Homework 11 – Games

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0 Outline

1 Reading
2 Theory
3 Practice

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. [**Optional**] Explore:

- rlpyt: a research code base for deep reinforcement learning in PyTorch
  - https://github.com/astooke/rlpyt
  - https://rlpyt.readthedocs.io/en/latest/

- Spinning up in deep RL
  - https://spinningup.openai.com/en/latest/
  - https://github.com/openai/spinningup

- DQN adventure: from zero to state of the art
  - https://github.com/higgsfield/RL-Adventure

- ELF OpenGo: an analysis and open reimplementation of AlphaZero
  - https://arxiv.org/abs/1902.04522
  - https://ai.facebook.com/tools/elf-opengo
  - https://github.com/pytorch/ELF

- Alpha Zero General
  - https://github.com/suragnair/alpha-zero-general

Complete