



University at Buffalo

Department of Computer Science
and Engineering

School of Engineering and Applied Sciences

MODELING CHOICES

Lecture 2.2

CSE4/510: Reinforcement Learning

August 29, 2019

Modeling Choices

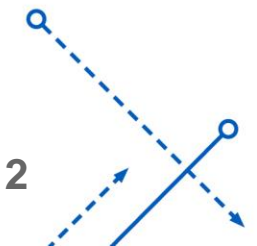
Environment: Observable vs. Partially Observable

Agents: Single vs. Multi-agent

Next States: Outcomes are Certain vs. Random

Problem: Episodic vs. Sequential

Environment: Continuous vs. Discrete



Environments

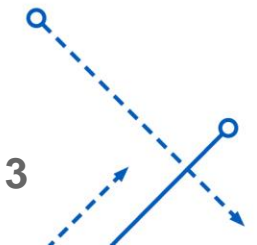
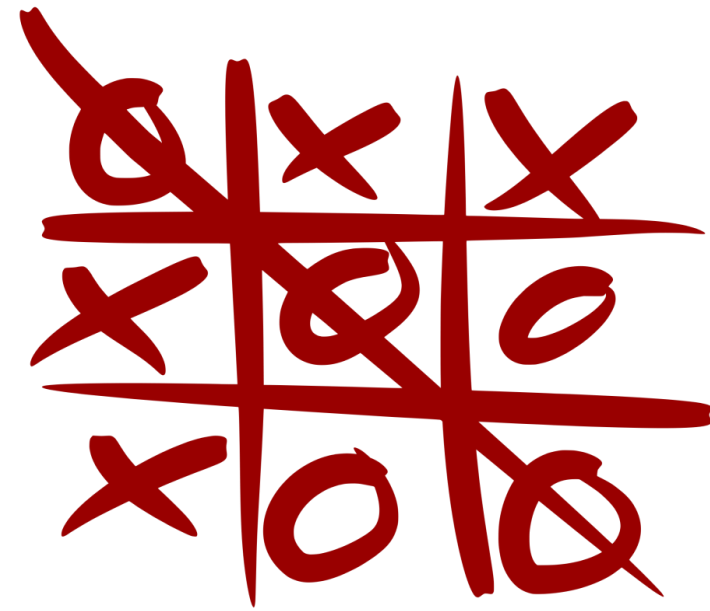
1. FULLY OBSERVABLE

A.



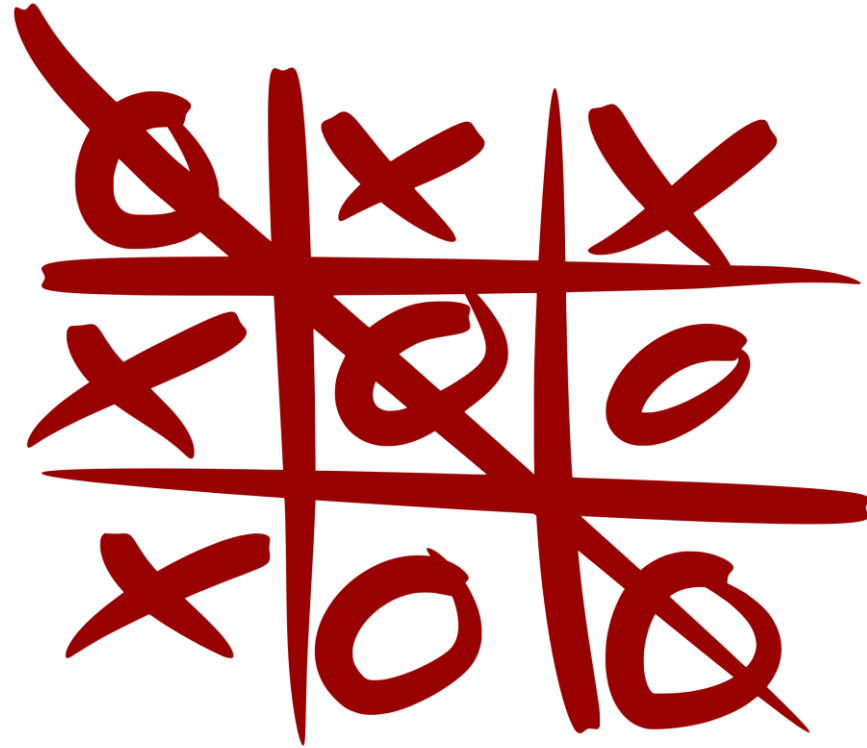
2. PARTIALLY OBSERVABLE

B.



