Monday Montage

Rally ending skill importance

This past week I have put fourth efforts into supervised machine learning.

“Supervised learning is where you have input variables (x) and an output variable (Y) and you use an algorithm to learn the mapping function from the input to the output. The goal is to approximate the mapping function so well that when you have new input data (x) that you can predict the output variables (Y) for that data.”

Here is what my (x) and (Y) considers:

- I am looking at main draw matches won vs lost from 4 star, 5 star, WTF, and WCH. This is my (Y) or output variable.
- I am looking at these rally ending skills. This is my (x) or input variables:
    - Attack Kills
    - Attack Errors
    - Serve Ace
    - Serve Error
    - Block Stuff

You can read more about supervised machine learning if your interested https://machinelearningmastery.com/supervised-and-unsupervised-machine-learning-algorithms/ (https://machinelearningmastery.com/supervised-and-unsupervised-machine-learning-algorithms/).

Women’s rally ending skill exploration

This data set includes 918 matches, played in main draw, from the 2019 season (HAG 2019 - CHE 2019). Rally ending skills for 4 star, 5 star, World Championships and World Tour Final.

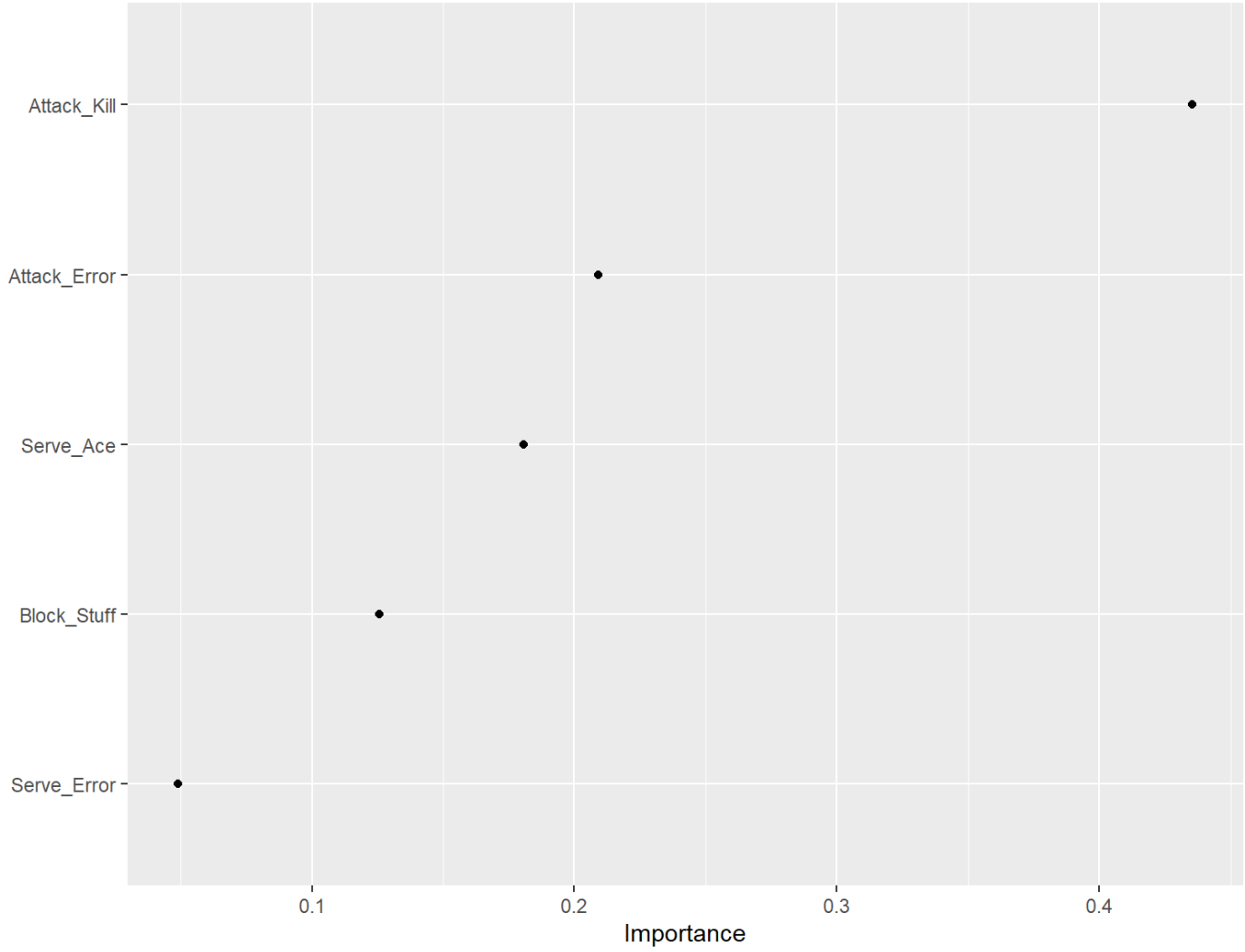
Plot of importance

This in no way implies the variables that occur within these 5 rally ending skills. For example maybe my team got stuffed blocked because I threw a terrible set to my partner or it is insanley windy one day and my partners set caused me to attack in the net. Maybe the serve ace was a trickler or 3 of the 7 attack kills I got were digs or passes over the net. Plus other variables. This becomes more of a starting point of what to look at next in depth.

```
## i Creating pre-processing data to finalize unknown parameter: mtry
```

