## Logistic Regression

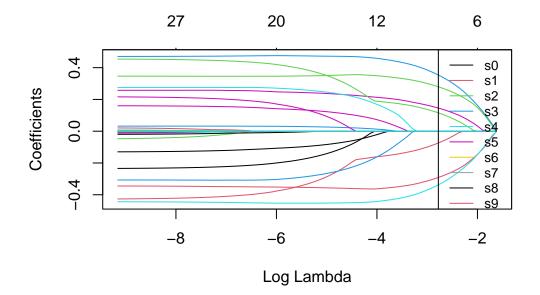
## Caitlin Tuttle

```
-- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
v dplyr 1.1.4 v readr 2.1.5
v lubridate 1.9.3
                  v tidyr 1.3.0
       1.0.2
v purrr
-- Conflicts ----- tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()
               masks stats::lag()
i Use the conflicted package (<a href="http://conflicted.r-lib.org/">http://conflicted.r-lib.org/</a>) to force all conflicts to become
-- Attaching packages ----- tidymodels 1.1.1 --
            1.0.5 v rsample 1.2.0
v broom
           1.2.0 v tune 1.1.2
1.0.6 v workflows 1.1.3
v dials
v infer
v modeldata 1.2.0 v workflowsets 1.0.1 v parsnip 1.1.1 v yardstick 1.2.0
v recipes
            1.0.9
-- Conflicts ----- tidymodels conflicts() --
x scales::discard() masks purrr::discard()
x dplyr::filter() masks stats::filter()
x recipes::fixed() masks stringr::fixed()
x dplyr::lag() masks stats::lag()
x yardstick::spec() masks readr::spec()
x recipes::step() masks stats::step()
* Search for functions across packages at https://www.tidymodels.org/find/
  setwd("~/Downloads")
  eda <- read_csv("Wimbledon_featured_matches.csv", show_col_types = FALSE)
```

```
library(glmnet)
Loading required package: Matrix
Attaching package: 'Matrix'
The following objects are masked from 'package:tidyr':
    expand, pack, unpack
Loaded glmnet 4.1-8
  library(mice)
Attaching package: 'mice'
The following object is masked from 'package:stats':
    filter
The following objects are masked from 'package:base':
    cbind, rbind
  library(missForest)
  library(glmnet)
  library(mice)
  library(missForest)
  library(dplyr)
  library(dplyr)
  library(missForest)
  # Assuming 'eda' is your dataframe
  exclude_cols1 <- c("point_victor")</pre>
```

```
# Remove rows with missing values
  eda <- na.omit(eda)
  # Convert 'point_victor' to numeric if it's not already
  eda$point_victor <- as.numeric(as.character(eda$point_victor))</pre>
  # Replace missing values in 'elapsed_time' with the mean
  eda$elapsed_time[is.na(eda$elapsed_time)] <- mean(eda$elapsed_time, na.rm = TRUE)
  # Convert all variables to factors or numeric as needed
  eda[] <- lapply(eda, function(x) if (is.character(x)) as.factor(x) else x)
  # Split the data into predictors (X) and response variable (y)
  X <- as.matrix(eda[, -which(names(eda) %in% exclude_cols1)]) # Exclude specified columns</pre>
  y <- as.numeric(as.character(eda$point_victor)) # Response variable as numeric
  # Check for missing values in X and y
  if (any(is.na(X)) || any(is.na(y))) {
    stop("Missing values found in predictors (X) or response variable (y). Handle them appro
  chosen_lambda <- 0.01
