

SUSC Summer 2023

Robot^N simulator materials

동아대 AI학과 김지선

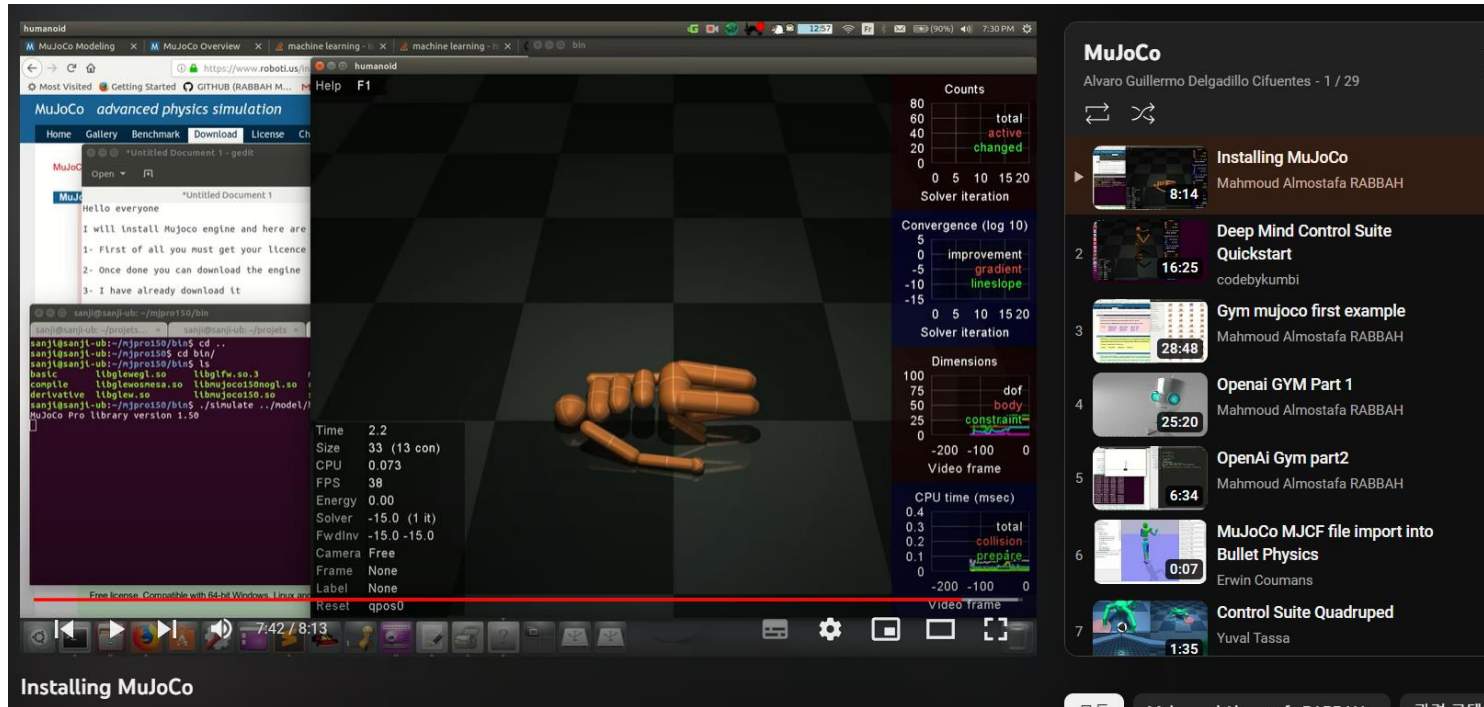


RL Robot Simulator

- Simulator:
 - 가상 환경에 가상의 로봇을 배치하여 실제 로봇 없이도 로봇의 소프트웨어를 테스트할 수 있는 도구
- 대표적인 도구:
 - MuJoCo (DeepMind) - 물리적 현상을 자연스럽게 나타내는 시뮬레이터
 - NVIDIA Gym-Simulator Isaac Gym - 모두 GPU 기반으로 빠른 렌더링을 제공



