

Flaws of the New Simulator And Some Proposals and Speculations on the 3D Soccer Simulation Competition

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Abstract. The new simulator has provided a new abstraction which has a closer connection with the reality. However, we find some flaws of the new sever and some inappropriate conditions when testing the agent. We except that these flaws can be soon remedied and recommend that in the future the simulation can pay more attention to robots' hardware and make a closer conjunction with the reality.

Keywords: instable, server, inappropriate, environment, hardware

1 Introduction

Based on the experience of utilizing the new simulator and testing the humanoid agent for nearly two weeks, the members of our team finally reach an agreement on the new change of the 3D soccer simulation: this change undoubtedly has made big progress by providing a simulation environment which is more close to reality. However, it does not mean that the simulator has reached a consummate state. In order to achieve the maturity of the new humanoid simulation, we have drew out some flaws from the aspects of the server and the simulation environment and made some proposals for the development of the 3D soccer simulation competition as follows.

2 Flaws on the new simulator

2.1 Flaws of the sever

The 3D soccer simulation competition starts to use a new server to abstract the real game. We found the server a little instable, probably because it is just an immature one and still need to be developed in future. Take an instance to explain it more clearly: although we execute exactly the same code in two tests, sometimes, however, the player's two-time performances are slightly different from each other. After discussion, we attribute the frequent appearance of this difference to the instability of the server, so we propose that in the near future this problem could be handled and the server could provide us a much more stable simulation environment.

2.2 Flaws of the simulation environment

Since the simulation competition has been subjected to significant changes, some ingredients of the new environment, such as the diameter of the ball and the height of the goal, seem to some extent unqualified. Take the ball for instance, in the new environment, compared with the player, the ball with a diameter of nearly half of the player's height seems fairly huge in the size. During the test of the agent, every time when we ordered the player to kick the ball, we found that it was really difficult for a player to take the ball for a long distance. After careful inspection, we speculate that the improper size of the ball might account for such phenomenon. We also notice another strange phenomenon within the field: the height of the goal is much lower than the diameter of the ball, which indicates that it is impossible for a player to kick the ball into the opponent's goal. In order to eliminate such unreasonable phenomenon, we highly recommend a limitation of the size of the ball. Besides, to gain more dexterity and capacity, we also expect that a joint can be installed on players' waists, which probably simplify certain movements such as walking, crawling etc.

3 Proposals on the development of the simulation

Since the Robocup simulation competition is an abstraction of the real game which relieves the robot researchers from handling some complex hardware problems and enables them to concentrate on higher level such as cooperation, the main purpose and significance of the 3D soccer simulation is to provide valuable software resources for robot researchers., which requires the simulator to successfully reflect and abstract the real game environment. With the appearance of the humanoid simulation, the 3D soccer simulation competition has already taken a big step forward. But compared with the HOAP-2 robot, one type robot made by Fujitsu, the humanoid is inferior both in adroitness and capacity. We propose and expect that in the feature, by simulate the

real robot like HOAP-2 robot, the humanoid can have more joints and perform more dexterously. We also strongly recommend that simulation should have a closer connection with the hardware to provide more precious theories and techniques for the robot researchers and to become more useful and practical. We all believe that by focusing on this, the 3D soccer simulation competition will have a very bright future and the goals of the Robocup will ultimately come into reality.