Environments

FULLY OBSERVABLE



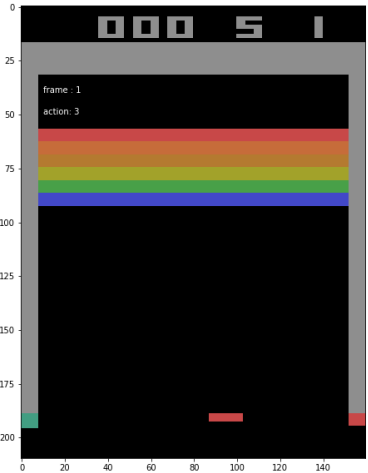
PARTIALLY OBSERVABLE



Agents

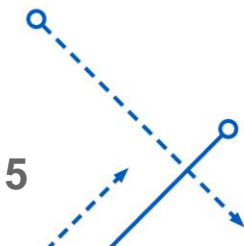
1. SINGLE AGENT

A.



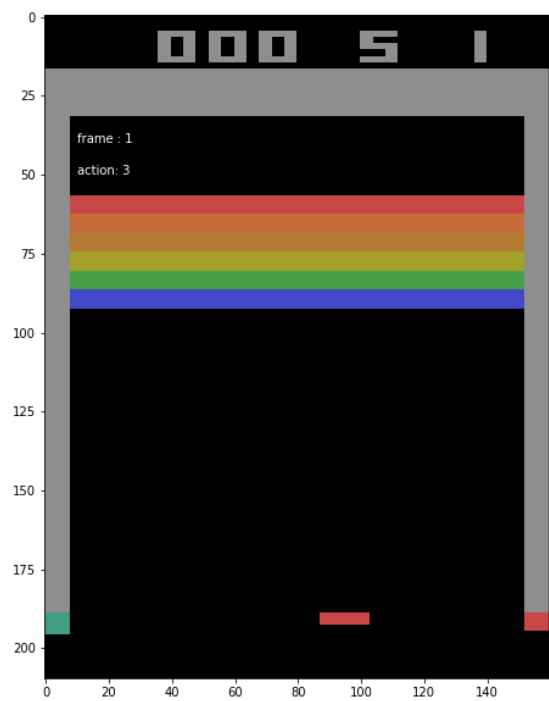
2. MULTIAGENT

B.



Agents

SINGLE AGENT



MULTIAGENT



Next States

1. DETERMINISTIC

A.



2. STOCHASTIC

B.

