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時空資料視覺化期末報告計劃書

Video：
https://drive.google.com/file/d/1Xcnq2LZJW36Re61NexnVgQvHVTRuSDOx/view?usp=sharing

Title：*Exploring Football Attacking Patterns in different tactical Formations*

Motivation:

Competitive team sports have always attracted people's attention, between these sports, Football is always one of the most popular sport around the world. By following the rules, two sides of the team are going to compete for the control of the ball, meanwhile they have to prevent the other party from performing this process. The performance of a football team is based on many components, among of them, football tactics is always an important element of winning or performance. Tactical performance becomes increasingly important especially in the world of modern football, it is a necessary for the professional football players to have tactical consciousness, which is the key of winning a football match. It has been proved that all the football players are managed controlled by tactical ability. Tactical consciousness is the forerunner of exerting gifts, also the vitals of changing tactics and the core of enhancing ability of football player

Tactical formations are described by categorizing the players (not including the goalkeeper) according to their positioning along (not across) the pitch, formations are typically described by three or four numbers, which denote how many players are in each row of the formation from the most defensive to the most forward. For example, Figure 1 shows a 4-4-2 formation, which means four defenders, four midfielders, and two forwards. Common tactical formations include the formations 4-4-2, 4-2-3-1, 4-1-4-1, 4-3-3, or the currently prevalent 3-5-2. Different tactical formations offer different mindset of playing the match. Thus, I am interested in exploring and visualizing the mindset of playing between these tactical formations. For those people who didn't watch football before, this might be a way of understanding the complex system in football.

Questions:

1. How to differentiate attacking patterns in different tactical formations?
   The attacking sequences of each matches will be classified into different types of attacking patterns by its spatial distribution.
2. The tactical formations looked similar for me, is there really an obvious differentiation?
   When classifying each attacking sequences, frequency of the similar sequences will include to my analysis, it might be extremely hard to imagine, but I am sure the result will be absolutely clear.

Data set: https://figshare.com/collections/Soccer_match_event_dataset/4415000/5

Reference

Pappalardo, Luca; Massucco, Emanuele (2019): Soccer match event dataset. figshare. Collection.

https://doi.org/10.6084/m9.figshare.c.4415000.v5

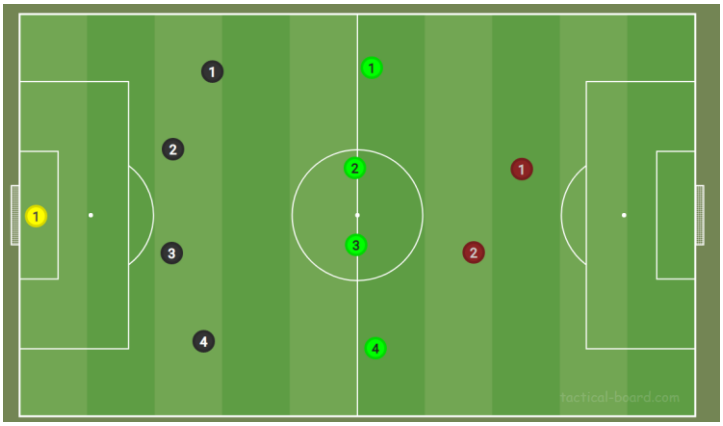

Figure 1: 4-4-2 Formation

(Yellow color: Goalkeeper, Black color: Defenders, Green color: Midfielders, Red color: Strikers)