \times 13$.
- $29 \times 29 \times 29 \times 16$.
- $31 \times 31 \times 31 \times 16$.

Expand

Correct
Correct, we can use the formula $\lfloor \frac{n^{[l-1]} - f + 2 \times p}{s} \rfloor + 1 = n^{[l]}$ on the three first dimensions.