

My Second Sports Games Report

My objective

I'm Takashi Tsuruta. I live in Funabashi City, Japan. I propagate easy-understand Sci-Tech for everyone. I would like to inform my lovely people the following things. I hope that everyone could enjoy this report.

1. Introduction
2. About the position of the players
3. About the pattern
4. Conclusion

If you have any questions, comments or feedback, then feel free to reach out via [my website](#). And, I'd like to reponse your questions and take care of your problem while going for a walk, etc.

My Webpage <https://neupro-25874.web.app/en#contact> **My Walking Areas(at about 8 a.m.)**

QR Codes



Funabashishi Sports Park
Hoten Koen (Gurasupo)
North Ichikawa Sports Park

I had uploaded this report to my website. I've been updating this webpage on a daily basis.

1. Introduction

In the [previous report](#) , I've explained that the players always need to consider the other party and need a new strategy that the opponent doesn't know in order to continue to win interactive sports games (ISG). In This report, I'd like to consider the strategy (pattern) a little more deeply.

2. About the position of the players

Not limited to ISG, most sports games have a limited range of players to move. In this case, the position of the player is important.

For example, let's explain two extreme examples(soccer and baseball). One is that all the players of the opposing team are in one narrow range of the edges in soccer field. The other is all the infield and outfield players of the opposing team were in a narrow area on the left side in baseball field of play. In both cases, the players can easily get points. These examples are extreme, but if the opponent's position is in a desirable position for the player, there is a high possibility

(probability) of winning. I think it's very good to consider such a thing that is all positions of the opponent within the field are good or not for the player.

This idea is the same as mathematical optimization (maximum and minimum) problem. The problem of the maximum and minimum values of Quadratic function is also a simple example of the optimization problem. This is seen in various fields. I think this way of thinking is important regardless of the field, I always think, "If I find a certain range, what is the best answer (value)?"

[Further reading: Mathematical optimization from Wiki](#)

If you think about such a thing, you find out that there is an optimal position (unfavorable position) for the players in ISG, and you can think the same thing for your opponent. Now, let's think about these positions in the pattern.

3. About the pattern

First of all, before thinking about the position of the players, let's think about the pattern in a little more detail. In [previous report] (<https://neupro-25874.web.app/sports101.pdf>), I've explained about patterns that is "You can win if you act like this in this scene or this turn." This time, I will dig a little deeper into this and explain it.

There are various scenes in ISG. For example, when the player is offense, defending, or balanced. I'd like to call these scenes as Offense scene (Dominant scene), Defense scene (Inferior scene) and Balance scene (Equilibrium scene).

Depending on the ISG, ISG can divide two types. One is these scenes change and appear seamlessly (meaning that these three scenes will switch quickly). The other is these are clearly divided (in this case only Offense scene and Defense scene). I'd also like to call two types as Seamless type or Separate type. For example, in soccer and tennis examples, Offense scene, Defense scene and Balance scene appear seamlessly, so it's Seamless type. On the other hand, baseball and curling are Separate type because the Offense scene and Defense scene are clearly divided.

Which sports are Separate type is that each ISG will be determined by the rules of that sport. I'd like to explain this. When only the player is given an offense place (where to attack), the players can only offense there. When the player is in Offense scene now, the opponent can't enter there and can't offense. If there is a sport in such rules, Offense scene and Defense scene will be clearly divided.

In baseball case, when the players are offense, one of the players holds the bat and puts it in the batter box, but the players of the other team can't go in there with the bat and offense. On the other hand, in the case of soccer, players and opponents are not determined by the rule that players have to offense in one place, so Offense scene, Defense scene and Balance scene are easily switched.

I've explained about Scene so far. To summarize, each ISG is determined the type (Seamless type or Separate type) by the rule. In the case of Seamless type, one of the three scenes

appears at each time. The relationship between the player and the opponent about Scene is inversely proportional. If the player is in Offense scene, the opponent is in Defense scene, and vice versa. If it's equilibrium, both of them are Balance scene. For the case of Separate type, you think only two Scene(Offense scene and Defense scene).

Next, I'll think about Pattern in a little more detail. As explained previous time, if you think about Pattern that is "You can win if you act like this in this scene or this turn.", I recommend that you create Pattern for each of the three scenes ideally. In other words, for example, even in the case of Defense scene, I think there are patterns that change or lead to Offense scene.

If you consider so, in the case of Seamless type, it's better to think about each pattern that matches the three scenes, that is, Offense pattern, Defense pattern and Balance pattern. On the other hand, in the case of Separate type, I recommend that you consider each pattern that matches the two scenes, that is, Offense pattern and Defense pattern.

If I explain above with the extreme example in "2. About the position of the player", "If the opponent's position is in the desired position for the player, there is a high possibility (probability) of winning." is that the player and the opponent are in Offense scene and Defense scene respectively. Now, let's think about Pattern in this state. Players are in the middle of or starting Offense pattern in Offense scene, or when they can't move because they are in a bad position. On the other hand, the opponents are in the middle of or starting Defense pattern in Defense scene, or when they can't move because they are in a bad position.

"In the middle of Pattern " refers to the state when Pattern is being started before. In addition, "when they can't move because they are in a bad position" refers to the state where you can't start Pattern at that time.

If you consider so, in order to start Pattern, not only the position but also the posture becomes important for the players. I'd like to call the state of these patterns as Continue, Start and Stop respectively. Among them, it shows the state of Pattern that Continue is the best and Stop is the worst.

Again, back to the extreme example earlier, the best combination of Pattern states for the player is the player in Continue of Offense pattern and the opponent in Stop of Defense pattern. On the other hand, the best combination of Pattern states for the opponent in a disadvantageous situation is the player in Stop of Offense pattern and the opponent in Continue of Defense pattern.

4. Conclusion

This time, I've shown that there is an optimal position (unfavorable position) for the players in ISG, and I gave extreme examples and explained the best combination of Pattern states for the players and the opponents in one scene. In addition to the position of the players, the posture

was also explained as an important consideration. Next time, I'm going to think about the optimal position of the players in each Pattern.

Keywords: Mathematics (Optimization problem, Maximum and minimum value problem)