Spring 2019

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Assignment 4

Due Friday by 11pm   **Points** 100   **Submitting** a file upload

Available Apr 3 at 12am - May 1 at 11:59pm 29 days

CS182-Spring2019-HW_RL (due Friday April 26 at 11pm).

Download the assignment here: https://bcourses.berkeley.edu/courses/1478831/files/folder/assignments?preview=74870500

This is the deep reinforcement learning homework assignment for CS 182 / 282A (Designing, Visualizing, and Understanding Deep Neural Networks) at Berkeley for Spring 2019.

Academic integrity: do not make your code public for this project until after the semester. In addition, do not share your code or the generated log files with other students.

Important note: the DQN part for Pong may take a long time to run and evaluate, especially without a GPU. Please start coding early!

Installing

We have tested this code on the following systems:

- Python 3.5.2 and Ubuntu 16.04
- Python 3.6.3 and OS X 10.13.6

To get started, (1) create and then (2) activate a virtualenv like you've done in prior assignments. Then do step (3) which is to install packages in your virtualenv, like this:

```
pip install -r requirements_gpu.txt
```

If you are not using a GPU, run this instead:

```
pip install -r requirements.txt
```

We have tested the code using the exact package versions as described in the requirements file, but it is likely that minor version changes will still be OK.

Usage and Submitting the Assignment

There are two Jupyter notebooks, one for Policy Gradients and the other for Deep Q-networks. Make sure you complete those. For grading purposes, each is worth half of the grade.

To submit the assignment, run

```
bash prepare_assignment.sh
```

and submit the zipped file to bCourses. If the script doesn't work, adjust permissions via:

```
chmod +x prepare_submission.sh
```

and try again.

The entire zipped file should be on the order of 10MB in size. If it's much larger than that, check if you have older models saved in `data_pg` and `data_dqn` that you are not using for evaluation. These can be deleted, as we're only interested in the models that you used for evaluation and to generate your plots in the notebooks.

Acknowledgments

The starter code is a mix of code provided by various researchers at Berkeley and OpenAI, including at least Szymon Sidor, John Schulman, Sergey Levine, Abhishek Gupta, Joshua Achiam, Michael Chang, and Soroush Nasiriany.