

DM-Spring-2020-Q6-Grade

89.47% (17/19)

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- ✓ 1. KNN is
- ☒ A data-driven method
 - ☐ B model-driven method
 - ☐ C I do not know
- ✓ 2. The dependent variable of the classification is
- ☒ A categorical
 - ☐ B numeric
 - ☐ C I do not know
- ✓ 3. KNN can be used for regression
- ☒ A Yes
 - ☐ B No
 - ☐ C I do not know
- ✓ 4. In the case of KNN classification we use
- ☐ A average of outcomes
 - ☒ B majority voting scheme
 - ☐ C I do not know
- ✓ 5. Which of these errors will increase constantly by increasing k?
- ☒ A train error
 - ☐ B test error
 - ☐ C both
 - ☐ D I do not know

✓ 6. This function can be used to perform KNN classification in R

- ☒ A knn()
- ☐ B k_nn()
- ☐ C knnreg()
- ☐ D knearneib()
- ☐ E I do not know

✓ 7. With the increase of k , the decision boundary will be

- ☒ A simplified
- ☐ B more complex
- ☐ C I do not know
- ☐ D unchanged

✓ 8. KNN algorithm is sensitive to outliers

- ☒ A True
- ☐ B False
- ☐ C I do not know

✓ 9. KNN

- ☒ A is a supervised learning algorithm.
- ☐ B is an unsupervised learning algorithm.
- ☐ C I do not know

✓ 10. In the case of small k we have

- ☒ A overfitting
- ☐ B underfitting
- ☐ C it depends on the situation
- ☐ D I do not know

✗ 11. Why do we need scaling in KNN?

- ☐ A to avoid overfitting
- ☐ B to avoid underfitting
- ☐ C to have "equal" weights for variables
- ☐ D I do not know

- ✗ 12. Let $k = n$, (n - number of observations), K-NN is same as
- ☒ A random guessing
 - ☐ B everything will be classified as the most probable class (in total)
 - ☐ C everything will be classified as the least probable class (in total)
 - ☐ D I do not know

- ✓ 13. This function can be used to perform K-NN regression in R
- ☒ A knn.reg
 - ☐ B knnforreg
 - ☐ C regknn
 - ☐ D knnforregression
 - ☐ E I do not know

- ✓ 14. Do you need to worry about scaling with one explanatory variable?
- ☒ A No
 - ☐ B Yes
 - ☐ C I do not know

- ✓ 15. n - the number of observation, m - the number of explanatory variables When $n=k$, $m=1$, the decision boundary for regression is
- ☒ A a line
 - ☐ B a stepwise constant function
 - ☐ C a stepwise quadratic function
 - ☐ D I do not know

- ✓ 16. Which of these algorithms can be used to fill the missing values
- ☐ A KNN for regression
 - ☐ B KNN for classification
 - ☒ C both
 - ☐ D I do not know

- ✓ 17. Which one is better: KNN regression or Linear regression?
- ☐ A KNN outperform LR if the parametric form that has been selected is close to the true linear form
 - ☒ B LR outperform KNN if the parametric form that has been selected is close to the true linear form
 - ☐ C KNN will always outperform the LR
 - ☐ D I do not know
- ✓ 18. Which one is the Disadvantage of KNN?
- ☐ A required assumptions
 - ☐ B cannot be applied for regression
 - ☐ C difficult to perform
 - ☒ D the problem of high dimensional data
 - ☐ E I do not know
- ✓ 19. The best k for train set equals to
- ☒ A 1
 - ☐ B 2
 - ☐ C 0
 - ☐ D I do not know