  # Fit LASSO regression with the chosen lambda
  lasso_model <- glmnet(X, y, alpha = 1)</pre>
Warning in storage.mode(xd) <- "double": NAs introduced by coercion
```

```
plot(lasso_model, xvar = "lambda", label = FALSE)
legend("topright", legend = colnames(lasso_model$beta), col = 1:ncol(lasso_model$beta), lt
```



## print(lasso\_model)

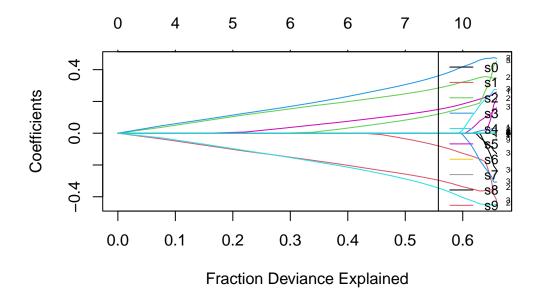
```
Call: glmnet(x = X, y = y, alpha = 1)
```

- Df %Dev Lambda
- 1 0 0.00 0.197900
- 2 4 7.69 0.180300
- 3 4 15.37 0.164300
- 4 5 22.12 0.149700
- 5 5 28.55 0.136400
- 6 6 33.95 0.124300
- 7 6 38.61 0.113300
- 8 6 42.47 0.103200
- 9 7 45.76 0.094030
- 10 7 48.59 0.085670
- 11 7 50.94 0.078060
- 12 7 52.89 0.071130
- 13 7 54.50 0.064810
- 14 7 55.85 0.059050
- 15 7 56.96 0.053810
- 16 7 57.89 0.049030

- 17 7 58.66 0.044670
- 18 7 59.30 0.040700
- 19 9 59.89 0.037090
- 20 10 60.49 0.033790
- 21 10 61.02 0.030790
- 22 10 61.46 0.028050
- 23 11 61.86 0.025560
- 24 11 62.18 0.023290
- 25 12 62.47 0.021220
- 26 12 62.71 0.019340
- 27 12 62.91 0.017620
- 28 13 63.18 0.016050
- 29 13 63.45 0.014630
- 30 13 63.68 0.013330
- 31 13 63.87 0.012140
- 32 14 64.09 0.011070
- 33 14 64.30 0.010080
- 34 14 64.48 0.009187
- 35 15 64.63 0.008370
- 36 15 64.75 0.007627
- 37 16 64.86 0.006949
- 38 16 64.94 0.006332
- 39 17 65.02 0.005769
- 40 17 65.08 0.005257
- 41 17 65.14 0.004790
- -- -- -- -- -- -- -- --
- 42 17 65.18 0.004364 43 17 65.22 0.003977
- 44 17 65.25 0.003623
- 45 17 65.27 0.003301
- 46 17 65.29 0.003008
- 47 17 65.31 0.002741
- 48 20 65.33 0.002497
- 49 20 65.38 0.002276
- 50 20 65.42 0.002073
- 51 20 65.46 0.001889
- 52 20 65.49 0.001721
- 53 22 65.53 0.001568
- 54 24 65.58 0.001429
- 55 24 65.62 0.001302
- 56 24 65.66 0.001186
- 57 24 65.69 0.001081
- 58 23 65.72 0.000985
- 59 24 65.74 0.000897

```
60 24 65.76 0.000818
61 24 65.78 0.000745
62 27 65.79 0.000679
63 27 65.81 0.000619
64 27 65.82 0.000564
65 27 65.83 0.000514
66 27 65.84 0.000468
67 27 65.84 0.000426
68 27 65.85 0.000388
69 27 65.85 0.000354
70 27 65.86 0.000323
71 27 65.86 0.000294
72 27 65.87 0.000268
73 27 65.87 0.000244
74 27 65.87 0.000222
75 27 65.87 0.000203
76 27 65.87 0.000185
77 27 65.88 0.000168
78 27 65.88 0.000153
79 27 65.88 0.000140
80 27 65.88 0.000127
81 28 65.88 0.000116
82 28 65.88 0.000106
  coef(lasso_model, s = 0.1)
46 x 1 sparse Matrix of class "dgCMatrix"
(Intercept)
                    1.346617215
match_id
player1
player2
elapsed_time
set_no
game_no
point_no
p1_sets
p2_sets
p1_games
p2_games
p1_score
```

```
p2_score
                    0.090322066
server
serve_no
p1_points_won
p2_points_won
game_victor
set_victor
p1_ace
p2_ace
                 -0.222489310
p1_winner
p2_winner
                  0.215913036
winner_shot_type
p1_double_fault
p2_double_fault .
