**Week -1 (18.10 – 24.10)**

19/10

* Start-up, watched presentation, setup basic structure for project work folder.

**Week 0 (25.10 – 31.10)**

* Busy due to assignments and obligatory coursework in other courses.

**Week 1 (01.11 – 07.11)**

Thursday 04/11

* Chose task Reinforcement Learning.
* Need to decide on environment. Dabbling in the idea of creating own, but this could take a while to implement so settling for a pre-made one for the time being.
  + <https://github.com/Kautenja/gym-tetris>
* Trying to prepare dependencies etc., encountering issues with Visual C++.
* Got the environment running.



* Experimenting with the environment to figure out the variables. Using the “SIMPLE\_MOVEMENT” action space since it has all the inputs we require for Tetris.



* For future reference:

|  |  |
| --- | --- |
| 0 – NOOP | No Operation, agent idles |
| 1 – A | Agent rotates piece clockwise |
| 2 – B | Agent rotates piece counterclockwise |
| 3 – right | Agent moves piece to the right |
| 4 – left | Agent moves piece to the left |
| 5 – down | Agent soft drops piece |

Friday 05/11

* Decided on trying to implement the AI using DQN and referenced the 8th exercise. Quickly ran into a wall and decided to start looking into how to save and load trained models before doing anything else, as this will probably prove to be rather important later, since Tetris is significantly more complex than the CartPole environment. I therefore expect the training to take quite some time.
* Noticed some flawed logic in the CartPole DQN model, specifically with the exploration rate, where the agent would never explore anything. This leads to the agent only being able to evolve if it gets “lucky” in the first few episodes.
* Implemented a fix that lets the agent learn more consistently, although it does not always retain what it learns.

**Week 2 (08.11 – 14.11)**

**Week 3 (15.11 – 21.11)**

**Week 4 (22.11 – 28.11)**

Assignment turn-in 26.11!