

Google Research Football

A Novel Reinforcement Learning Environment

Abstract:(Submitted on 25 Jul 2019)

Recent progress in the field of reinforcement learning has been accelerated by **virtual learning environments** such as video games, where novel algorithms and ideas can be quickly tested in a safe and reproducible manner. We introduce the **Google Research Football Environment**, a new reinforcement learning environment where agents are trained to play football in an **advanced, physics-based 3D simulator**. The resulting environment is challenging, easy to use and customize, and it is available under a permissive open-source license. In addition, it provides support for **multiplayer** and **multi-agent** experiments. We propose three full-game scenarios of varying difficulty with the **Football Benchmarks** and report baseline results for three commonly used reinforcement algorithms (**IMPALA**, **PPO**, and **Ape-X DQN**). We also provide a diverse set of simpler scenarios with the Football Academy and showcase several promising research directions.

Reference:

<https://arxiv.org/abs/1907.11180>

Video:

[Google Research Football](#)

Prerequisite:

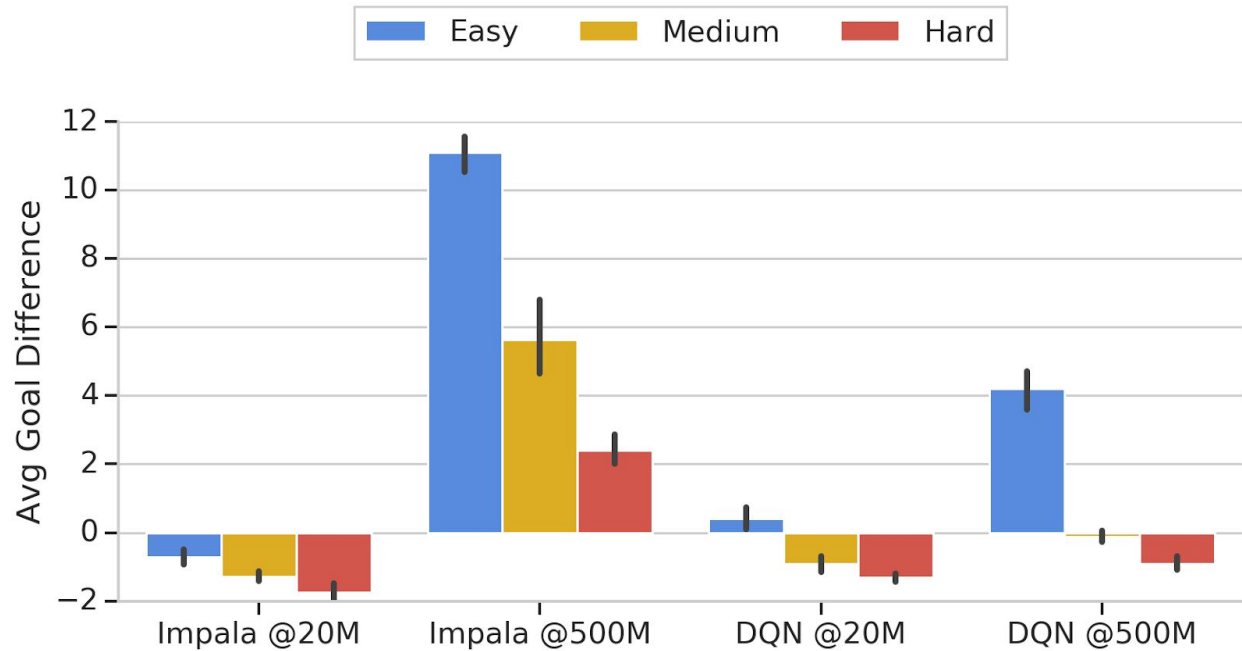
- Python3
- Virtualenv (to install follow below steps)
 - \$ pip install virtualenv
 - \$ virtualenv env_name --python=python3
 - Ubuntu: source env_name/bin/activate
 - Windows: . /env_name/bin/activate

Code and Readme:

<https://github.com/google-research/football/tree/75e88e49c552f3e096ae4054a1dd1a7ccbf837b#training-agents-to-play-GRF>

Solution: set environment variables for MESA driver, like this:
MESA_GL_VERSION_OVERRIDE=3.2 MESA_GLSL_VERSION_OVERRIDE=150 python3 -m
gfootball.play_game

Results:



Source: <https://ai.googleblog.com/2019/06/introducing-google-research-football.html>