p1_unf_err 0.257321435
p2_unf_err -0.238452696
p1_net_pt
p2_net_pt
p1_net_pt_won -0.002923491
p2_net_pt_won
                  0.049554078
p1_break_pt
p2_break_pt
p1_break_pt_won
p2_break_pt_won
p1_break_pt_missed .
p2_break_pt_missed
p1_distance_run
p2_distance_run
rally_count
speed_mph
serve_width
serve_depth
return_depth
  plot(lasso_model, xvar = "dev", label = TRUE)
   legend("topright", legend = colnames(lasso_model$beta), col = 1:ncol(lasso_model$beta), lt
```



lasso\_coefficients <- coef(lasso\_model)
cat("LASSO Coefficients:\n")</pre>

## LASSO Coefficients:

lasso\_coefficients\_matrix <- as.matrix(lasso\_coefficients)
print(lasso\_coefficients\_matrix)</pre>

	s0	s1	s2	s3	s4
(Intercept)	1.482885	1.48149530	1.48251091	1.472339375	1.43809567
match_id	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
player1	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
player2	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
${\tt elapsed\_time}$	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
set_no	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
game_no	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
point_no	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
p1_sets	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
p2_sets	0.000000	0.00000000	0.00000000	0.000000000	0.00000000
p1 games	0.000000	0.00000000	0.00000000	0.000000000	0.00000000

```
0.000000
                             0.00000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
p2_games
p1_score
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.00000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
p2_score
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.007371245
                                                                   0.03067547
server
                             0.00000000
                                         0.00000000
serve_no
                   0.000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
p1_points_won
p2_points_won
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
game_victor
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.00000000
                                         0.00000000
set_victor
                                                     0.00000000
                                                                   0.0000000
p1_ace
                   0.000000
                             0.00000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.0000000
                                         0.0000000
                                                      0.00000000
                                                                   0.0000000
p2_ace
                   0.000000 - 0.03663428 - 0.07715717 - 0.113056468 - 0.14345294
p1_winner
                   0.000000
                             0.03739731
                                         0.07912788
                                                     0.115834280
                                                                   0.14633033
p2_winner
                             0.0000000
                                         0.00000000
                                                     0.00000000
winner_shot_type
                   0.000000
                                                                   0.0000000
p1_double_fault
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.00000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p2_double_fault
p1_unf_err
                   0.000000
                             0.04732759
                                         0.08817251
                                                     0.125555372
                                                                   0.15999378
                   0.000000 -0.02978277 -0.07092727 -0.108940937 -0.14475357
p2_unf_err
                   0.000000
                             0.0000000
                                         0.0000000
                                                      0.00000000
                                                                   0.0000000
p1_net_pt
                   0.000000
                             0.00000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p2_net_pt
                   0.000000
                                                                   0.0000000
p1_net_pt_won
                             0.0000000
                                         0.0000000
                                                     0.00000000
p2_net_pt_won
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p1_break_pt
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
p2_break_pt
                                                                   0.0000000
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p1_break_pt_won
                             0.0000000
                                         0.00000000
                                                     0.00000000
                   0.000000
                                                                   0.0000000
p2_break_pt_won
p1_break_pt_missed 0.000000
                             0.00000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p2_break_pt_missed 0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p1_distance_run
                   0.000000
                   0.000000
                             0.0000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
p2_distance_run
                   0.000000
                             0.00000000
                                         0.00000000
                                                     0.00000000
                                                                   0.0000000
rally_count
                   0.000000
                             0.0000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
speed_mph
serve_width
                   0.000000
                             0.0000000
                                         0.00000000
                                                      0.00000000
                                                                   0.0000000
                   0.000000
                             0.0000000
                                         0.0000000
                                                      0.00000000
                                                                   0.0000000
serve_depth
                   0.000000
                             0.00000000
                                         0.0000000
                                                     0.00000000
                                                                   0.0000000
return_depth
                            s5
                                        s6
                                                     s7
                                                                  s8
                                                                              s9
                                                                      1.31508852
(Intercept)
                    1.40711835
                                1.37935860
                                            1.35406970
                                                         1.332680655
                    0.0000000
                                0.00000000
                                            0.0000000
                                                         0.00000000
                                                                      0.00000000
match_id
                    0.0000000
                                0.0000000
                                            0.0000000
                                                         0.00000000
                                                                      0.0000000