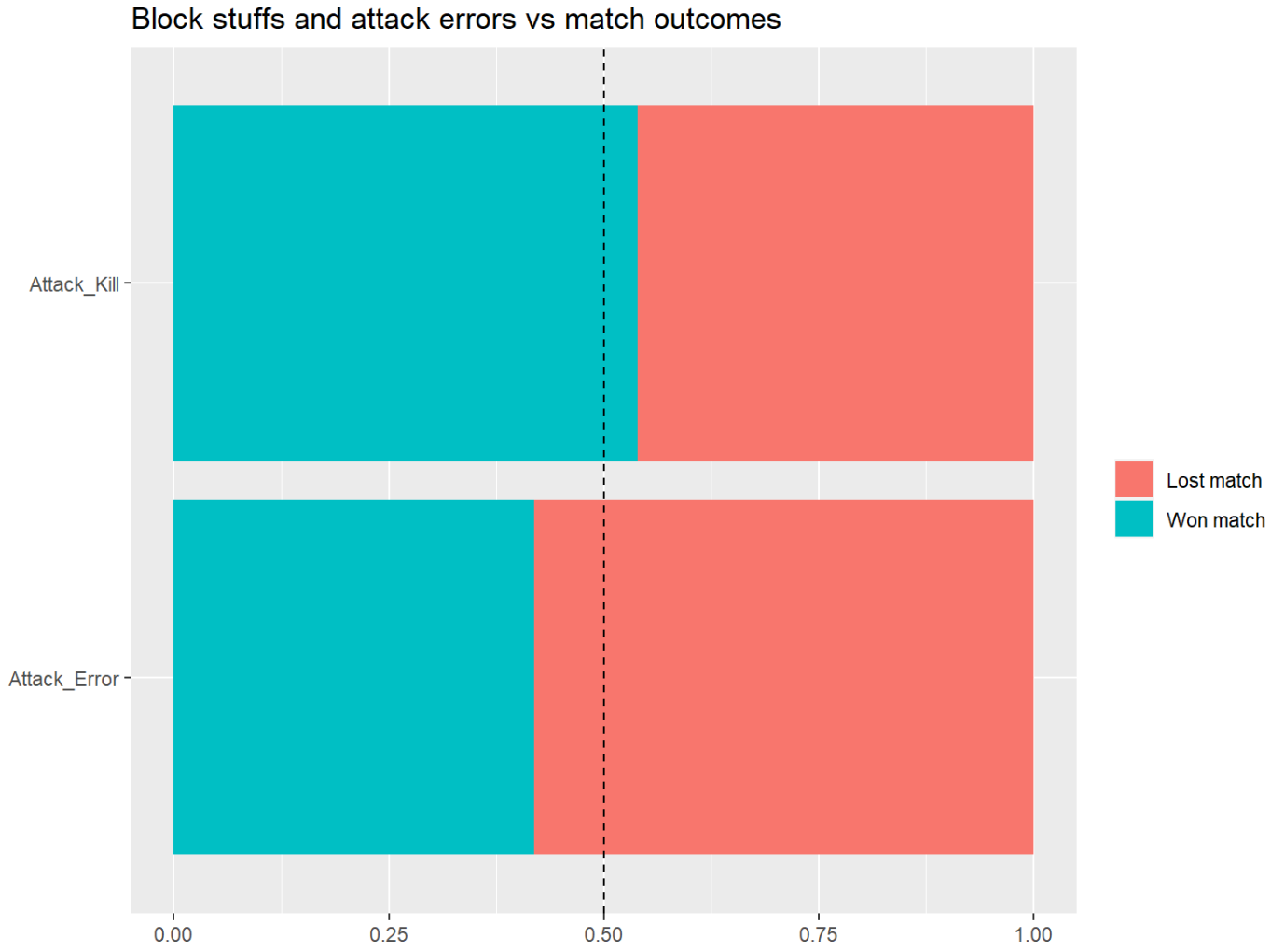
```
## # A tibble: 100 x 11
##     mtry min_n tree_depth learn_rate loss_reduction sample_size .metric
##    <int> <int>      <int>      <dbl>          <dbl>       <dbl> <chr>
##  1     1    10         13   2.36e-10  0.0256              0.299 accura~
##  2     1    10         13   2.36e-10  0.0256              0.299 roc_auc
##  3     1    12          5   1.05e- 4  0.00000381          0.430 accura~
##  4     1    12          5   1.05e- 4  0.00000381          0.430 roc_auc
##  5     1    30         12   1.28e- 6  0.00000000778       0.274 accura~
##  6     1    30         12   1.28e- 6  0.00000000778       0.274 roc_auc
##  7     1    33          5   7.99e- 9  1.87                0.577 accura~
##  8     1    33          5   7.99e- 9  1.87                0.577 roc_auc
##  9     1    38          3   5.16e- 7  0.00321             0.350 accura~
## 10     1    38          3   5.16e- 7  0.00321             0.350 roc_auc
## # ... with 90 more rows, and 4 more variables: .estimator <chr>, mean <dbl>,
## #   n <int>, std_err <dbl>
```

```
## Warning: `as.tibble()` is deprecated as of tibble 2.0.0.
## Please use `as_tibble()` instead.
## The signature and semantics have changed, see `?as_tibble`.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_warnings()` to see where this warning was generated.
```