RL Robot Simulator



MuJoCO Tutorial:

<https://www.youtube.com/watch?v=xG8oujhD9lA&list=PLzWiCM7Cn8WYCrVMYGszduvFhkw-RvjAl>

Mujoco robot 실습 영상: <https://www.youtube.com/watch?v=gn4nRCC9TwQ>

Gym 시뮬레이터 실습

- OpenAI Gym을 활용해서 Lunar Lander DQN 실습해보기

```
Error: unknown command 'install' maybe you meant 'install'
prcnsi@prcnsi-VirtualBox:~/Desktop/RL_Practice$ /bin/python3 /home/prcnsi/Desktop/RL_Practice/gymtest.py
Using cpu device
Wrapping the env with a `Monitor` wrapper
Wrapping the env in a DummyVecEnv.
-----
rollout/
  ep_len_mean      94.1
  ep_rew_mean     -210
time/
  fps              730
  iterations        1
  time_elapsed      2
  total_timesteps  2048
-----
rollout/
  ep_len_mean      92.8
  ep_rew_mean     -186
time/
  fps              762
  iterations        2
  time_elapsed      5
  total_timesteps  4096
train/
  approx_kl        0.009379802
  clip_fraction     0.0454
  clip_range        0.2
  entropy_loss      -1.38
  explained_variance 0.00629
  learning_rate      0.0003
  loss              934
  n_updates         10
  policy_gradient_loss -0.0102
  value_loss        1.78e+03
```

Gym 시뮬레이터 실습 결과 화면

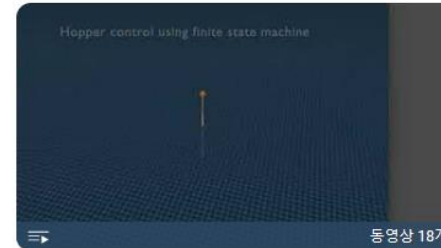
- OpenAI Gym을 활용해서 Lunar Lander DQN 실습해보기



MuJoCo 실습 참고 자료

- [how to use MuJoCo - YouTube](#)

공유 필터



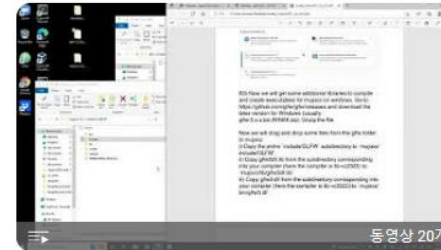
MuJoCo 200 Tutorials

Pranav Bhounsule

MuJoCo: Trailer for course on MuJoCo 200 in C language, see de... • 0:49

MuJoCo Lec 0: Installation on Mac/Linux/Windows and file stru... • 10:19

모든 재생목록 보기



MuJoCo Python Tutorials

Pranav Bhounsule

Windows Installation MuJoCo 2.2.1 (C code), running sample co... • 13:02

Mac Installation MuJoCo 2.2.1 (C version), running sample code ... • 9:56

모든 재생목록 보기



A MuJoCo plug-in for Unity by DeepMind

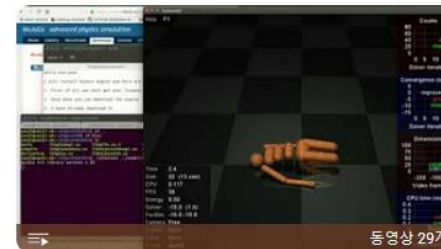
조회수 3천회 • 1년 전



Tom Erez

A screencast showing how to use the MuJoCo plug-in for Unity.

Documentation: <https://mujoco.readthedocs.io/en/latest/unity.html> ...



MuJoCo

Alvaro Guillermo Delgadillo Cifuentes

Installing MuJoCo • 8:14

Deep Mind Control Suite Quickstart • 16:25

모든 재생목록 보기

STUDY PRESENTATION

THANK YOU

발표를 마치겠습니다^N

궁금한 점은 바로 질문해 주세요!