player1
player2
                    0.00000000
                                0.0000000
                                            0.00000000
                                                         0.00000000
                                                                      0.00000000
                    0.0000000
                                0.0000000
                                            0.0000000
                                                         0.00000000
                                                                      0.0000000
elapsed_time
                    0.00000000
                                0.0000000
                                            0.0000000
                                                         0.00000000
                                                                      0.00000000
set_no
                    0.0000000
                                0.0000000
                                            0.0000000
                                                         0.00000000
                                                                      0.0000000
game_no
```

```
0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
point_no
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
p1_sets
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
p2_sets
                    0.0000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
p1_games
                                0.0000000
                                            0.00000000
p2_games
                    0.00000000
                                                        0.00000000
                                                                      0.00000000
                    0.0000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
p1_score
                                                                      0.0000000
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
p2_score
server
                    0.05142592
                                0.06920487
                                            0.08540349
                                                        0.099520068
                                                                      0.11165097
                                0.0000000
                                            0.00000000
                    0.00000000
                                                        0.00000000
                                                                      0.00000000
serve_no
p1_points_won
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
p2_points_won
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
game_victor
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
set_victor
                                0.0000000
                    0.00000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
p1_ace
p2_ace
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
                   -0.17073206 -0.19448692
                                           -0.21614157 -0.234359937 -0.24927649
p1_winner
                    0.17242322
                                0.19226869
                                            0.21034352
                                                        0.226328344
                                                                      0.24031292
p2_winner
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
winner_shot_type
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
p1_double_fault
p2_double_fault
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
                                                                      0.29422366
p1_unf_err
                    0.19175585
                                0.22166546
                                            0.24891277
                                                        0.273046101
p2_unf_err
                   -0.17684711 -0.20477629
                                           -0.23022765 -0.253833976 -0.27583253
p1_net_pt
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
p2_net_pt
                                                                      0.00000000
                    0.00000000
                                0.0000000
                                            0.00000000 -0.008390578 -0.02560389
p1_net_pt_won
                                            0.04389903
                    0.00603960
                                0.02584872
                                                        0.060129332
                                                                      0.07467159
p2_net_pt_won
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
p1_break_pt
p2_break_pt
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
                                0.0000000
                                            0.00000000
p1_break_pt_won
                    0.00000000
                                                        0.00000000
                                                                      0.00000000
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.00000000
p2_break_pt_won
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
p1_break_pt_missed
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
p2_break_pt_missed
p1_distance_run
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.00000000
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
p2_distance_run
                                0.0000000
                                            0.00000000
                                                        0.00000000
rally_count
                    0.00000000
                                                                      0.00000000
speed_mph
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.00000000
serve_width
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                      0.0000000
serve_depth
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                      0.0000000
return_depth
                           s10
                                       s11
                                                   s12
                                                                s13
                                                                            s14
                    1.29906010
                                1.28445560
                                            1.27114852
                                                        1.25902361
                                                                     1.24797584
(Intercept)
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
match_id
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
player1
```

```
0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
player2
elapsed_time
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                     0.0000000
set_no
                    0.0000000
                                0.0000000
                                            0.00000000
                                                        0.0000000
                                                                     0.0000000
game_no
                                                        0.00000000
point_no
                    0.00000000
                                0.0000000
                                            0.00000000
                                                                     0.0000000
                    0.0000000
                                0.0000000
                                            0.00000000
                                                        0.0000000
p1_sets
                                                                     0.0000000
p2_sets
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