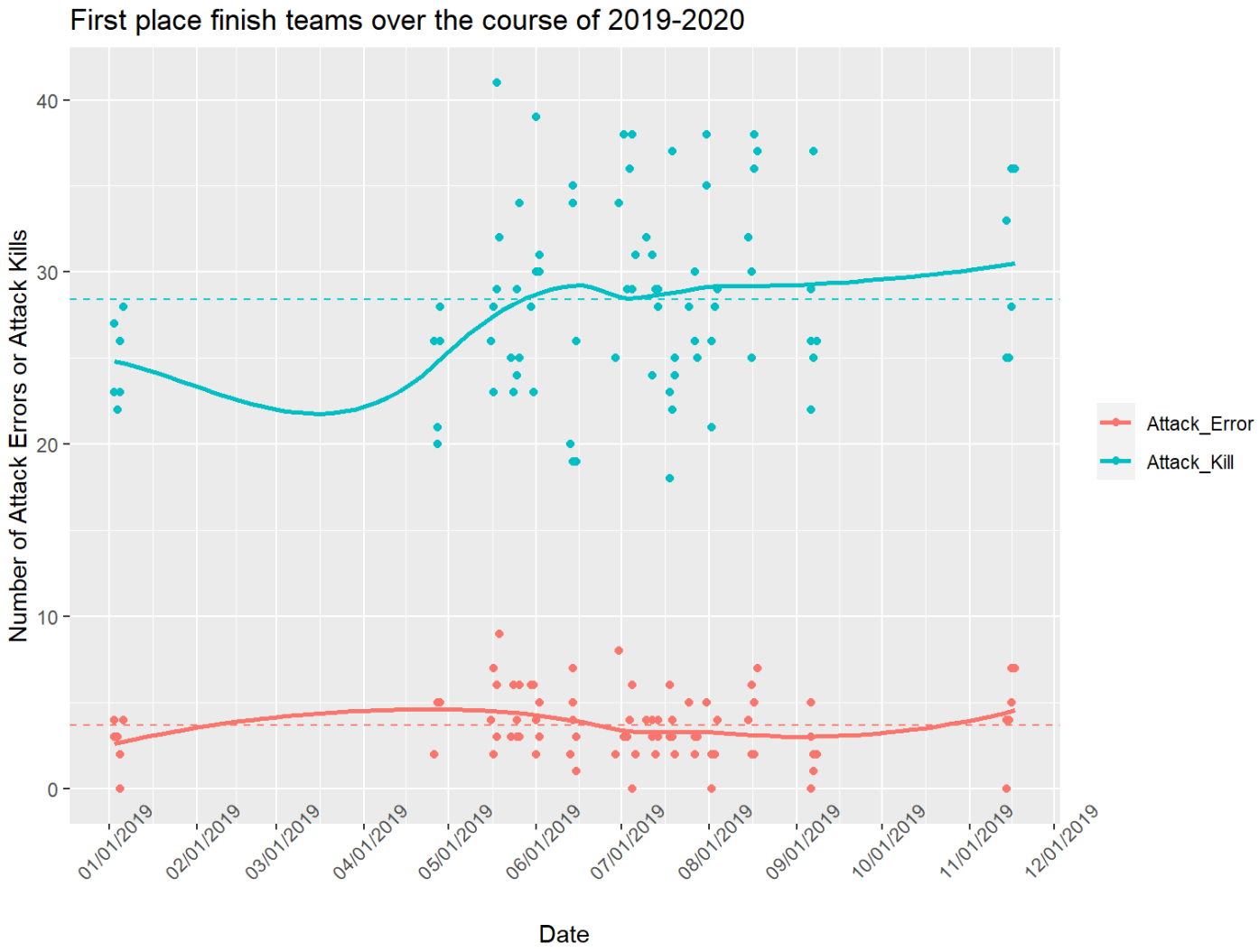


Attack errors and Block stuffs exploration

These plots explore the two most important rally ending stats in this model.




```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```


First place finish teams over the course of 2019-2020
Number of Attack Errors or Attack Kills
40
30
20
10
0
01/01/2019
02/01/2019
03/01/2019
04/01/2019
05/01/2019
06/01/2019
07/01/2019
08/01/2019
09/01/2019
10/01/2019
11/01/2019
12/01/2019
Date
Attack_Error
Attack_Kill