

OpenAI Gym

ROCHER
Lambert





OpenAI

\$1,000,000,000

**Promote
and
Developp
Friendly AI**





OpenAI





OpenAI



3 DOTA 2





OpenAI



3 DOTA 2





OpenAI



4

DOTA 2



Elon Musk ✓

@elonmusk

Suivre



OpenAI first ever to defeat world's best players in competitive eSports. Vastly more complex than traditional board games like chess & Go.

17:15 - 11 août 2017

11 806 Retweets 39 827 J'aime



1,1 k



12 k

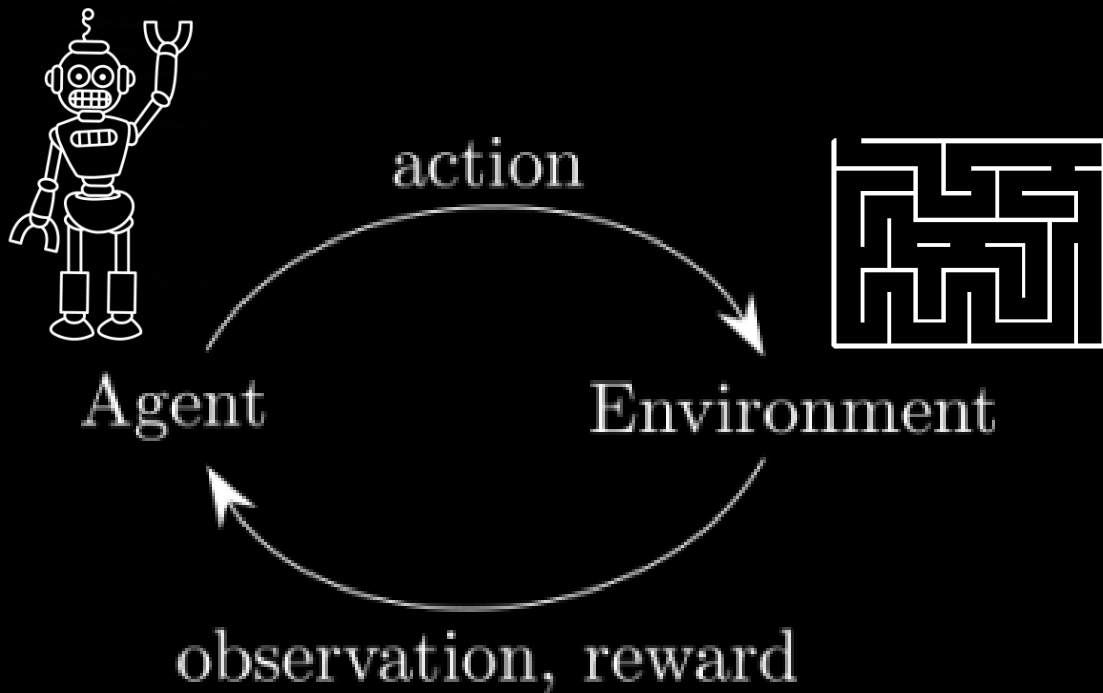


40 k



OpenAI

Reinforcement Learning



OpenAI Gym



614



7864



1759



license

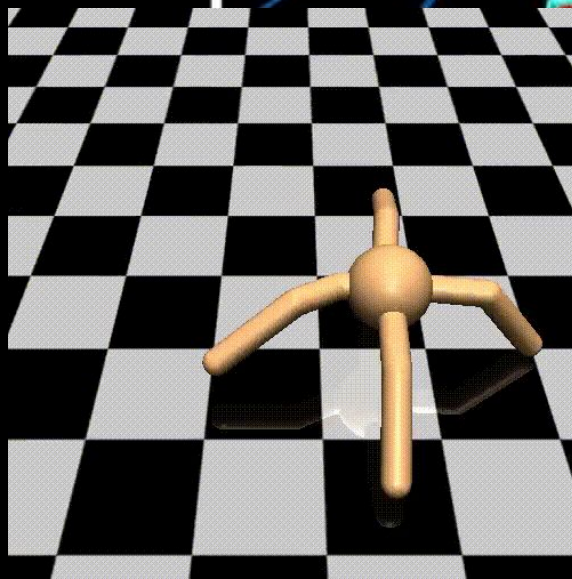
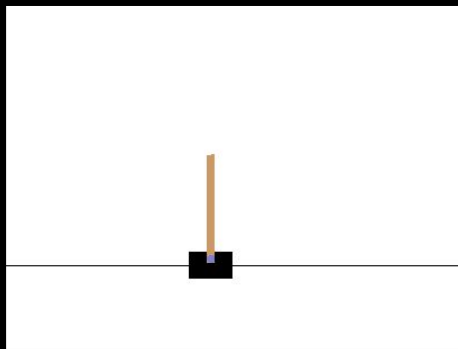
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Why Gym ?

