

July 7, 2023

I've recently started learning the documentation of Deepbots (a reinforcement learning framework used specifically for Webots). Inside

[“https://github.com/aidudezzz/deepbots-tutorials/blob/master/robotSupervisorSchemeTutorial/README.md”](https://github.com/aidudezzz/deepbots-tutorials/blob/master/robotSupervisorSchemeTutorial/README.md) is a tutorial on how to develop a robot which balances a pole by only moving forwards and backwards. The environment is set up as a class which inherits the Deepbots RobotSupervisor, enabling all RL functions. By setting up a loop condition, you can call the environment class to run select certain actions while adapting with the environment. Its able to select an action because the robot has the “supervisor” enabled, allowings the robot to have more control of the entire **simulation**, than it usually does. This lets it have more control with getting observations/reward and applying certain actions which yield these awards. I've just finished documenting and completing the tutorial and I'm able to get the RL of Cartpole to run on my Webots. Currently I'm planning to use the format of Deepbots used from this example and possibly apply it to my project. Most of the formatting from the The utilities and ppo agent should be the same; however, I would be primarily changing the parameters from the class inorder to fit the needs of kicking the ball. The inputs would be the distance of object from RGB depth camera and the output would be the speed of the wheels in order to move the robot at certain locations. I'm planning to use Chance's FAIRIS robot instead of my 2 wheel because of better “hardware” to interact with the environment. I will ask question on how to set up on Wednesday.