

✔ Congratulations! You passed!

Grade received 100% To pass 80% or higher

Go to next item

1. Assume that your objective is to minimize the transformation of X as similar to Y as possible, what would you optimize to get R? ($XR \approx Y$)

1 / 1 point

- ☒ Minimize the distance between XR and Y
- ☐ Maximize the distance between XR and Y
- ☐ Minimize the dot product between XR and Y
- ☐ Maximize the dot product between XR and Y

✔ Correct
This is correct.

2. When solving for R, which of the following is true?

1 / 1 point

- ☐ Create a forloop, inside the forloop: (initialize R, compute the gradient, update the loss
- ☐ Create a forloop, inside the forloop: (initialize R, update the loss, compute the gradient.
- ☒ Initialize R, create a forloop, inside the forloop: (compute the gradient, update the loss)
- ☐ Initialize R, compute the gradient, create a forloop, inside the forloop: (update the loss)

✔ Correct
This is correct.

3. The Frobenius norm of $A = \begin{pmatrix} 1 & 3 \\ 4 & 5 \end{pmatrix}$ is

1 / 1 point

(Answer should be in 2 decimal places)

7.14

✔ Correct
7.14

4. Assume $X \in R^{m \times n}$, $R \in R^{n \times n}$, $Y \in R^{m \times n}$ which of the following is the gradient of $\|XR - Y\|_F^2$?

1 / 1 point

- ☒ $\frac{2}{m} X^T (XR - Y)$
- ☐ $\frac{2}{m} X (XR - Y)$
- ☐ $\frac{2}{m} (XR - Y) X$
- ☐ $\frac{2}{m} (XR - Y) X^T$

✔ Correct
This is correct.

5. Imagine that you are visiting a city in the US. If you search for friends that are living in the US, would you be able to determine the 2 closest of ALL your friends around the world?

1 / 1 point

- ☐ Yes, because I am already in the country and that implies that my closest friends are also going to be in the same country.
- ☒ No

✔ Correct
This is correct.

6. What is the purpose of using a function to hash vectors into values?

1 / 1 point

☒ To speed up the time it takes when comparing similar vectors.

☒ **Correct**
This is correct.

☒ To not have to spend time comparing vectors with other vectors that are completely different.

☒ **Correct**
This is correct.

☐ To make the search for other similar vectors more accurate.

☐ It helps us create vectors.

7. Given the following vectors, determine the true statements.

1 / 1 point

$$P: \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

$$V_1: \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

$$V_2: \begin{bmatrix} 2 \\ 2 \end{bmatrix}$$

$$V_3: \begin{bmatrix} -1 \\ -1 \end{bmatrix}$$

☒ PV_1^T and PV_2^T have the same sign.

☐ PV_1^T and PV_2^T are equal in magnitude.

☐ PV_1^T and PV_3^T have the same sign.

☒ **Correct**
Correct

8. We define H to be the number of planes and h_i to be 1 or 0 depending on the sign of the dot product with plane i . Which of the following is the equation used to calculate the hash for several planes.

1 / 1 point

☒ $\sum_i^H 2^i h_i$

☐ $\sum_i^H 2^i h_i^i$

☐ $\sum_i^H 2i h_i$

☐ $\sum_i^H 2^{h_i} i$

☒ **Correct**
Correct.

9. How can you speed up the look up for similar documents.

1 / 1 point

☐ PCA

☒ Approximate Nearest Neighbors

☒ **Correct**
This is correct.

☐ K-Means

☒ Locality sensitive hashing

☒ **Correct**
This is correct.

10. Hash tables are useful because

1 / 1 point

☒ allow us to divide vector space to regions.



Correct

This is correct.

☒ speed up look up



Correct

This is correct.

☐ classify with higher accuracy

☒ can always be reproduced



Correct

You will always hash the same vector to the same bucket with the same hash function.