

Mersad 2006 Team Description

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1 Introduction

Mersad 2006 (2D) is based on Mersad 2004, 2005 teams but its upper levels of decision is completely altered (because great changes in team members) so it can be said that you will encounter with a new team as the way of playing and intelligent behaviors. As a short description of Mersad 2006 structure, Mersad Team shares the game into two sections.

1. Play On
2. Non Play On

Play On is for the time that game mode is playon and obviously Non Play On is for the time that it is not playon (for exmaple freekickright). Play On has three sections.

1. Goalie
2. With Ball
3. Without Ball

2 Goalie

In Mersad 2006, Goalie stands on a line which is in front of our goal. At first, goalie sees the ball position and then decides for his position on the line. This line is predefined for the goalie. First we check whether we are on the line or not then goalie have to decide about his vertical position on the line. Vertical position is calculated from the crossing point of bisector and goalie's line in the triangle which is shown in Fig. 1.

3 With Ball

This section is for the time that our player is not a goalie and the ball is in his kickable area. When the ball is in our kickable we can do these jobs:

1. Shoot
2. Dribble
3. Pass

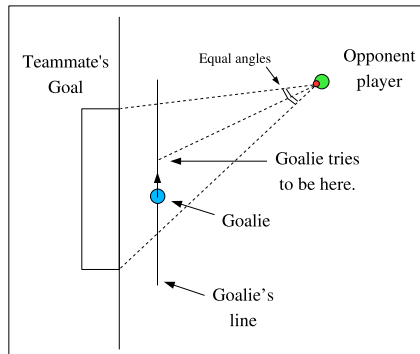


Fig. 1. This figure shows calculation of vertical position for the goalie.

Shoot is for the time that we have a chance to goal the ball. If we have this chance we shoot it to the opponent's goal but if we don't have such chance we will choose between Dribble and Pass.

Dribble is for the time that we can not pass to anyone but we can dribble, in other words we start dribbling when the dribbling is possible.

Pass is for the time that we can not dribble with ball and we have to pass the ball to someone. If we can not pass to anyone, finally we decide to dribble with ball.

Sometimes dribbling is possible but we pass the ball. At this times we saw that if we pass to someone, that teammate player can do better jobs or at the next cycle we can not pass to anyone.

4 Shoot Algorithm

In the Shoot decision we kick virtual balls to 14 points of opponent goal. Then we simulate the virtual balls and opponent players so if opponent players could not catch the ball, we have a chance to goal the ball and then we kick it to that point which is good.

5 Dribble Algorithms

In Mersad2006 we have two types of Dribbling.

1. Goal Dribble
2. Kickable Dribble

In Goal Dribble we kick the virtual ball two meters in front of ourself. Then we simulate the virtual ball and all players so if we can intercept it sooner than other players, it means we can do this dribbling. If we could not do this we will choose kickable dribble.

In Kickable Dribble we kick and dash and try that the ball stays in our kickable area.

6 Pass Algorithm

In the Pass decision we kick virtual balls to all directions, then simulate the virtual balls and all players. If teammate players catch or intercept the ball sooner than opponents, this pass is good and possible.

And finally from the possible passes we choose the one which a teammate player can intercept it sooner and the pass is safer.

7 Without Ball

This section is for the time that our player is not a goalie and the ball is not in his kickable area.

At this time we can do two jobs, intercepting the ball or going to a position. Actually, we simulate the ball and teammate players and see who intercepts the ball sooner than others. If the fastest player is ourself, we have to intercept the ball and if we are not that person we have to go to a good position.

8 Intercept

In Mersad 2006 we have four types of Interception

1. Turn and Dash Intercept: In Turn and Dash Intercept we do a few turns (or no turn) toward the ball then dash and intercept the ball (this is just for one cycle).
2. Dash Intercept: In Dash Intercept we always dash and intercept the ball but it is clear that sometimes we can't intercept the ball by this manner.
3. Back Dash Intercept: In Back Dash Intercept we always do back dash and intercept the Ball but again sometimes we can't intercept the ball by such manner.
4. Stop Intercept: In Stop Intercept we just wait for the ball to come to our kickable and don't do anything and again sometimes we can't intercept the ball by such manner.

Notice that three latter ways for interception are for special situations and have precedence to the first way. The algorithm for the first way is desined to be the default way. As an exception if two or more intercept ways are possible we choose the way that it's time is less than the others.

9 Positioning

In this section every player has a personal area which has to be in that area. Sometimes this area for attacker players or offense players changes. The player chooses a point from this area based on the ball position and dashes to that point.