Artificial Intelligence (AI): The simulation of human intelligence in machines, enabling them to perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and translation.

AutoML: The process of automating the process of applying machine learning to real-world problems.

Bellman Equation: A fundamental equation in reinforcement learning that expresses the value of a state in terms of the expected future rewards.

Bias: The error due to overly simplistic assumptions in the learning algorithm.

Boosting: A method of converting weak learners into strong learners by building a model from the training data, then creating a second model to correct the errors from the first model.

Bootstrap Aggregating (Bagging): A type of ensemble learning that combines the results of multiple models to get a generalized result.

Chatbot: A software application used to conduct an on-line chat conversation via text or text-to-speech, instead of providing direct contact with a live human agent.

Classification: A type of supervised learning where the goal is to categorize input into two or more classes.

Clustering: An unsupervised learning technique where you organize a dataset into groups with similar characteristics.

Computer Vision: An interdisciplinary field that trains computers to interpret and understand the visual world.

Convolutional Neural Network (CNN): A type of neural network, especially powerful for tasks like image recognition.

Cross-Validation: A resampling procedure used to evaluate machine learning models on a limited data sample.

Deep Learning: A subfield of ML utilizing neural networks with three or more layers, enabling the processing of non-linear features and the performance of complex tasks.

Dimensionality Reduction: The process of reducing the number of input variables in a dataset.

Ensemble Learning: A method in which multiple models are trained to solve the same problem and combined to get better results.

Expert Systems: Computer systems that emulate the decision-making ability of a human expert.

Exploration vs Exploitation: The dilemma in reinforcement learning of whether the agent should try new actions (exploration) or choose the known optimal action (exploitation).

Feature Engineering: The process of selecting and transforming variables when creating a predictive model.

Fuzzy Logic: A mathematical logic that attempts to solve problems by assigning values to an imprecise spectrum of data in order to arrive at the most accurate conclusion possible.

Generative Adversarial Network (GAN): A class of ML designed to generate new data that is similar to some input data.

Grid Search: A method for hyperparameter tuning that performs exhaustively searches through a manually specified subset of the hyperparameter space.

Hyperparameter Tuning: The process of choosing a set of optimal hyperparameters for a learning algorithm.

Machine Learning (ML): A subset of AI that involves the use of algorithms and statistical models to enable machines to improve their performance on a task without being explicitly programmed.

Markov Decision Process (MDP): A mathematical framework for modeling decision making in situations where outcomes are partly random and partly under the control of a decision maker.

Monte Carlo Methods: A statistical technique that allows numerical approximation based on random sampling.

Natural Language Processing (NLP): A field of AI focusing on the interaction between computers and humans using natural language.

Neural Network: A model inspired by the human brain, consisting of interconnected nodes (neurons), used for pattern recognition and learning.

Optical Character Recognition (OCR): The technology used to recognize text inside images, such as scanned documents and photos.

Overfitting: A modeling error that occurs when a function is too closely fit to a limited set of data points.

Policy Gradient Methods: A type of reinforcement learning methods which optimize the policy function directly.

Q-Learning: A model-free reinforcement learning algorithm to learn the value of actions in each state.

Random Search: A method for hyperparameter tuning that samples algorithm configurations from a distribution over the hyperparameter space.

Recurrent Neural Network (RNN): A type of neural network with loops to allow information persistence, useful for sequence prediction like time series or speech recognition.

Regression Analysis: A statistical process for estimating the relationships among variables.

Reinforcement Learning Environment: The world (real or simulated) with which the reinforcement learning agent interacts and learns from.

Reinforcement Learning: A type of ML where an agent learns to make decisions by taking actions in an environment to achieve maximum cumulative reward.

Robotics: The branch of technology that deals with the design, construction, operation, and application of robots.

Semi-Supervised Learning: A middle ground between supervised and unsupervised learning, where the model is trained with a combination of labeled and unlabeled data.

Speech Recognition: The interdisciplinary subfield of computational linguistics that develops methodologies and technologies that enable the recognition and translation of spoken language into text by computers.

State-Action-Reward-State-Action (SARSA): An on-policy reinforcement learning algorithm.

Supervised Learning: A type of ML where the model is trained using labeled data.

Swarm Intelligence: An AI technique based on the collective behavior of decentralized, self-organized systems.

Temporal Difference Learning (TD Learning): A combination of Monte Carlo ideas and dynamic programming (DP) ideas.

Testing Data: The dataset used to evaluate the performance of a model.

Training Data: The dataset used to train the model.

Transfer Learning: The practice of using a pre-trained model on a new, but similar problem.

Underfitting: A modeling error that occurs when a model cannot capture the underlying trend of the data.

Unsupervised Learning: A type of ML where the model is trained using unlabeled data.

Validation Data: The dataset used to tune model parameters and provide an unbiased evaluation of model fit during training.

Variance: The error due to too much complexity in the learning algorithm.