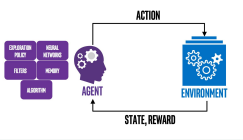
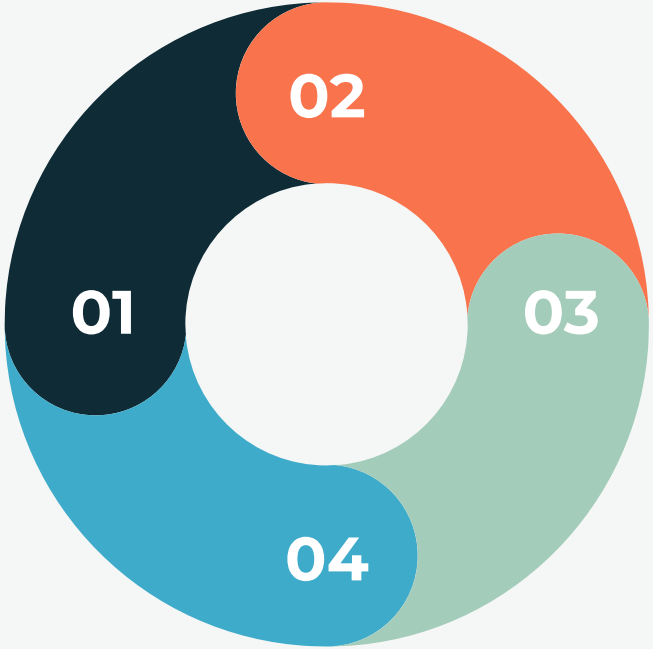


Introduction to Reinforcement Learning

This presentation provides an introduction to reinforcement learning, a type of machine learning paradigm where an agent learns to make decisions by interacting with an environment.

Reinforcement Learning

Reinforcement learning is a type of machine learning paradigm



Actions, outcomes, and learning

Agent learns to make decisions by interacting with an environment

Improving decision-making strategy through trial and error

Agent

- Entity or program that learns to interact with the environment
- Makes decisions based on information and learned policy

Environment

01 Responds to the agent's actions with rewards or penalties

02 External system with which the agent interacts

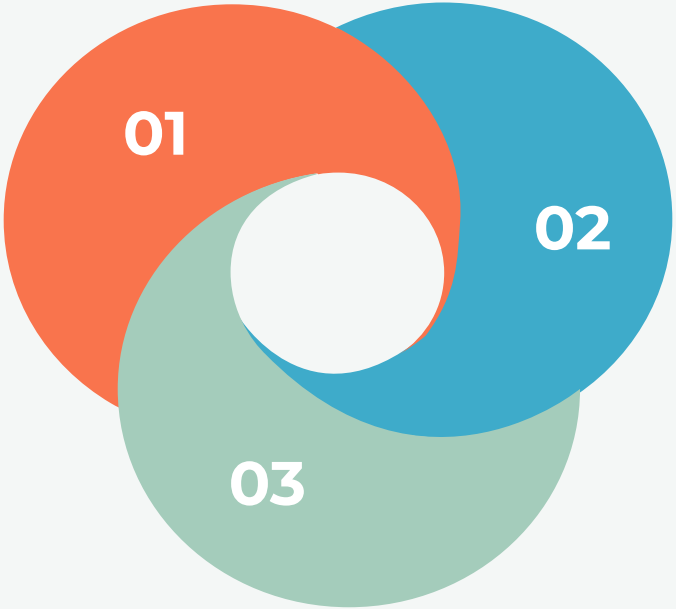
Actions

01 Determines the agent's interactions with the environment

02 Set of possible moves or decisions the agent can take

Rewards

Numeric values provided by the environment as feedback



Indicate how beneficial or detrimental an action was

Agent's goal: maximize cumulative rewards over time

Policy

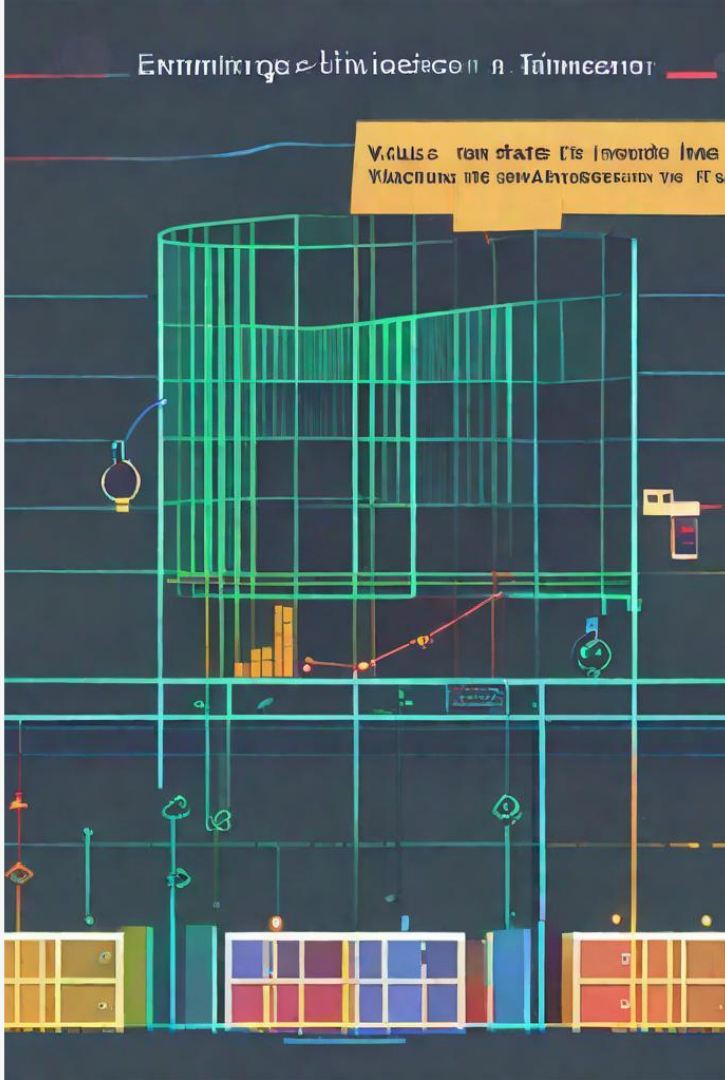
- Strategy or rule that the agent follows to determine its actions
- Based on the current state of the environment
- Learned and improved through experience

Value Function

01 Helps the agent evaluate long-term consequences of actions

02 Function that estimates the expected cumulative reward

03 For a given state or state-action pair



Thank you for your time 😊