Congratulations! You passed!

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1. Which of the following do you agree with? **1 / 1 point**

Expand

Correct
Correct, in face recognition we compare the face of one person to K to classify the face as one of those K or not.

2. Why do we learn a function $d(img1, img2)$ for face verification? (Select all that apply.) **1 / 1 point**

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**

↙↗ **Expand**

✓ **Correct**

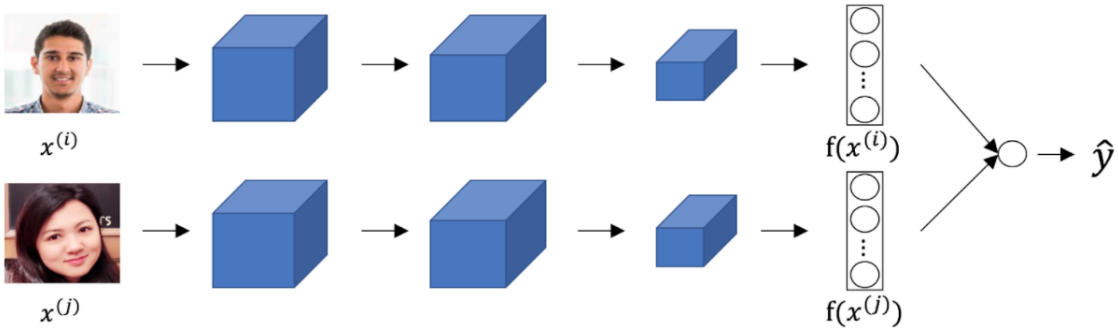
Correct. Although it is necessary to have several pictures of the same person, it is not absolutely necessary that all the pictures only come from current members of the team.

4. 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 / 1 point**

↙↗ **Expand**

Correct
Correct

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



The upper and lower networks share parameters to have a consistent encoding for both images. True/False?

Expand

Correct
Correct. Part of the idea behind the Siamese network is to compare the encoding of the images, thus they must be consistent.

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? **0 / 1 point**

Expand

Incorrect

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**

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**

↙↗ **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, we can't use gradient descent since there are no trainable parameters. True/False? **1 / 1 point**

↙↗ **Expand**

✓ **Correct**
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. 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

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.