- **Better benchmarks**
- **Standardization of environments used in publications**
- **Emphasize sample complexity, not just final performance**
- **Encourage peer review, not competition**

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Environments





UNIVERSE
OpenAI

OpenAI Gym

More
Environments



Q-learning

S : set of states

A : set of actions

$Q : S \times A \rightarrow \mathbb{R}$: quality of a state-action combination

Initialize Q with zeros

Foreach trainingEpisode :

s = currentState

a = action chosen according to policy

 update environment

s' = newState

$Q(s,a) = Q(s,a) + \alpha(\text{reward} + \gamma(\max_a(Q(s',a)) - Q(s,a)))$

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For who ?

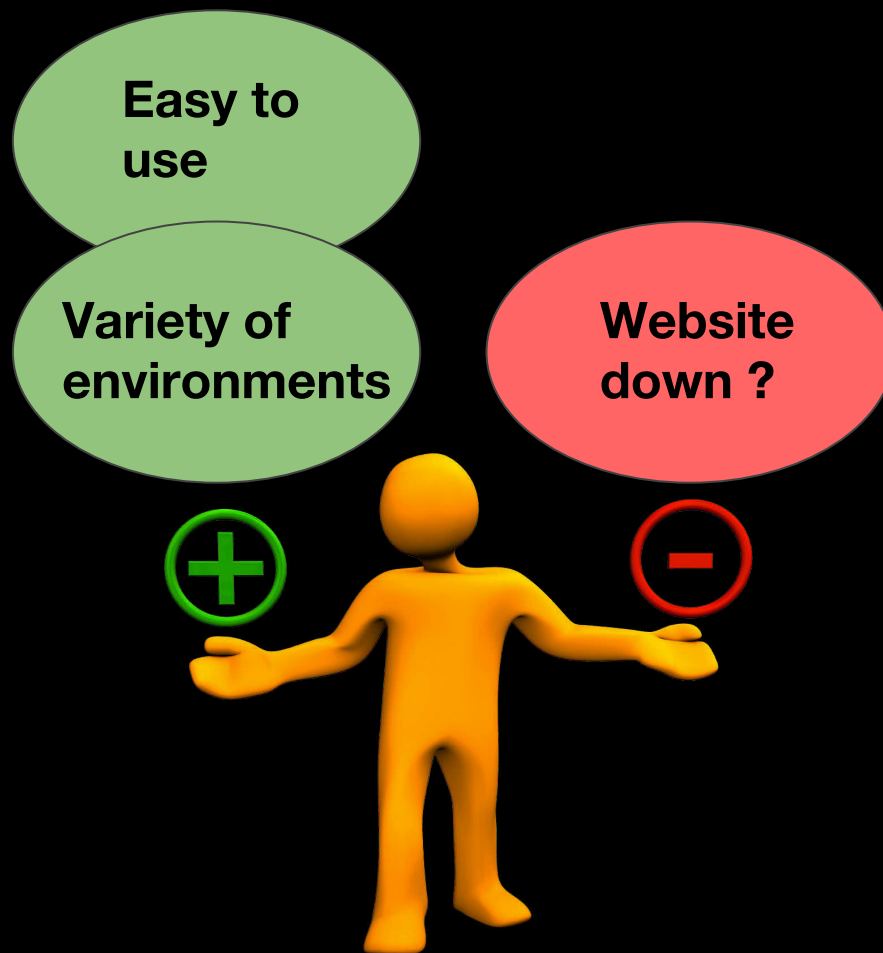
**Learning
about AI**

**Testing AI
before using it**

**Testing
new AI**

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Conclusion



Questions ?