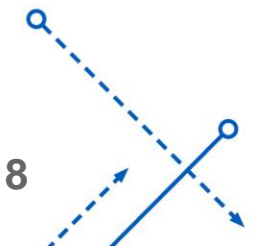


Next States

DETERMINISTIC



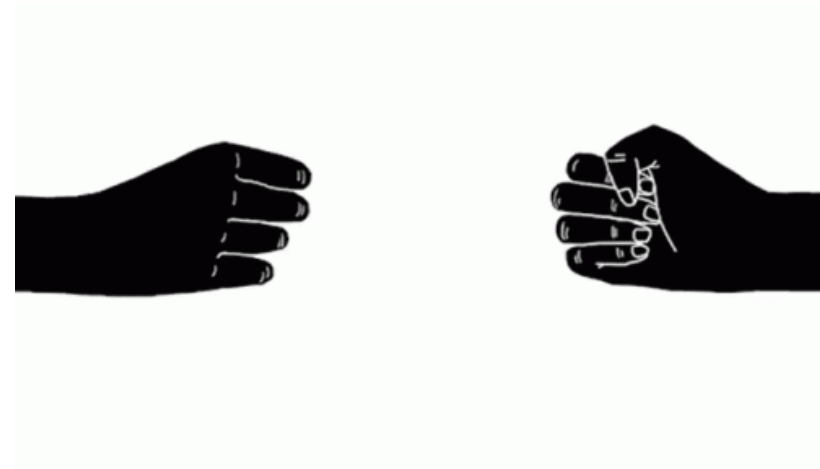
STOCHASTIC



Problem

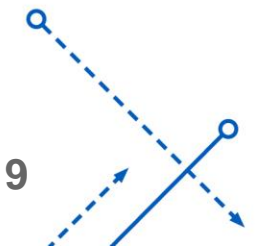
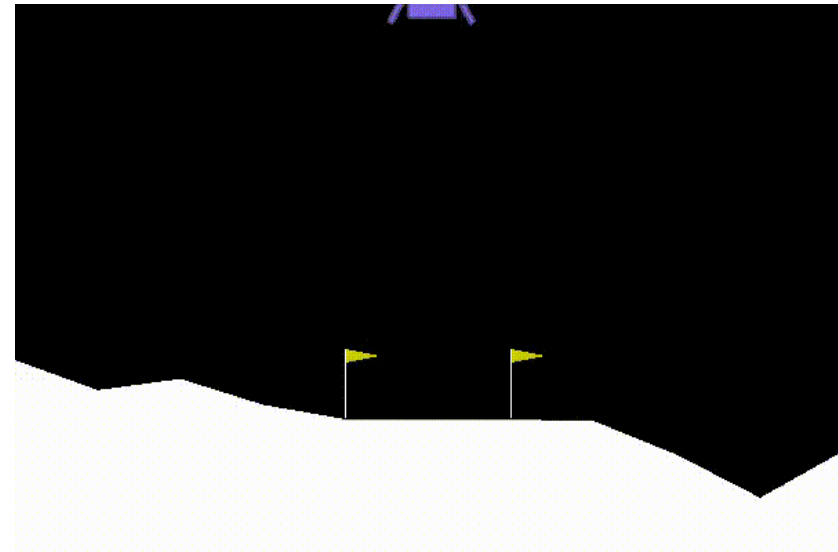
1. SEQUENTIAL

A.



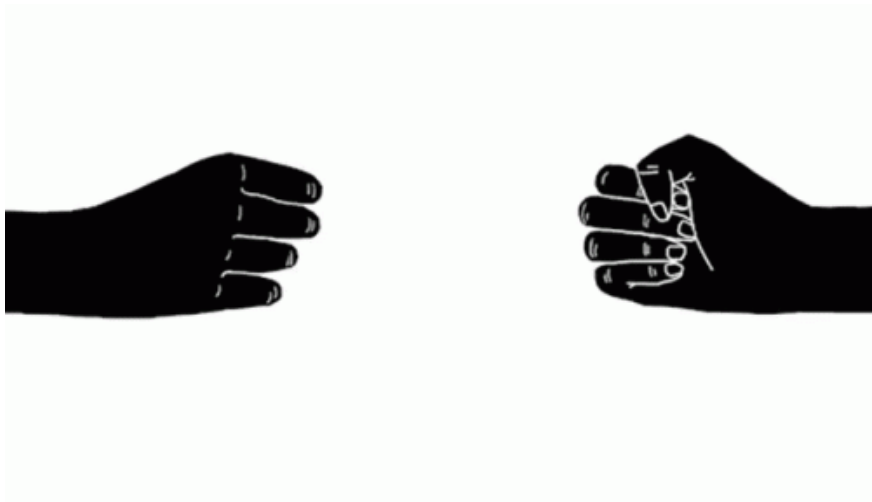
2. EPISODIC

B.

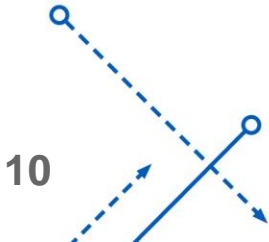
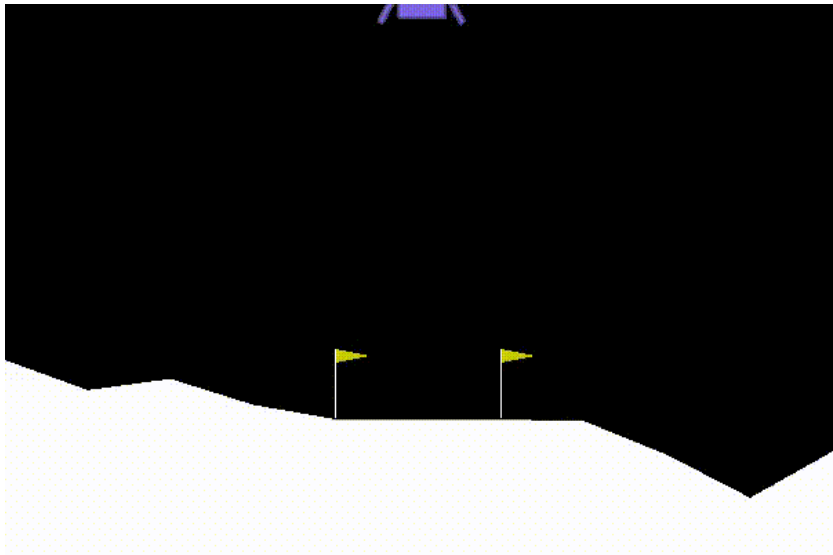


Problem

EPIODIC



SEQUENTIAL



Environment

1. DISCRETE

A.



2. CONTINUOUS

B.

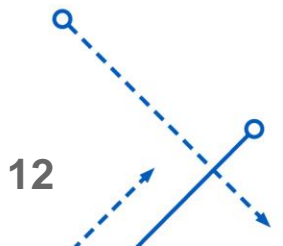


Environment

DISCRETE



CONTINUOUS



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Do you like challenges?

How about driving a **rented car** in a **new country**
with **unfamiliar geography and traffic laws**? 😊

