

Unity Machine Learning Tools
HL
March 2022

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Part I. Coding Unity

1. Readme on Unity ML-agent

(a) readme on 6 DoF robot

105-4-#107-1-readme-#Unity-6-DoF-Robot-Arm-ML-Agents-CV-2021-5-7.pdf

https://github.com/hualili/robotics-open_abb/blob/master/aiv200/190j-unity-machine-learning/190j-1%23readme-%23Unity-Robot-ML-Agents-CV-2021-5-7.pdf

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-4-107-1-readme-#Unity/final-unity-ai-6DoF-robot

Note: Software folder: RobotArmMLAgentUnity

Installation location on my machine:

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-3-source

(b) general readme on Unity ML-agent

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-4-107-1-readme-#Unity

2. Unity github download URL

1-unity-ai-2021-4-30.odt

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-1-notes/final

3. Coding for Unity ML-agent

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100

Part II.

I. Theory Papers from Google DeepMind Team and Alike

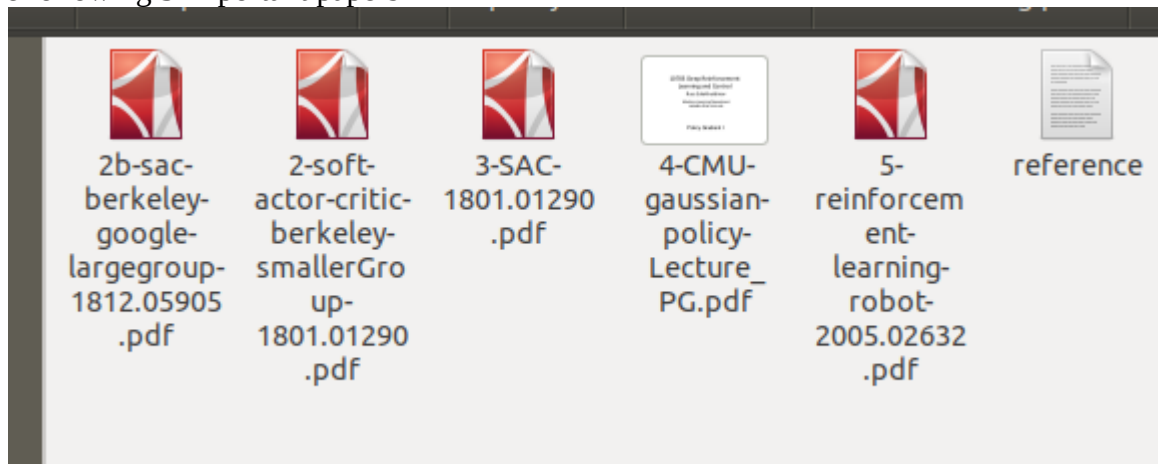
1.1. 190g-1GoogleDeepMind-references-v1-SS-2021-03-15.pdf

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-0-ref-reinforcement-learning/ref-reinforcement

1.2. 190g-2reinforcement-google-brain-2021-2-10-2012.04603.pdf

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-0-ref-reinforcement-learning/ref-reinforcement

1.3 The following 5 important papers



/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-0-ref

1.4. Harry Li and Team Conference Paper

(a) Good introduction and improvement of google deepMind reward function

190g-4#harry-camera-ready-paper-v2-2021-11-18.pdf

https://github.com/hualili/robotics-open_abb/blob/master/aiv200/190g-deep-reinforcement-learning/190g-4%23harry-camera-ready-paper-v2-2021-11-18.pdf

(b) Introduction to SAC algorithm on Unity

https://github.com/hualili/robotics-open_abb/blob/master/aiv200/190g-deep-reinforcement-learning/190g-5-Unity-ML-Agents-SAC-CV-2021-3-23.pdf

II. My Lecture Lecture Notes and My Tutorials

2.1 Sac Algorithm

106-lectureNote-SAC-2021-03-25-Note-10-29.pdf

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-3-robots/manufacturing-pack/3-23-fd100/105-deep-reinforcement-fd100/105-1-notes

III. Python Code as Introductory Example to Reinforcement Learning

3.1. 190g-2a-catpole

cartpole_changes.py

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-2-source-py/190g-2a-catpole

3.2. 190g-2b-world-model-py

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-2-source-py

IV. Demo of Simulation Videos

4.1 Deep Learning Race Driver _ Unity ML-Agents-gEf9V03HWv0.mkv

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-1-295-299-reinforcement-learning/reinforcement-learning/autonomous-driving

V. Unity ML-Agent

5.1. 6 DoF robot action, state, reward functions for coding analysis 190g-5-6DoF-Action-State-Reward-SS-2021-03-17.pdf

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190g-deep-Reinforcement-learning/190g-3-unity-ML

5.2. Karting-MLAgents

Karting-MLAgents.zip

/media/harry/easystore/backup-2020-2-15/CTI/3proejcts/3-8-smart-tech/3-8-4-CTI/3-8-4-6-products/AIV200/190-robots-health/190j-unity-ml/unity-ML/Karting-MLAgents