p1_games
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
                                0.0000000
                                            0.00000000
p2_games
                    0.00000000
                                                        0.00000000
                                                                     0.0000000
p1_score
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p2_score
                                            0.14194839
                                                        0.15030874
server
                    0.12270285
                                0.13277292
                                                                     0.15792637
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
serve_no
                                0.0000000
                                            0.00000000
                                                        0.00000000
p1_points_won
                    0.00000000
                                                                     0.0000000
p2_points_won
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
game_victor
set_victor
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
p1_ace
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p2_ace
                   -0.26286738 -0.27525090
                                           -0.28653430 -0.29681531 -0.30618299
p1_winner
p2_winner
                    0.25305932
                                0.26467338
                                            0.27525567
                                                        0.28489786
                                                                     0.29368347
winner_shot_type
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
p1_double_fault
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p2_double_fault
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p1_unf_err
                    0.31352243
                                0.33110675
                                            0.34712892
                                                        0.36172774
                                                                     0.37502963
p2_unf_err
                   -0.29587483 -0.31413663 -0.33077611 -0.34593738 -0.35975176
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
p1_net_pt
                                                                     0.0000000
p2_net_pt
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p1_net_pt_won
                   -0.04128768 -0.05557816 -0.06859912 -0.08046334 -0.09127357
                    0.08792124
                                0.09999384
                                            0.11099394
                                                        0.12101682
                                                                     0.13014929
p2_net_pt_won
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p1_break_pt
p2_break_pt
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
p1_break_pt_won
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.00000000
                                                                     0.0000000
p2_break_pt_won
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.0000000
                                                                     0.0000000
                                                        0.0000000
p1_break_pt_missed
                    0.00000000
                                0.0000000
                                            0.00000000
                                                                     0.0000000
p2_break_pt_missed
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
p1_distance_run
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.0000000
                                                                     0.0000000
p2_distance_run
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.0000000
                                                                     0.0000000
                                0.0000000
rally_count
                    0.00000000
                                            0.0000000
                                                        0.00000000
                                                                     0.0000000
speed_mph
                    0.00000000
                                0.0000000
                                            0.00000000
                                                        0.00000000
                                                                     0.0000000
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
serve_width
                    0.00000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
serve_depth
return_depth
                    0.0000000
                                0.0000000
                                            0.0000000
                                                        0.0000000
                                                                     0.0000000
```

	s15	s16	s17	s18	s19
(Intercept)	1.2379095	1.2287375	1.2203802	1.211841798	1.202634094
match_id	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
player1	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
player2	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
elapsed_time	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
set_no	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
game_no	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
point_no	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_sets	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_sets	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_games	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_games	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_score	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_score	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
server	0.1648673	0.1711916	0.1769540	0.182739383	0.188974877
serve_no	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_points_won	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_points_won	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
<pre>game_victor</pre>	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
set_victor	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_ace	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_ace	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_winner	-0.3147185	-0.3224957	-0.3295820	-0.335802878	-0.340954845
p2_winner	0.3016886	0.3089825	0.3156285	0.321450290	0.326323734
winner_shot_type	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_double_fault	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_double_fault	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_unf_err	0.3871498	0.3981933	0.4082557	0.417090045	0.424607895
p2_unf_err	-0.3723389	-0.3838079	-0.3942579	-0.403491323	-0.411052599
p1_net_pt	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_net_pt	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_net_pt_won	-0.1011234	-0.1100983	-0.1182758	-0.125506450	-0.131812969
p2_net_pt_won	0.1384705	0.1460524	0.1529608	0.159171419	0.164497636
p1_break_pt	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_break_pt	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_break_pt_won	0.0000000	0.0000000	0.0000000	-0.004866147	
p2_break_pt_won	0.0000000	0.0000000	0.0000000	0.016265528	0.047192018
p1_break_pt_missed	0.0000000	0.0000000	0.0000000	0.000000000	0.001556612
p2_break_pt_missed	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p1_distance_run	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
p2_distance_run	0.0000000	0.0000000	0.0000000	0.000000000	0.000000000
rally_count	0.0000000	0.0000000	0.0000000	0.00000000	0.000000000

