Nashville SC – Internship Project II

By Morgan Abbitt

https://github.com/morganabbitt/MLS-Project2

This small project was extremely interesting and overall very enjoyable. For this project we were tasked with producing an insight and visualization using given tracking data. Some prompts given were
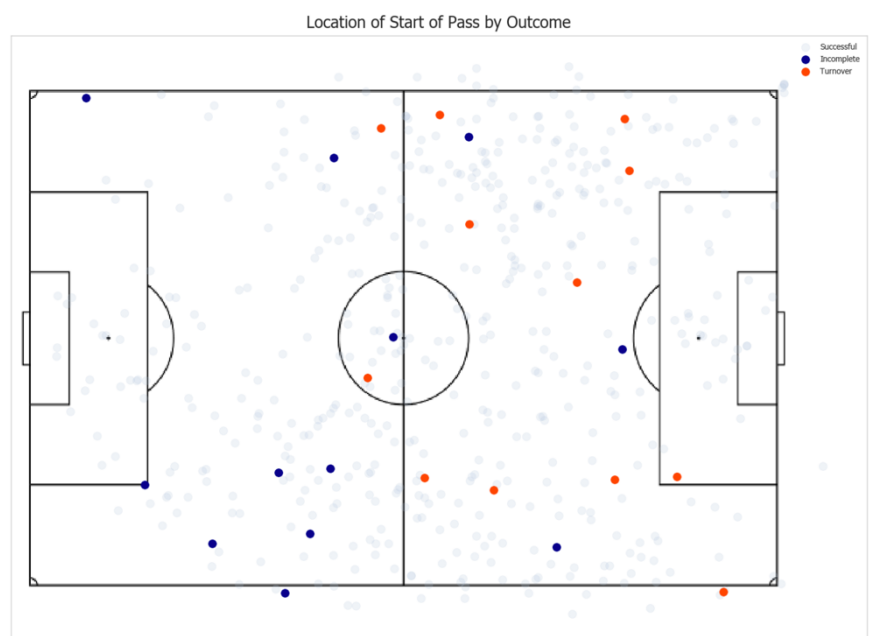
> What went wrong for Nashville on the Valeri goal?
> Did any Nashville players stand out in possession?
> What Nashville sequences were most likely to end in a goal?
> Did Portland display any particular patterns in possession?

While these were not the only prompts, they provided a solid start to working with this data and finding an end result.
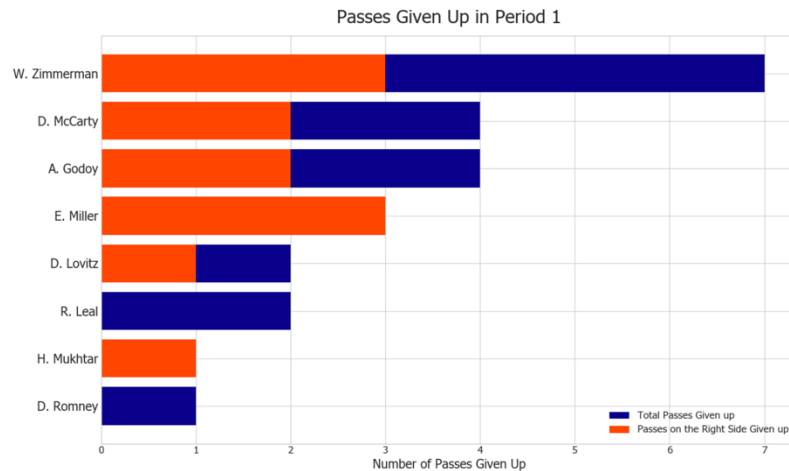
After cleaning and analyzing the opta data, marking data, and tracking data that revolved around the game on 3/8/20 of Portland Timbers vs Nashville SC. I began to perform eda on the marking data. After realizing quickly that there were many more passes than shots to analyze, I chose to analyze passing. I was really looking for some sort of outcome from each pass, and when I couldn't find that I used feature engineering to create a feature titled passOutcome, that checked the receiver and the team that had the next pass to decide if a pass was successful, incomplete, or a turnover. This moved along my process quite a bit and allowed me to dive further into Nashville's passes and their outcomes.

Using some functions that plotted the field and the ball locations I was able to get a better idea of the pass outcomes in certain areas of the field.

On the right you can see the locations of the beginning of all of Nashville SC's passes in the first half. Red represents turnovers, Blue represents incompletions, and faded grey represents successful passes.

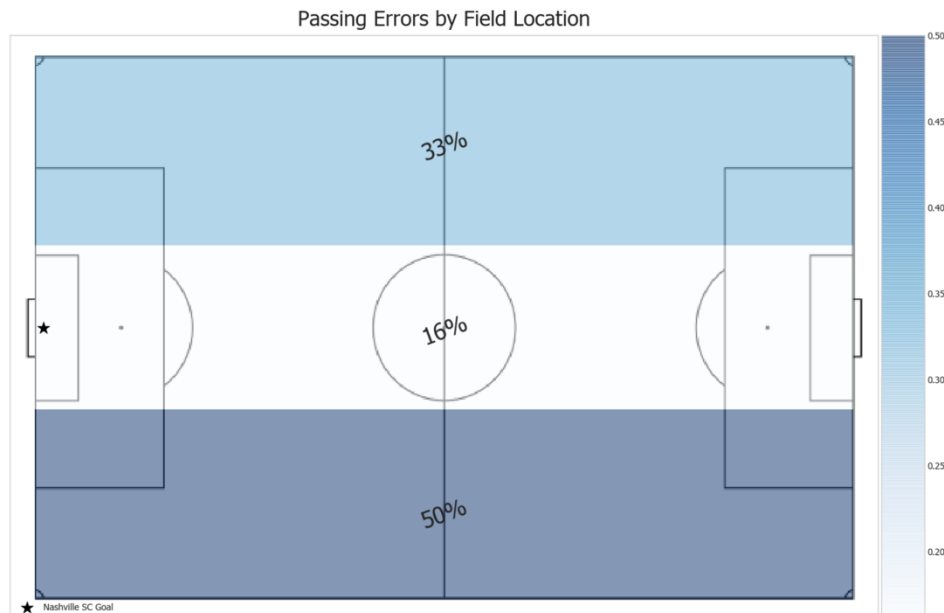
Location of Start of Pass by Outcome

This analysis was taken further, and I matched these passes with playerIds to get a better idea of why these passes are being unsuccessful. I was able to find out that more than half of the unsuccessful passes from the first half occurred on this right side of the field.

Nashville's RCB and RB, Zimmerman and Miller, accounted for most of the passes that were unsuccessful on this side of the field.

My final takeaways are that Nashville performed poorly on the right flank of their lineup. All of the passes that were turnovers on this side of the field were also forward passes. For future work I would want to analyze more games than this single game to determine Nashville's strength in the RB and RCB position in the attack. This could easily be that Portland LB was able to read these forward passes to intercept them.

My final visualization illustrates the passing errors from Nashville in the first half:

Future Work:

I really wanted to use Machine Learning on this project but was unable to find a path that a model would be effective in, and did not find the time. In the future I would build a model to predict the next "most optimal pass" based on the defenders positioning, the ball location, the type of player on the ball, etc.