



Laboratório de Instrumentação e
Física Experimental de Partículas

Seminário LIP

Quinta Feira, 3 de Outubro 2019 - 11:30

An introduction to deep reinforcement-learning

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(LIP)

Reinforcement learning (RL) is a process of learning to act optimally in an environment in order to accomplish a given task without (or with limited) prior knowledge of both the environment and the task. Whilst this problem has been studied since before 1990, it has only been due to recent advances in neural networks, computing power, and learning algorithms that have allowed the field to start to tackle real-world problems: e.g AlphaGo beating the top players of Go in 2016 and 2017, and OpenAI Five beating the world champions of a popular esports game in 2019.

In this seminar I will introduce RL focussing on model-free learning; algorithms which do not require, or attempt to learn, an explicit model of the environment. The theory of model-free RL will be presented followed by several example algorithms of increasing complexity and an example comparison of their performance. The seminar will conclude with some closing remarks of my personal impressions of the field.

Potential attendees should be aware that this seminar will take place in the context of my evaluation for the IST course "Advanced Experimental Methods in Particle Physics II", in which I was required to study a new subject of interest. Therefore I claim no expertise in the subject of RL, beyond having spent some time studying it, and as such the seminar will represent my current and best understanding of the subject, which is hopefully more correct than incorrect.

Local: Sala de Seminários (311)

LIP, Av. Prof. Gama Pinto, N° 2, 1649-003 Lisboa

<https://indico.lip.pt/event/627/>

(Café e bolinhos 30 min antes)

O evento terá transmissão por streaming:

URL: <https://videocast.fccn.pt/live/lip/seminarios>

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