```
0.0000000
                               0.0000000
                                           0.0000000
                                                      0.00000000
                                                                   0.00000000
speed_mph
serve_width
                    0.000000
                               0.000000
                                           0.000000
                                                      0.00000000
                                                                   0.00000000
                    0.000000
                               0.000000
                                           0.000000
                                                      0.00000000
                                                                   0.00000000
serve_depth
                    0.0000000
                               0.0000000
                                           0.0000000
                                                      0.00000000
                                                                   0.00000000
return_depth
                                                    s22
                                                                 s23
                           s20
                                      s21
                    1.19473386
                                1.1875362
                                            1.180717822
                                                         1.174452344
(Intercept)
match_id
                    0.0000000
                                0.000000
                                            0.00000000
                                                         0.00000000
player1
                    0.00000000
                                0.000000
                                            0.00000000
                                                         0.00000000
                    0.0000000
                                0.000000
                                            0.00000000
player2
                                                         0.00000000
elapsed_time
                    0.00000000
                                0.000000
                                            0.00000000
                                                         0.00000000
                    0.0000000
                                0.0000000
                                            0.00000000
                                                         0.00000000
set_no
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
game_no
                    0.0000000
                                0.000000
                                            0.00000000
                                                         0.00000000
point_no
                                            0.00000000
                    0.00000000
                                0.000000
                                                         0.00000000
p1_sets
p2_sets
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
                    0.00000000
                                0.000000
                                            0.000000000
                                                         0.00000000
p1_games
                    0.0000000
                                0.000000
                                            0.00000000
                                                         0.00000000
p2_games
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
p1_score
                    0.0000000
                                0.0000000
                                            0.00000000
                                                         0.00000000
p2_score
                    0.19411185
                                0.1987928
                                            0.202756757
                                                         0.206320641
server
                                                         0.00000000
                    0.00000000
                                0.000000
                                            0.00000000
serve_no
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
p1_points_won
p2_points_won
                    0.00000000
                                0.000000
                                            0.00000000
                                                         0.00000000
                                0.000000
                                            0.002953285
                    0.00000000
                                                         0.006146328
game_victor
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
set_victor
                                            0.00000000
                    0.0000000
                                0.0000000
                                                         0.00000000
p1_ace
                                0.0000000
                                            0.000000000
                                                         0.00000000
p2_ace
                    0.00000000
p1_winner
                   -0.34540794 -0.3494694 -0.352939230 -0.356045782
                    0.33073766
                                0.3347547
                                            0.338483619
                                                         0.341898922
p2_winner
                    0.0000000
                                0.000000
                                            0.00000000
                                                         0.00000000
winner_shot_type
                    0.00000000
                                0.0000000
                                            0.00000000
                                                         0.00000000
p1_double_fault
                    0.0000000
                                0.000000
                                            0.00000000
                                                         0.00000000
p2_double_fault
p1_unf_err
                    0.43122676
                                0.4372558
                                            0.442806912
                                                         0.447878425
                   -0.41759221 -0.4235518 -0.428510667 -0.432945360
p2_unf_err
                                0.000000
                    0.00000000
                                            0.00000000
                                                         0.00000000
p1_net_pt
p2_net_pt
                    0.00000000
                                0.000000
                                            0.00000000
                                                         0.00000000
p1_net_pt_won
                   -0.13753296 -0.1427436 -0.147415375 -0.151662462
                    0.16924478
                                0.1735713
                                            0.177402779
                                                         0.180873558
p2_net_pt_won
                                0.0000000
                                            0.00000000
                    0.00000000
                                                         0.00000000
p1_break_pt
                    0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
p2_break_pt
                   -0.05429389 -0.0755791
                                           -0.097325639 -0.117543463
p1_break_pt_won
                                0.1013360
                                            0.119485858
                    0.07552220
                                                         0.135113196
p2_break_pt_won
                                0.0264107
                                            0.038062416
