⚠ Try again once you are ready

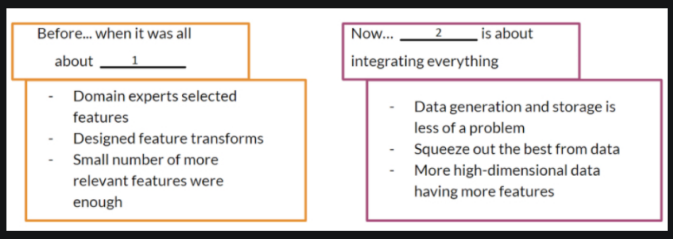
Grade received 66.66% To pass 80% or higher

Try again

Dimensionality Reduction

Total points 6

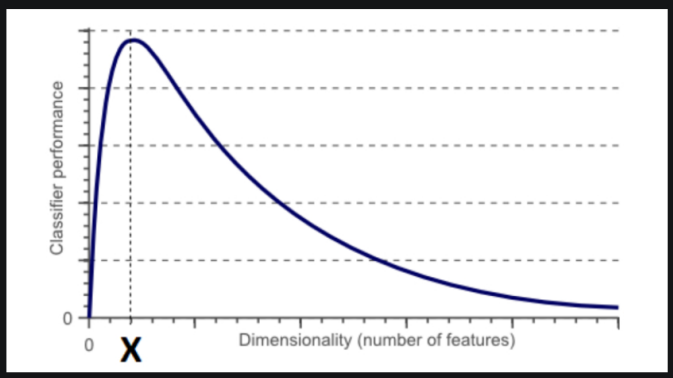
1. Fill in the blanks with the correct answer according to the descriptions in the boxes below: **0 / 1 point**



- ○ 1. Data mining. 2. Data Science.
- ◉ 1. Dimensionality reduction. 2. Data Science.
- ○ 1. Data mining. 2. Dimensionality reduction.
- ○ 1. Data Science. 2. Data mining.

✗ Incorrect
Sorry, but you're only half right. Blank 1 refers to the recent past in which data generation and data storage were a lot more costly, so the focus was on data mining. Today, nonetheless, data science involves more data transformation and processing steps such as dimensionality reduction.

2. What does the X value represent? **0 / 1 point**



- ○ The worst number of features for making predictions.
- ◉ The cursed number of dimensions.
- ○ The optimal number of features.
- ○ The number of features that reaches the maximum classification error.

✗ Incorrect
Sorry, no. The curse of dimensionality is a broad concept that encompasses the many issues that occur when dealing with high-dimensional data, especially those regarding separability, sparsity, and the amount of data.

3. Which of the following are problems of high dimensionality in model performance? (Select all that apply) **1 / 1 point**

- ☑ Solutions take longer to reach global optimum

✓ Correct
Right on track! Very often, reaching a global optimum is a more difficult task when dealing with high-dimensional problems.

- [ ] Smaller hypothesis space.
- [x] Higher runtimes and system requirements

Correct
Correct! The more dimensions, the higher the system requirements. Therefore, dimensionality reduction helps optimize the system's performance.

- [x] The possibility of more correlated features is greater.

Correct
You've got it! When having more dimensions, it is possible to have more correlated features making the selection of the most relevant features a more difficult task.

4. What does the following line of code refer to? count_params(model_n.trainable_variables) **1 / 1 point**

- ○ The number of testing parameters for Model n.
- ○ The number of dimensions for Model n.
- ◉ The number of training parameters for Model n.
- ○ The number of classes for Model n.

Correct
That's right! This code line allows to count the number of training parameters for the input model.

5. The amount of training data available, the complexity of the decision surface, and the classifier type define the number of _____ to be used **1 / 1 point**

- ○ Spaces
- ○ Models
- ○ Datasets
- ◉ Features

Correct
That's right! These three aspects define the amount of features that will be used in a machine learning problem.

6. True Or False: Classification subspaces allow to minimize separation among classes, while regression subspaces are used for maximizing correlation between projected data and response variable. **1 / 1 point**

- ○ True
- ◉ False

Correct
That's right! Classification subspaces maximize the separation among classes, while regression intends to maximize the correlation between two variables.