

Tutorial 10

(Version 1.2)

- Given the example from the lecture of training a robot to flip pancakes, explain:
 - What a demonstration would look like in terms of the formal model on slide 10.
 - What demonstration technique is used.
 - What the record mapping and embodiment mapping are.
- Given the partial policy in Figure 1, explain how you would adapt Q-learning to learn a policy for acting in that world. What is the advantage of starting with demonstrations in this case?
- Given the example from the lecture of training a robot to flip pancakes, describe how you would choose to derive the policy for the arm.
- Imagine using confidence-based autonomy in the scenario of Figure 1.
 - Give an example of how confident execution might lead to an action being executed.
 - Give an example of how confident execution might lead to a demonstration being requested.
- Explain how confidence-based autonomy could be implemented in the framework of the Pacman exercise in Coursework 1. That is, consider the data from Coursework 1 to be a demonstration¹. Given this demonstration, how could you use it to implement confidence-based autonomy for Pacman?
- Consider the case of medical school admission from the lecture.
 - Explain how this matches the characteristics of a WMD as defined in the lecture.
 - What could be done in this case to create a system for processing admissions that was not harmful?

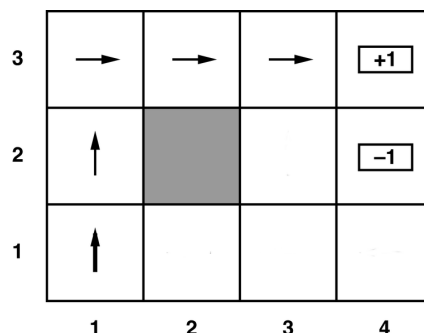


Figure 1: A demonstration in a familiar world.

¹The data was exactly a demonstration, it was a sequence of feature vectors from a game that Pacman won.

Version list

- Version 1.0, March 24th 2019.
- Version 1.1, March 24th 2019.
- Version 1.2, March 9th 2021.