

Reinforcement Learning

# Real World Reinforcement Learning

## Assignment 2

Choose a research paper describing a real-world application of reinforcement learning and write a review of the paper. In the review, describe the problem and how it is solved; address explicitly the issues the authors had to grapple with due to the problem being a real-world problem. You will need to consider how they approached identifying a state, representing it, similarly for actions; how they reduced the size of any spaces and implemented generalisation or how they contrived to avoid having to do this; how they dealt with the non-Markovian nature of the problem, scarcity of training data, difficulty of testing results, etc.

Include in your report a discussion of how well the authors succeeded in solving their real-world task, highlighting the strong and weak points of their solution and assumptions, and identifying where further work is needed or would be fruitful.

The submission deadline is **Friday 28th March at 4pm**. Note that this takes into account the extensions connected to the Appleton Tower closures, and that it is after Easter. The homework is worth 10% of the total course mark. Please don't write more than four pages. It ought not to take you more than about 10 hours.

You need to make TWO forms of submission.

1. Submit your review electronically using the `submit` program:

```
submit msc rl cw2 <filename-of-your-paper>
```

Please use `msc` even if you are in another year or degree and see the man page for `submit` if you need further information. Please submit a pdf file.

2. ALSO submit a paper copy of your report to the ITO.

Note that you should use your own words in your report. Do not lift wholesale from the paper: that would be plagiarism. You may quote explicitly (cited) short fragments – a few words, a sentence – but otherwise your report should show that you have read and digested the information and that you are producing your own understanding of what you have read. Plagiarism software may be used.

Gillian Hayes  
February 28th 2008