                                                         0.048824409
p1_break_pt_missed
                    0.01456143
```

```
0.00000000
                                0.0000000
                                            0.000000000
                                                         0.00000000
p2_break_pt_missed
p1_distance_run
                    0.0000000
                                 0.000000
                                            0.00000000
                                                         0.00000000
                    0.0000000
                                 0.000000
                                            0.00000000
                                                         0.00000000
p2_distance_run
rally_count
                                 0.0000000
                                            0.00000000
                                                         0.00000000
                    0.00000000
                                            0.000000000
speed_mph
                    0.00000000
                                 0.000000
                                                         0.00000000
                                 0.000000
                                            0.00000000
serve_width
                    0.00000000
                                                         0.00000000
serve_depth
                    0.00000000
                                 0.000000
                                            0.00000000
                                                         0.00000000
return_depth
                    0.00000000
                                 0.0000000
                                            0.00000000
                                                         0.00000000
                                         s25
                                                                             s28
                            s24
                                                     s26
                                                                 s27
(Intercept)
                    1.169351714
                                 1.16491375
                                              1.16087158
                                                          1.15686909
                                                                      1.15309979
                                 0.00000000
                                              0.0000000
                    0.00000000
                                                          0.0000000
                                                                      0.0000000
match_id
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.00000000
player1
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.0000000
                                                                      0.0000000
player2
                                 0.00000000
elapsed_time
                    0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.00000000
set_no
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
                    0.00000000
                                 0.00000000
                                              0.00000000
                                                          0.00000000
                                                                      0.00000000
game_no
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.0000000
                                                                      0.0000000
point_no
                    0.00000000
                                 0.0000000
                                              0.00000000
                                                          0.0000000
                                                                      0.00000000
p1_sets
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
p2_sets
                    0.00000000
                                 0.00000000
                                              0.00000000
                                                          0.00000000
                                                                      0.00000000
p1_games
                                 0.00000000
p2_games
                    0.00000000
                                              0.00000000
                                                          0.0000000
                                                                      0.00000000
p1_score
                    0.000000000
                                 0.00000000
                                              0.00000000
                                                          0.00000000
                                                                      0.00000000
p2_score
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.00000000
                    0.209269213
                                                          0.21697822
                                 0.21186985
                                              0.21423267
                                                                      0.21976080
server
                    0.000000000
                                 0.00000000
                                              0.00000000
                                                          0.0000000
                                                                      0.00000000
serve_no
                                 0.00000000
                    0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
p1_points_won
                    0.00000000
                                 0.00000000
                                              0.00000000
                                                          0.0000000
                                                                      0.0000000
p2_points_won
game_victor
                    0.009016115
                                 0.01156476
                                              0.01390488
                                                          0.01584243
                                                                      0.01749529
set_victor
                    0.000000000
                                 0.00000000
                                              0.00000000
                                                          0.00000000
                                                                      0.00000000
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
p1_ace
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.00000000
                                                                      0.00000000
p2_ace
                   -0.358757031 -0.36122098 -0.36345287 -0.36367181 -0.36287777
p1_winner
p2_winner
                    0.344938307
                                  0.34764315
                                              0.35012272
                                                          0.35204427
                                                                      0.35345072
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.0000000
                                                                      0.0000000
winner_shot_type
                                 0.00000000
                                              0.0000000
p1_double_fault
                    0.00000000
                                                          0.0000000
                                                                      0.00000000
p2_double_fault
                    0.00000000
                                 0.00000000
                                              0.00000000
                                                          0.0000000
                                                                      0.00000000
