#1. Which method is commonly used for hyperparameter tuning in machine learning?

☐
Grid Search
☐
Random Search
☐
Gradient Descent
☐
K-Nearest Neighbors (KNN)
☐
Apriori algorithm

#2. What is the purpose of a one-hot encoding in preprocessing categorical data?

☐
Representing categorical variables as binary vectors
☐
Reducing the number of features
☐
Speeding up the training process
☐
Increasing the learning rate
☐
Adding noise to the data

#3. Which technique is used for outlier detection in a dataset?

☐
Isolation Forest
☐
K-Means Clustering

☐
PCA
☐
Linear Regression
☐
Logistic Regression

#4. What is the main objective of the Mean-Shift clustering algorithm?

☐
Identifying dense regions of data points in feature space
☐
Reducing model complexity
☐
Performing image segmentation
☐
Classifying data into predefined categories
☐
Increasing the learning rate

#5. What is the purpose of a loss function in machine learning?

☐
Quantifying the error between predicted and actual values
☐
Determining the number of hidden layers in a neural network
☐
Controlling the number of features in a dataset
☐
Adding non-linearity to the model
☐
Speeding up the training process

#6. In reinforcement learning, what is the role of the discount factor (gamma)?

☐
Balancing immediate rewards against future rewards
☐
Controlling the exploration rate
☐
Reducing model complexity
☐
Controlling the learning rate
☐
Controlling the number of episodes in training

#7. Which method is commonly used for imbalanced classification tasks?

☐
Resampling (e.g., oversampling or undersampling)
☐
Bagging
☐
Feature selection
☐
Principal Component Analysis (PCA)
☐
Random Projection

#8. What is the purpose of the Kullback-Leibler (KL) divergence in information theory?

☐
Measuring the difference between two probability distributions
☐
Classifying data into predefined categories
☐
Speeding up the training process
☐
Reducing model complexity

☐
Adding noise to the data

#9. Which algorithm is commonly used for face recognition in computer vision applications?

☐
Eigenfaces (PCA-based)
☐
Random Forest
☐
Logistic Regression
☐
K-Nearest Neighbors (KNN)
☐
Naive Bayes

#10. What is the primary objective of the Viterbi algorithm in sequence labeling tasks?

☐
Finding the most likely sequence of hidden states in a Hidden Markov Model (HMM)
☐
Performing image classification
☐
Reducing model complexity
☐
Adding non-linearity to the model
☐
Improving the interpretability of the model

#11. What is the purpose of the term “batch size” in deep learning?

☐
The number of training samples processed before updating the model's weights

☐
To control the number of features in a dataset
☐
To add noise to the data
☐
To reduce model complexity
☐
To increase the learning rate

#12. Which technique is used for reducing the dimensionality of high-dimensional data while preserving as much information as possible?

☐
t-SNE (t-Distributed Stochastic Neighbor Embedding)
☐
Random Projection
☐
Singular Value Decomposition (SVD)
☐
Apriori algorithm
☐
K-Means Clustering

#13. What is the purpose of the term “bagging” in ensemble learning?

☐
To combine multiple base models with bootstrap sampling to improve performance
☐
To reduce the learning rate
☐
To add noise to the data
☐
To increase the number of features
☐
To improve the interpretability of the model

#14. Which technique is commonly used for feature selection in machine learning?

☐
Recursive Feature Elimination (RFE)
☐
Principal Component Analysis (PCA)
☐
Support Vector Machines (SVM)
☐
K-Means Clustering
☐
Naive Bayes

#15. Which algorithm is used for anomaly detection in machine learning?

☐
Isolation Forest
☐
Logistic Regression
☐
K-Means Clustering
☐
Decision Trees
☐
Support Vector Machines (SVM)

#16. What is the purpose of the bias term in a neural network?

☐
To shift the activation function to the left or right
☐
To reduce overfitting
☐
To increase model complexity

☐
To regularize the model
☐
To add non-linearity

#17. What is the goal of unsupervised learning?

☐
Discovering hidden patterns or structures in data
☐
Maximizing prediction accuracy
☐
Minimizing model complexity
☐
Minimizing training time
☐
Classifying data into predefined categories

#18. Which method is commonly used to handle missing data in a dataset?

☐
Imputation
☐
Deletion
☐
Ignoring it during training
☐
Normalization
☐
Standardization

#19. What is the purpose of the Adam optimizer in deep learning?

☐
A stochastic gradient descent optimization algorithm

☐
A clustering algorithm
☐
A dimensionality reduction technique
☐
A regularization technique
☐
A feature extraction method

#20. In reinforcement learning, what is the agent’s objective?

☐
To maximize the cumulative reward over time
☐
To minimize the cumulative reward over time
☐
To memorize the training data
☐
To predict future states
☐
To classify data into predefined categories

Next

Results