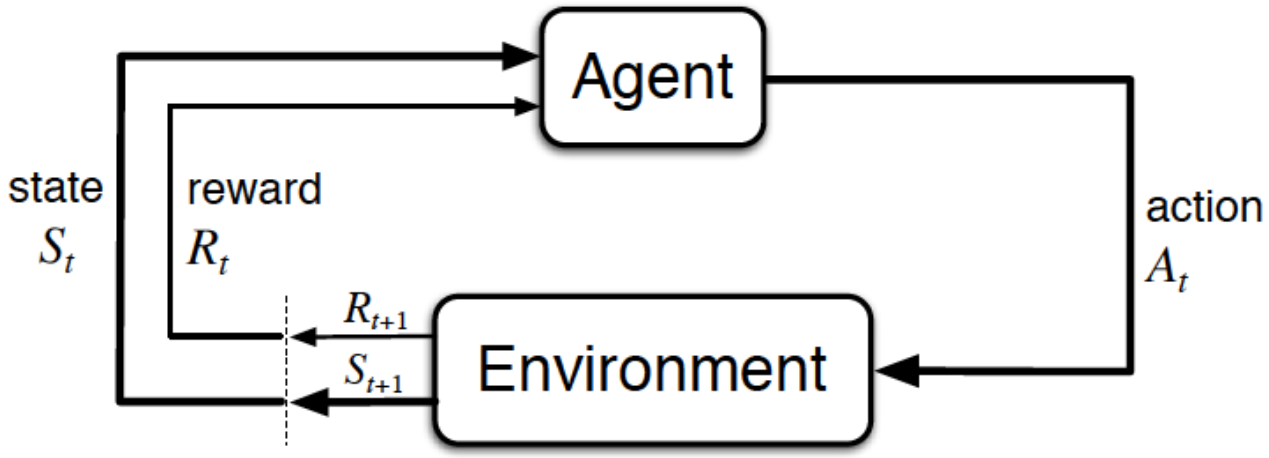
Summary



The agent-environment interaction in reinforcement learning. (Source: Sutton and Barto, 2017)

The Setting, Revisited

- The reinforcement learning (RL) framework is characterized by an **agent** learning to interact with its **environment**.
- At each time step, the agent receives the environment's **state** (*the environment presents a situation to the agent)*, and the agent must choose an appropriate **action** in response. One time step later, the agent receives a **reward** (*the environment indicates whether the agent has responded appropriately to the state*) and a new **state**.
- All agents have the goal to maximize expected **cumulative reward**, or the expected sum of rewards attained over all time steps.

Episodic vs. Continuing Tasks

- A **task** is an instance of the reinforcement learning (RL) problem.
- **Continuing tasks** are tasks that continue forever, without end.
- **Episodic tasks** are tasks with a well-defined starting and ending point.