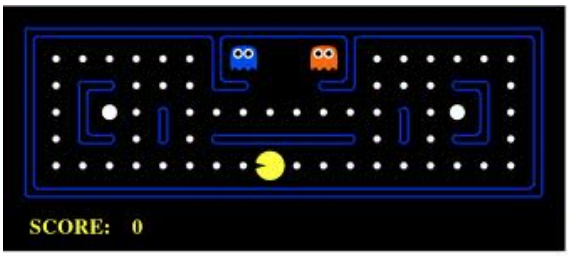
The University of Melbourne
School of Computing and Information Systems
COMP90054 AI Planning for Autonomy, Semester 1, 2020

Project 3– Reinforcement Learning

Deadline: 18:00, Thursday 2 July
This assignment is optional and counts for up to 10% of the marks for this subject.
This project must be done individually.

Aims

The aims of this project are to improve your understanding of solving MDPs, and to introduce you to some advanced concepts.



https://berkeleyai.github.io/cs188-website/project3.html

Your tasks

Fork repository First, fork the repository at: https://gitlab.eng.unimelb.edu.au/tmiller/comp90054-rl-2020s1

Once you have forked the repository, your repository may be viewable by other students in the class. To avoid any issues with academic misconduct, please set your repository to 'private'.You can does this by going to gitlab.eng.unimelb.edu.au, selecting your `comp90054-rl-2020s1` repository, navigating to the privacy settings using 'Settings' , then 'General', then 'Permissions', and selecting 'private'.

Please do this as soon as you fork the repository.

Complete reinforcement learning tasks Complete as much of the following assignment as you wish/can: https://berkeleyai.github.io/cs188-website/project3.html

Submit your details Register your repository using this form: http://go.unimelb.edu.au/k3qr

Marking criteria

Run the command: `python autograder.py` to run the tests.

Your mark will be taken directly from this autograder. No other tests will be run and no marks will be given for code formatting, etc. If you run your local autograder then this should be the mark you receive.

Your mark will be calculated using only those questions where you score more than 0, meaning that if you cannot complete one of the tasks, leave it empty and you will not be penalised. If you try questions worth 6 marks and receive 5 out of 6, your exam will be reduced by 6% and your will get 5% for this assignment. So, there is no risk in starting this and submitted only some questions completed.

Originality Multiplier

We will be using a code similarity comparison tool to ensure that each student's work is their own. For code that is similar to another submission or code found online, an originality multiplier will be applied to the work. For example, if 20% of the assessment is deemed to have been taken from another source, the final mark will be multiplied by 0.8.

Late submission policy

As this is optional and the due date is at the end of the exam period, there will be no late submissions accepted.

Submission

The master branch on your repository will be cloned at the due date and time.

From this repository, we will copy *only* the files: `valueIterationAgents.py`, `qlearningAgents.py`, and `analysis.py`. Do not change any other file as part of your solution, or it will not run. Breaking these instructions breaks our marking scripts, delays marks being returned, and more importantly, gives us a headache.

Academic Misconduct

The University misconduct policy[1] applies. Students are encouraged to discuss the assignment topics, but all submitted work must represent the individuals understanding of the topic. The subject staff take academic misconduct seriously. In the past, we have prosecuted several students that have breached the university policy. Often this results in receiving 0 marks for the assessment, and in some cases, has resulted in failure of the subject.

Important: As part of marking, we run all submissions via a code similarity comparison tool. These tools are quite sophisticated and are not easily fooled by attempts to make code look different. In short, if you copy code from classmates or from online sources, you risk facing academic misconduct charges. Note that there are solutions to this task available online, but we have many of them, so we are likely to detect any attempt to copy code.

But more importantly, this is a task for you to learn a lot about reinforcement learning and to reduce the weight of your exam – please do not take advantage of this by submitting work by someone else and risk failing the subject all together. If you simply cannot do this assignment without resulting to misconduct, *do not submit* – you will not lose any marks.

[1] See https://academichonesty.unimelb.edu.au/policy.html