Personal Report for Milestone 3

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1 Introduction.

For this Milestone and First Friendly I concentrated my work in the A.I team creating some of the core functions, assisting in refactoring our code and creating documentation. I also set out to organise our first unofficial friendly and continue to manage the team.

2 A.I Contribution.

My work in the A.I team consisted in developing methods that would help us get the ball in certain situations.

With Laura I worked on navigating behind the ball when our robot happens to be between the ball and the enemy goal. This function consisted in creating an imaginary ball who's coordinates were those of the real ball with an added offset. The reason we did this was so that the robot would avoid running into the ball and knock it into our goal, instead it would position itself behind the ball and re-orientate itself towards the enemy goal. This worked rather well in the simulator but, on the real pitch, the results were not as satisfactory.

Even though our method did not meet expectations the idea of using an imaginary point was used in another method I worked on with Laura and Michael Johnson which would find the *optimal imaginary point*. Unlike the previous imaginary point it would be placed in the position where the robot would most likely be able to score a goal once it came into contact with the ball.

Besides working on chasing the ball I also worked on getting the defend penalty state working. Knowing the direction of the enemy robot and our own we can find their intersection: this point should be where our robot should position itself as it would obstruct the enemy robot's view of the goal and therefore stop it from scoring.

As I had stated in my previous individual report I started writing a document explaining how our A.I works and how a user would go about creating their own A.I. in our system.

As of now the A.I seems adequate for the third Milestone, testing it ten times in a row it can avoid an object ten out of ten times and successfully score from any position six out of ten times. We hope to improve the system more before the milestone.

3 Team Management.

I have continued to arrange meetings for the team and taking notes. To prepare for the first friendly I also organised an unofficial friendly with Team 7 to test our robot which was a great opportunity to benchmark our robot and spot issues we could not spot using only our robot. I also continued to make sure that other team members had a task to work on so that the work load was not spread out unevenly. This proved to be slightly difficult as some team members were often absent.

4 Goals.

For the following Milestones and Friendlies I plan to continue working on the A.I focussing on the path finding as it continues to have certain issues such as not being able to reach the ball in certain conditions. I also plan on organising more unofficial friendlies as they are a great way of testing as they give a far better representation of our current condition. It also allows us to see how different teams approach some of the issues we have, giving us an opportunity to find new solutions to our problems.

5 Conclusion.

Overall I believe that I have contributed to a substantial amount of the work in the past three weeks. Unfortunately, due to the disappointing results in the first friendly I cannot claim to have done exceptional work, but I do believe that my work is worth at least a 6. I do believe that, in a whole, the A.I team (Laura, Martin, Michael Johnson and myself) have done a considerable amount of work for the milestone and have devoted a lot of their to get it done which should not be disregarded.