CSPB 4622 - Truong - Machine Learning

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Time taken	1 min 56 secs
Marks	21.00/21.00
Grade	**10.00** out of 10.00 (**100**%)

Question **1**

Correct

Mark 5.00 out of 5.00

The various phenomena that might arise during analysis of data in high dimensional space.

Select one or more:

☑ a. The data might become more and more sparser ✔

☐ b. The model trained using high dimensional is likely to underfit

☐ c. High dimensional data tend to become more independent of other dimensions.

☑ d. High dimensional data tend to become more redundant (correlated) ✔

☑ e. The model trained using high dimensional is likely to overfit ✔

> Your answer is correct.
>
> The correct answers are: The data might become more and more sparser, The model trained using high dimensional is likely to overfit, High dimensional data tend to become more redundant (correlated)

Question **2**

Correct

Mark 5.00 out of 5.00

Which of the following can be a method to choose principal components in PCA?

Select one or more:

- ☑ a. The components that preserve maximum variance   ✔

- ☐ b. Choosing axis that maximizes mean squared distance between the original dataset and its projection onto axis

- ☐ c. The components that preserve least variance

- ☑ d. Choosing axis that minimizes mean squared distance between the original dataset and its projection onto axis   ✔

> Your answer is correct.
>
> The correct answers are: The components that preserve maximum variance, Choosing axis that minimizes mean squared distance between the original dataset and its projection onto axis

Question **3**

Correct

Mark 5.00 out of 5.00

Let the data be reduced to 50 dimensions using PCA (from dimensional space greater than 50). Which of the following statements are **true**?

Select one or more:

- ☑ a. The variance captured by 10th principal component is greater compared to that of 19th principal component.   ✔

- ☑ b. The variance captured by 3rd principal component is greater compared to that of 47th principal component.   ✔

- ☐ c. The variance captured by 3rd principal component is lesser compared to that of 47th principal component.

- ☑ d. The variance captured by 16th principal component is greater compared to that of 19th principal component.   ✔

> Your answer is correct.
>
> The correct answers are: The variance captured by 3rd principal component is greater compared to that of 47th principal component., The variance captured by 10th principal component is greater compared to that of 19th principal component., The variance captured by 16th principal component is greater compared to that of 19th principal component.

Question **4**

Correct

Mark 3.00 out of 3.00

PCA is a linear feature extraction technique, performing a linear mapping of data to a lower-dimensional space.

Select one:

◉ True ✔

◯ False

The correct answer is 'True'.

Question **5**

Correct

Mark 3.00 out of 3.00

The main purpose of Unsupervised Learning is to predict either a continuous variable or a discrete variable.

Select one:

◯ True

◉ False ✔

The correct answer is 'False'.