Ensemble Techniques & it's types quiz

7 out of 7 correct

1. What are ensemble techniques in machine learning?

- ○ Techniques used to preprocess data
- ○ Techniques used to evaluate model performance
- ◉ Techniques used to create an ensemble of multiple models and combine their predictions to improve overall performance
- ○ Techniques used for feature selection

Explanation: The correct answer is C. Ensemble techniques in machine learning involve creating multiple models and combining their predictions to improve overall performance.

2. Which of the following is an example of an ensemble technique?

- ○ Decision tree
- ○ Support vector machine
- ◉ Bagging
- ○ Logistic regression

Explanation: The correct answer is C. Bagging is an example of an ensemble technique that involves creating multiple models and combining their predictions.

3. Which of the following is NOT an ensemble technique?

- ◯ Random forest
- ◯ Gradient boosting
- ◉ Support vector machine
- ◯ Stacking

Explanation: The correct answer is C. Support vector machine is not an ensemble technique. It is a type of machine-learning algorithm, not an ensemble technique.

4. Which of the following is an advantage of ensemble techniques?

- ◯ Increased interpretability of models
- ◯ Reduced complexity of models
- ◉ Improved overall performance
- ◯ Faster training time

5. Which of the following is NOT a characteristic of Bagging?

- ◯ Training multiple models
- ◯ Using bootstrapped samples
- ◉ Using the entire dataset for training
- ◯ Combining predictions of multiple models

Explanation: The correct answer is C. Bagging uses bootstrapped samples from the original dataset for training, not the entire dataset.

6. In Bagging, how are the predictions of multiple models combined?

- ◯ By taking the average of the predictions
- ◯ By taking the sum of the predictions
- ◉ By taking the majority vote of the predictions

- By selecting the highest prediction

7. What is the benefit of using bootstrapped samples in Bagging?

- It reduces the complexity of the models
- It increases the interpretability of the models
- It provides diversity in the training data
- It speeds up the training process

Explanation: The correct answer is C. Using bootstrapped samples in Bagging introduces diversity in the training data, as some instances may be repeated and others may be left out, which can help reduce overfitting and improve the ensemble's performance.

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