

Getting started

Note: While possible to use MacOS or Linux, this guide was written with windows in mind.

This guide will help you set everything up so you can start working on your AI. First you first have to install StarCraft II, Python 3 & PySC2. Then we will need to add our custom map

Installing StarCraft II

StarCraft II can be installed for free by first downloading and installing the Battle.net app from <https://www.blizzard.com/en-us/apps/battle.net/desktop>. Then you have to login using a Battle.net account (there is an option to create one for free). After logging in you can pick the game StarCraft II and start downloading & installing it. (Make sure you download StarCraft 2 not StarCraft 1).

Installing Python

Download and install Python 3.6.8, which is the version that will be used for evaluation. This version is picked because it is the latest Python 3 version that supports TensorFlow. It can be downloaded and installed from <https://www.python.org/downloads/release/python-368/>. If you want to manage multiple python versions on your machine we recommend using Anaconda <https://www.anaconda.com/distribution/#download-section>

Installing PySC2

The easiest way to install PySC2 is using pip. You can do this by having pip installed and executing the following command:

```
pip install pysc2
```

more about PySC2 can be found at <https://github.com/deepmind/pysc2>

Downloading the Map

You can download our StarCraft II map from

https://drive.google.com/file/d/1u_ReSQDcjMazQD-JLcCEtSMk97EhbYmd/view?usp=sharing

Installing this map is the most complicated part of the getting started. You have to copy the map to the following directory:

```
<starcraft II installation>\Maps\Melee\CompetitionMap.sc2map
```

Usually this is:

C:\Program Files (x86)\StarCraft II\Maps\Melee\CompetitionMap.sc2map
And now we have to make PySC2 aware of the existence of this new map by editing a file in the package. We edit (or replace) the file:

<python environment directory>\Lib\site-packages\pysc2\maps\melee.py
to look like this file:

<https://drive.google.com/file/d/1CbP5iJ2lvswK43qyHh0WvrKKjtGfs7C/view?usp=sharing>

The change that is made is that we added our map on line 40.

We can now test if this worked by running the following command:

```
python -m pysc2.bin.agent --map CompetitionMap
```

A StarCraft II windows should now open and you can play the game!

Creating an agent

A skeleton file for your agent can be downloaded at:

<https://drive.google.com/file/d/1OL8E4g-82NIUjtButp7BOIzFY3FOo7vb/view?usp=sharing>

You **have to** change the class and file name to your team name. PySC2 calls the step method of your agent with an observation to ask for an action. You have to extract the input for your AI from the observation, more about the observation can be found here

<https://github.com/deepmind/pysc2/blob/master/docs/environment.md#observation>

Training also has to happen in the start method. The algorithm **should not** train when the TRAINING variable is set to False.

A tutorial series about creating an agent using PySC2 can be found here:

<https://chatbotslife.com/building-a-basic-pysc2-agent-b109cde1477c>

If you want to run your agent on our map you have to run the following command in the directory that has your agent python file:

```
python -m pysc2.bin.agent --map CompetitionMap --agent  
[filename].[classname]
```

An opponent agent can be set using the agent2 flag, to for example let your agent play against itself you would use the following command:

```
python -m pysc2.bin.agent --map CompetitionMap --agent  
[filename].[classname] --agent2 [filename].[classname]
```

When we evaluate your agent against another agent both agents will play on either side of the map twice.

Submission

The deadline for submitting your AI is Monday the 10th of June on 23:59. You have to send the python file with your ai, and the files it needs to load its trained state including with a short writeup of what strategy you used (did you use a DQN or another strategy?) and instructions on how to use your agent to competition@fruitpunch.ai.

Questions

Since this is the first pilot of the competition we expect you to have questions and you can ask them in the discord: <https://discord.gg/upzKEfS> or email to competition@fruitpunch.ai