Project 1—Journal Club for Policy Gradients—ECE590–001

1/15/2020

Description: You will be assigned to a group to adequately mix up interactions and experiences. You will present one of the named algorithms below. You will provide a beamer presentation deck as an artifact for your group. *the goal of the presentations is "journal club" some of the relevant policy gradient papers.* Successful presentations will start with the nice summaries written in spinning up, but expand along axes of inquiry like: in the original paper what were the key points and takeaways and what was novel. You should include some demonstrations/explorations of these algorithms running for gym environments (key feature of spinning up is you have access to these algorithms and you can play with them).

Other requirements/goals: EVERYONE should read spinning up descriptions (links below) so you can ask good questions. Goal of this activity is ultimately to get a feel for these works.

Guidance: I will interact with the groups during the preparation of the presentation to insure that the beamer artifact covers all it needs to. I will also help outline and troubleshoot them as necessary. *Checkpoints:*

1. 31 January 2020 during discussion section: form a plan to explain.
2. 7 February 2020 during discussion section: draft of presentation, Q&A with instructor.

Timing: Presentations will be 12 Feb 2020 and 14 Feb 2020 (during discussion section). They should last about 20 minutes.

Version Control: Please make public fork of this repo and develop your materials in the appropriate directory.

- Group 1: Present Vanilla Policy Gradient with generalized advantage estimation. Start here: https://spinningup.openai.com/en/latest/algorithms/vpg.html.
- Group 2: Present Trust Region Policy Optimization. Start here: https://spinningup.openai.com/en/latest/algorithms/trpo.html
- Group 3: Present Proximal Policy Optimization. Start here: https://spinningup.openai.com/en/latest/algorithms/ppo.html
- Group 4: Present Deep Deterministic Policy Gradient. Start here: https://spinningup.openai.com/en/latest/algorithms/ddpg.html