Homework 11 – Games

Arthur J. Redfern
arthur.redfern@utdallas.edu

---

0 Outline

1 Reading

1. Games
   Motivation: understand common uses of xNNs in games applications
   https://github.com/arthurredfern/UT-Dallas-CS-6301-CNNs/blob/master/Lectures/xNNs_110_Games.pdf

   Complete

2. [Optional] War Games (movie)
   Motivation: learn how to use a dial up modem, play online games and teach a computer via self play to save the planet
   https://www.imdb.com/title/tt0086567/

   Complete

3. [Optional] AlphaGo (movie)
   Motivation: in class we learned MCTS with a policy network for implicit breadth reduction and a value network for implicit depth reduction to play Go; see this movie to put the accomplishment in context and bring to life the key participants
   https://www.alphagomovie.com

   Complete

2 Theory

None

3 Practice

4. Understand the following tutorials (https://github.com/tensorflow/agents/tree/master/tf_agents/colabs) and run them in Google Colab.

Complete

5. [Optional] If you have an interest in the exploration of additional RL algorithms and applications, see the following Stable Baselines pages

- Stable baselines: a fork of OpenAI baselines — reinforcement learning made easy (https://towardsdatascience.com/stable-baselines-a-fork-of-openai-baselines-reinforcement-learning-made-easy-df87c4b2fc82)
- Stable baselines (https://github.com/hill-a/stable-baselines)
- RL baselines zoo: a collection of pre-trained reinforcement learning agents (https://github.com/araffin/rl-baselines-zoo)
- Stable baselines, a fork of OpenAI baselines - train on Atari games (https://colab.research.google.com/drive/1iYK11yDzOOqnrXi1Sfjm1iekZr4cxLaN)

Complete