PS03EMCA38: Machine Learning

Tutorial 2

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Objective/Short Questions

1. _____ machine learning uses labelled training data. _____ machine learning uses un-labelled training data.

2. State True or False: Supervised learning does not require labelled training data.

3. State True or False: The aim of a supervised learning algorithm is to find a mapping function to map the input variable(x) with the output variable(y).

4. State True or False: Class labels are necessary to classify things easily in case of supervised learning.

5. _____ is a kind of supervised learning algorithm popularly used to estimate numerical values based on some independent continuous variables.

6. _____ consists of many decision tree.

(ANN, Random forest, Regression, Perceptron)

7. Decision tree uses a kind of _____ learning.

(Temporary, Smart, Ensemble, Supervised)

8. Random forest uses a kind of _____ learning.

(Temporary, Smart, Ensemble, Supervised)

9. ANN (MLP) uses a kind of _____ learning.

(Temporary, Smart, Ensemble, Supervised)

10. _____ generates multiple hyper planes to divide the data points into various classes based on support vectors.

(Support Vector Machine – SVM)

11. The margin between the support vectors and the hyper plane needs to be _____ for the effective classification.

(As large as possible, As small as possible, Zero, Negative)

12. State True or False: Deep learning models are capable enough to extract features of the input themselves.

13. Deep learning is implemented with the help of _____.

(Neural networks, linear regression, shallow learning, graph mining)

14. The opposite of deep learning is _____.

15. In K nearest neighbourhood, distance between test data and each row of training data can be calculated using _____ distance.

(Euclidean, Connection, K factor, Random)

16. Give an example of supervised learning.

17. Give an advantage of a supervised learning.

18. Give a disadvantage of a supervised learning.

19. Give an advantage of a un-supervised learning.

20. Give a disadvantage of a un-supervised learning.

21. List two broad types/categories of classification.

22. Give an example of a binary classification under supervised learning.

23. Give an example of a multi class classification under supervised learning.

24. Give two examples of classification.

25. Define linear regression.

26. Give an example of positive linear regression.

27. Give an example of negative linear regression.

28. List components of a typical decision tree.

29. Give an example of a decision tree.

30. How a root node is decided for making a decision tree from the training data?

31. Define ensemble learning.

32. Give full form of SVM.

33. Name two models of deep learning.

34. Give full form of GAN.

35. Give full form of CNN.

36. Give full form of RNN.

Big Questions

37. Explain supervised learning in detail by taking an example.

38. Explain un-supervised learning in detail by taking an example.

39. Differentiate supervised and unsupervised learning.

40. Explain linear regression in detail by taking an example.

41. Explain decision tree in detail by taking an example.

OR

42. List and explain steps of designing a decision tree.

43. List and explain steps of k nearest neighbourhood method.

44. Explain SVM in detail.

45. Write a short note on deep learning and its models.