Seattle Mariners - Defensive Report on Player 15411

Overview

The dataset provided includes various attributes of each pitch, including information about the ball's exit speed, vertical and horizontal exit angles, and the defensive players involved. However, the `first_fielder` column only contains values when the ball was caught for an out (`is_airout == 1`), limiting our ability to compare fielders using this column alone.

Our goal is to compare **player 15411** (centerfielder) against all other centerfielders in the league without relying on the `first_fielder` column. Instead, we will assign responsibility for every batted ball to a fielder utilizing a random forest classifier. Moreover, we will filter out any balls that have a horizontal exit angle of less than -69.86 and more than 60.18 (based on previous caught balls), since we are assuming that the ball will be foul and uncatchable for the fielder. Additionally, balls that travel more than 400 feet (the average homerun distance) will be filtered out, since it is unfair to measure a fielder based on home run balls.

Future Work

Additionally, evaluating the difficulty of a play provides valuable insights into player performance. By considering several features of a batted ball—such as its exit speed, launch angles, and spin rate—we can create a **difficulty score** that quantifies how challenging a particular play was for the fielder responsible. However, it is challenging to value the difficulty of a fly ball since it is possible not all variables are equally important in determining the difficulty of a ball and different variables are measured in different units.
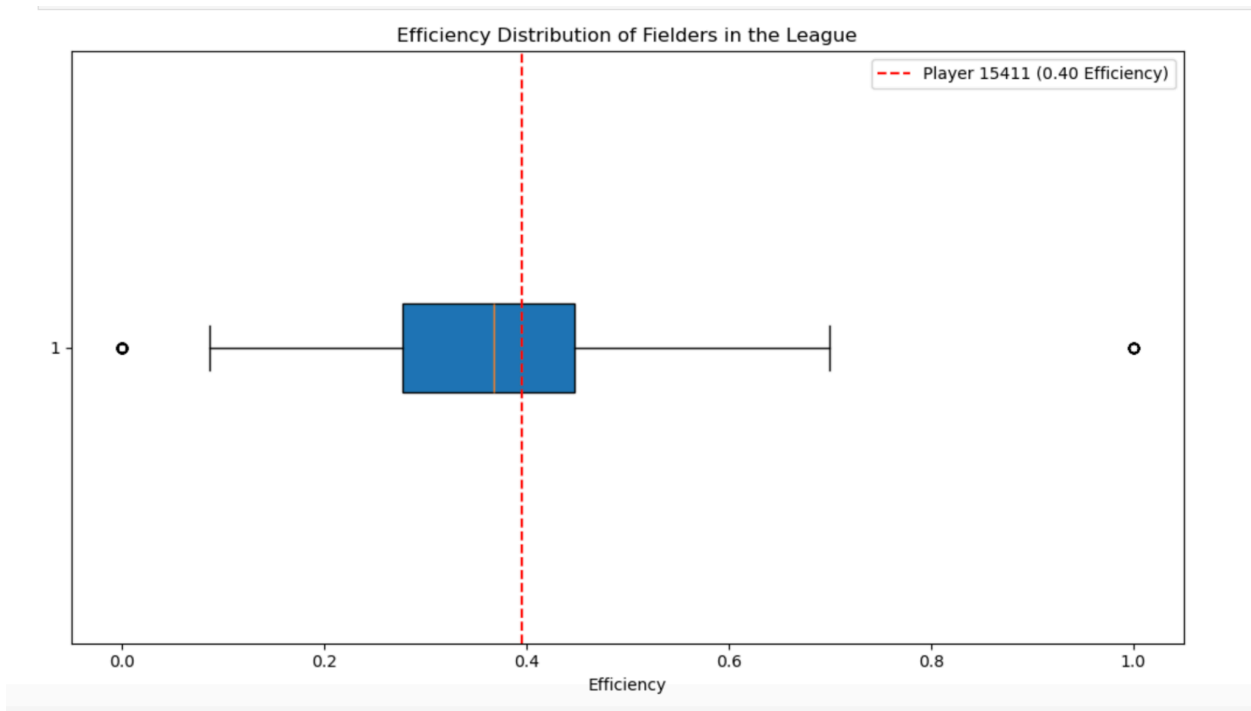

Key Metrics

1. **Opportunity and Efficiency**:
   - **Total Opportunities**: Represents the number of times a batted ball entered player 15411's assigned zone.
   - **Air Out Success**: Counts the successful outs made from fly balls in the player's zone.
   - **Efficiency**: Calculated as the ratio of air outs to total opportunities, indicating the player's effectiveness in making outs relative to chances. Player 15411's efficiency was *0.40* compared to the league average of *0.36* which means player 15411's efficiency rate places above most centerfielders, indicating effective positioning, catch success, and read of the ball trajectory.

Visual Summary

1. **Efficiency Distribution**: the distribution highlights player 15411's effectiveness in converting challenging plays to outs relative to other centerfielders, reinforcing their impact in the outfield.

Conclusion

Player 15411 is a slightly above-average efficient outfielder. His level of efficiency underscores their value as a dependable outfielder who consistently strengthens the team's defensive framework. With their proven ability to read plays effectively and maintain a high success rate, player 15411 is a decent asset in safeguarding the outfield and ensuring stability in crucial game situations.