Jaeger Soccer 2D Simulation Team Description

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Abstract: This paper describes the new technology and method used in Jaeger which shown as following: basic introduction, the team strategy, defense and offense, the basic thought of the defending, passing, dribbling and shooting.

Keywords: Soccer Simulation 2D, Messages, Work in with, Initiative moves.

1. Introduction

The Jaeger soccer 2D simulation team which belongs to Huainan Normal University from China was founded in 2012. This very team won the third prize and the grand prize of competition of 2D simulation group in China Robot Contest for 2013、2016 and 2014 respectively. The spirit of our team is being cultivated, and our strength in cooperation and competitiveness are being enhanced at the same time. We are capable of opening of a new world in new competition field with our sufficient confidence and courage. The bottom layer we are using now is the Agent2D-3.1.1. After a period of studying, we added our innovative thinking into the code base of Agent2D-3.1.1 to improve the code base and strengthen the high-level decisions. Following are our understanding and change we have made to the bottom.
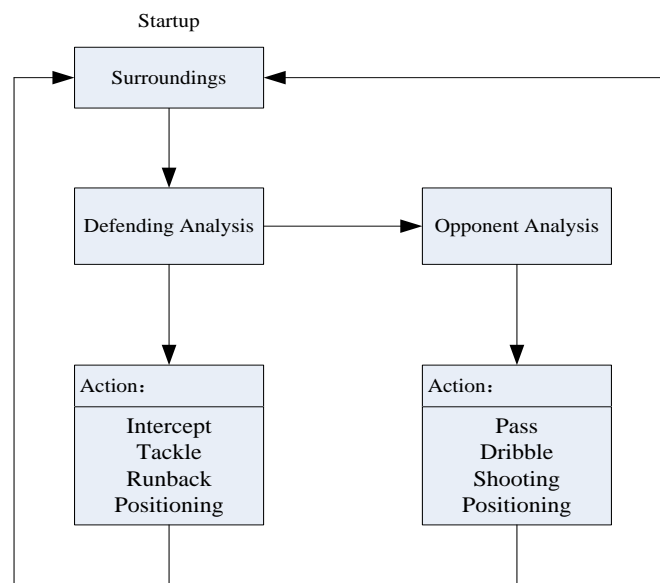

Figure 1：General strategy

2. Introduction of general strategy

The general strategy of team is mainly defensive and opportunity of attacking is looked for in active defending which process shown as Figure 1 and 2, The team plays on the defensive halfback will be involved much more and will not leave us half whether attacking or defensing and the guard station closer to our goal. A defensive formation of 5 man will be constructed and the difficulty of enemy assailant will be increased. However, we will take any chance of the attacking when we defense mainly. When I am ball handling, passing frequently and shooting as enemy halfback have not run back to their penalty area will be the strategy we will use as fast assailant if we would not lose ball. Meanwhile, we did a lot work on optimization and improvement of offensive and defensive formations and with our team base source code, it will perform much better than the former team with base source code (agent2d-3.1.1). If the enemy attack fast, our defense half enemies are easy to dribble through the first half.
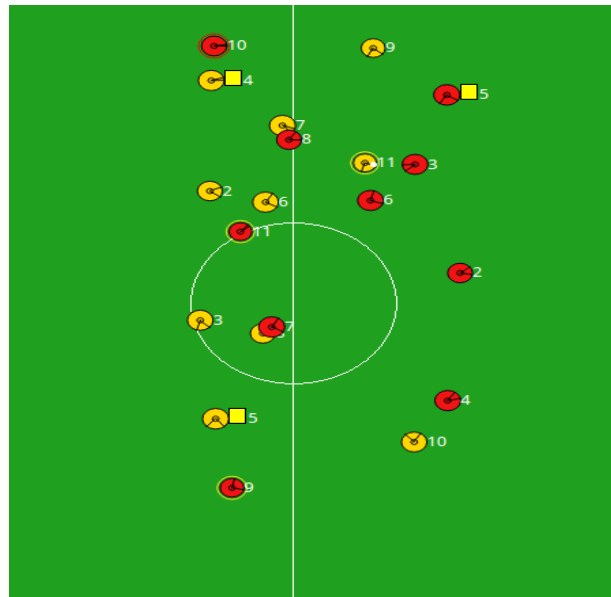
Figure 2: Overall formation

3. Basic tactics
3.1 Defense
The tactics of team's defense has two main aspects. Different conditions on fields, Our own players will take the initiative to adjust their positions in the premise of not from the formation.
For example, Figure 3 corresponding to each other serve and Figure 4 corresponding to the normal state of play. Our players will adjust their positions according to their own situation and teammates. To some extent, it can improve their own initiative on the defense.
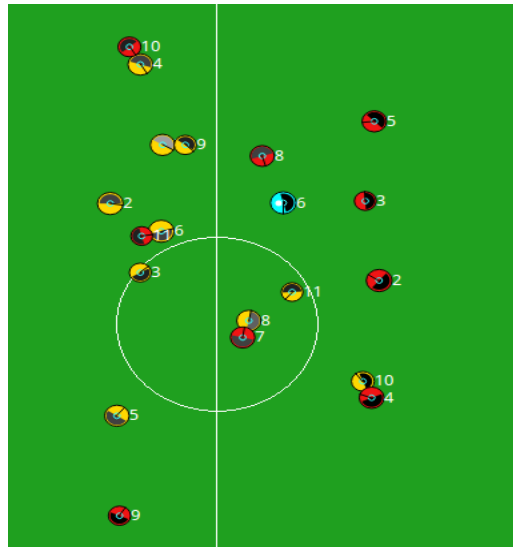
Figure 3: kick_in_l

Figure 4: play_on

One of the most factors of defense is cooperation. What we usually take is two players. As show in Figure 5 and Figure 6, This can improve the success rate of interception. Thus strengthening our own defense.

Figure 5: scene 1

Figure 6: scene 2

3.2 Offense

The tactics of team's offense also has two aspects: Effective position and does not violate the rules of communication mechanism.

Figure 7: attractive state   Figure 8: scoring chance

As show in Figure 7 and Figure 8, If one side of the ball forward, another side to the striker from his last enemy mobile player. This greatly improves the chances of shooting. At same time, the player will send some messages that control in 512 bytes to mate with their related. Such as the following five cycles they may reach a position or the physical value under the effect of future time arrival location.

4.4 Feasibility report and conclusion

Table 1: before application

Table 2: after application

With the World Cup last year on the 2D simulation of the top teams of executable code between tests ,table 1 and table 2 comparison ,After applying those strategies ,we tested 40 games,the 19 game is flat,we find has been in control of their own goals ,proved the feasibility of application of some basic strategies to reflect the effect of our own team and Practice.

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