Visualization Project

NC State Women's tennis has used the CIZR software (CIZR.com) since 2018 to tag and create stat reports for individual matches during the season. The stats summary for each match produces 17 metrics that are tagged and linked back to the match film. In its current form, all matches are individual entities which coaches and players then review using the software.

As coaches we are looking to compile the data to create a cumulative stats report for each player. While individual reports for each match are a great tool to use with players, building a profile based on multiple matches can help to show larger trends regardless of opponent. The goal of cumulative stats is two fold, firstly we would like to identify specific areas each player needs to address in their development relative to deficits in their stats. Secondly, we would like to identify trends as a whole relative to the team.

Having accurate stats that we can present to the players helps drive development plans that are used to guide practice and schedule decisions. Highlighting deficits as well as sparking objective conversations about what is happening during competition. For the majority of tennis players, college is their first opportunity to see match film and stats of themselves.

Goals of the project:

1. Create a cumulative stats profile for each NC State player based on the 17 metrics. Visualize key metric averages for both season and career.
2. Create a team leaderboard for each stat to help visualize which players are stronger in each area based on averages in each metric.
3. Create a stats profile for each player based on wins vs losses. Are we able to identify key trends that are different in wins vs losses that might be predictors of outcome?
4. Visualization of trends over time for the key metrics for individuals. For example, can we show a trend line of a player's first serve % over their recorded matches?
5. Visualization of trends over time for the key metrics for the team. For example, can we show a trend line of a team's first serve % over their recorded matches?
6. Shows metric vs stats relative to indoor vs outdoor conditions. Are there significant differences in any of the key metrics based on conditions?
7. Create a plus/minus ratio for each player. Using Bill Jacobsen Aggressive error margin formula ((Winner + Forced Errors)-unforced errors)
8. Develop a First serve performance rating metric. Using Craig O'Shannessy formula of first serve percentage multiplied by the decimal of first serve win percentage.
9. Develop a manual input interface for the women's tennis team manager to update stats and CSV real time as the season progresses. The goal is to create snapshots of trends as the season progresses.