1. Artificial Intelligence (AI)
Definition: The simulation of human intelligence processes by machines, especially computer systems. It inv
2. Machine Learning (ML)
Definition: A subset of AI that involves training algorithms to learn from and make predictions based on data
3. Deep Learning (DL)
Definition: A subset of machine learning that uses neural networks with many layers (hence “deep”) to analy
4. Supervised Learning
Definition: A type of machine learning where the model is trained on labeled data (input-output pairs) and lea
5. Unsupervised Learning
Definition: A type of machine learning where the model is trained on data without explicit labels. The goal is
6. Reinforcement Learning (RL)
Definition: A type of machine learning where an agent learns by interacting with its environment, receiving fe
7. Neural Networks
Definition: A computational model inspired by the way biological neural networks in the human brain work. It
8. Convolutional Neural Networks (CNNs)
Definition: A type of neural network particularly effective for image processing tasks like object recognition a
9. Recurrent Neural Networks (RNNs)
Definition: A type of neural network designed for sequence data (e.g., time series, language), where the outp
10. Natural Language Processing (NLP)
Definition: A field of AI focused on the interaction between computers and human (natural) languages, enabl
11. Computer Vision
Definition: A field of AI that enables machines to interpret and make decisions based on visual data (e.g., im
12. Transfer Learning
Definition: A machine learning technique where a model trained on one task is reused or fine-tuned for a diff
13. Overfitting and Underfitting
Overfitting: When a model learns the noise in the training data and fails to generalize well to new, unseen da
Underfitting: When a model is too simple to capture the underlying patterns in the data.
14. Gradient Descent
Definition: An optimization algorithm used to minimize the loss function in machine learning by iteratively adj
15. Loss Function
Definition: A function that quantifies how well or poorly a machine learning model’s predictions match the tru
16. Hyperparameters
Definition: Parameters that are set before the learning process begins (e.g., learning rate, number of layers i
17. Activation Function
Definition: A mathematical function applied to the output of each neuron in a neural network to introduce non
18. Backpropagation
Definition: A method used to train neural networks by propagating errors backward from the output layer to t
19. Support Vector Machine (SVM)
Definition: A supervised learning algorithm used for classification and regression tasks. It finds the hyperplan
20. K-Nearest Neighbors (K-NN)
Definition: A simple, instance-based learning algorithm used for classification and regression by finding the n
21. Decision Trees
Definition: A tree-like structure used for decision-making, where each internal node represents a test of a fea
22. Random Forest
Definition: An ensemble learning method that combines multiple decision trees to improve accuracy and prev
23. Clustering
Definition: An unsupervised learning technique used to group similar data points together based on some sim
24. Dimensionality Reduction
Definition: Techniques used to reduce the number of input features in a dataset while preserving essential in
25. Generative Adversarial Networks (GANs)
Definition: A type of neural network architecture consisting of two networks (a generator and a discriminator)
26. Bias and Variance
Bias: The error due to overly simplistic models that make strong assumptions.