HalfCheetahBulletEnv-v0

개발환경

- Python 3.5.2, OpenAI Gym; MacOS 11.2.1, CPU, 2.5G, 16GB;
- seed:100; Pytorch:1.8

구현기능

1. Single Agent Actor-Critic
    - Model:

self.critic = nn.Sequential(nn.Linear(state_size, 256), nn.LeakyReLU(), nn.Linear(256, 128), nn.LeakyReLU(), nn.Linear(128, 64), nn.LeakyReLU(), nn.Linear(64, 1))	self.actor = nn.Sequential(nn.Linear(state_size, 256), nn.ReLU(), nn.Linear(256, action_size), nn.Tanh())

    - Hyper-parameter:
        - N-step size : 5
        - learning rate : 1e-4
        - gamma : 0.995
        - max. episodes : 2000

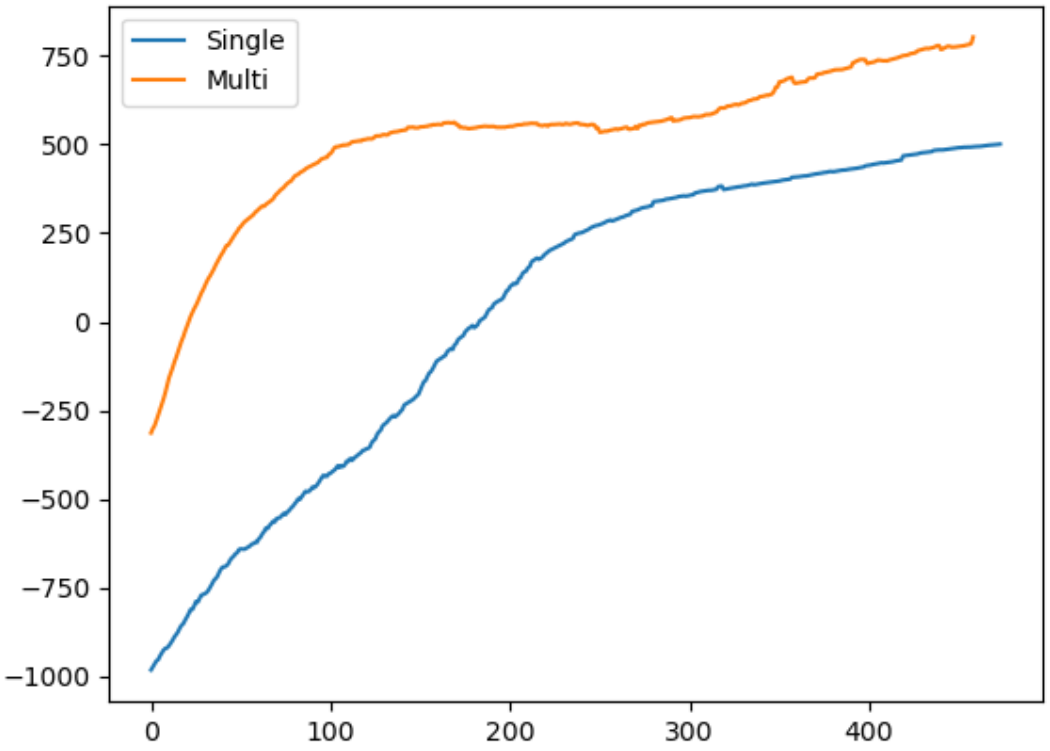
    - GAE 구현
        - tau :0.95

2. Multi-agent Actor-Critic (A2C)
    - Model: 상동
    - Hyper-parameter:
        - Agent number : 12
        - N-step size : 5
        - learning rate : 1e-4
        - gamma : 0.995

    - 병렬처리 클래스:
        - SubprocVecEnv클래스 : gym환경을 리스트로 해서 subprocess들 위에 작동시킴

실행결과

1. Single Agent, Multi-Agent 성능 비교
   - Actor Critic 알고리즘 테스트 결과, 750 에피소드에서 목표 score 500점에 도달



2. Single Agent GAE 성능 비교 (max. 20 step, lr=1e-4 경우)