p1_unf_err
                    0.452354162
                                  0.45635903
                                              0.46001621
                                                          0.46284813
                                                                      0.46518749
                   -0.436904198 -0.44050373 -0.44377578 -0.44580254
                                                                     -0.44711264
p2_unf_err
                                              0.0000000
                                                          0.0000000
                                                                      0.0000000
p1_net_pt
                    0.00000000
                                 0.00000000
p2_net_pt
                    0.00000000
                                  0.00000000
                                              0.00000000 -0.01363621 -0.03321703
                   -0.155504455 \ -0.15898283 \ -0.16215667 \ -0.16632161 \ -0.17077288
p1_net_pt_won
                                              0.18950422
                                                          0.20503942
                                                                      0.22619606
p2_net_pt_won
                    0.184018851
                                 0.18689161
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.0000000
                                                                      0.0000000
p1_break_pt
```

```
0.00000000
                                 0.00000000
                                             0.00000000
                                                          0.00000000
                                                                      0.00000000
p2_break_pt
p1_break_pt_won
                   -0.136002641 -0.15279714 -0.16811278 -0.18220329
                                                                     -0.19511294
                    0.149191177
                                 0.16206434
                                              0.17375837
                                                          0.18481925
                                                                      0.19513404
p2_break_pt_won
                                 0.06764144
                                             0.07581994
                                                          0.08269398
p1_break_pt_missed
                    0.058673829
                                                                      0.08868012
p2_break_pt_missed -0.007296119 -0.01651903 -0.02492203 -0.03323166 -0.04118263
p1_distance_run
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.0000000
                                                                      0.00000000
p2_distance_run
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
rally_count
                    0.000000000
                                 0.00000000
                                              0.0000000
                                                          0.00000000
                                                                      0.00000000
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.00000000
speed_mph
                                                                      0.0000000
serve_width
                    0.00000000
                                 0.00000000
                                              0.0000000
                                                          0.0000000
                                                                      0.00000000
serve_depth
                    0.00000000
                                 0.0000000
                                              0.0000000
                                                          0.00000000
                                                                      0.0000000
return_depth
                    0.00000000
                                 0.0000000
                                              0.00000000
                                                          0.00000000
                                                                      0.00000000
                           s29
                                        s30
                                                    s31
                                                                s32
                                                                            s33
                    1.14965461
                                1.14652582
                                             1.14286496
                                                         1.13925348
(Intercept)
                                                                     1.13596906
match_id
                    0.0000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
player1
player2
                    0.0000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
                    0.0000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
elapsed_time
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
set_no
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
game_no
point_no
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
p1_sets
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
p2_sets
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
                                0.0000000
                                             0.00000000
p1_games
                    0.00000000
                                                         0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
p2_games
                    0.0000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
p1_score
                    0.0000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
p2_score
server
                    0.22229930
                                0.22460928
                                             0.22703549
                                                         0.22933985
                                                                     0.23143516
serve_no
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.00000000
                                                                     0.0000000
                    0.0000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
p1_points_won
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
p2_points_won
                    0.01900343
                                0.02037557
                                             0.02156687
                                                         0.02264126
                                                                     0.02361811
game_victor
set_victor
                    0.0000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
                    0.00000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
p1_ace
                                                         0.0000000
                    0.00000000
                                0.0000000
                                             0.00000000
                                                                     0.0000000
p2_ace
p1_winner
                   -0.36219894 -0.36153720
                                           -0.36057657 -0.35970417 -0.35886315
p2_winner
                    0.35477785
                                0.35594310
                                             0.35533155
                                                         0.35432011
                                                                     0.35333430
winner_shot_type
                    0.00000000
                                0.0000000
                                             0.0000000
                                                         0.0000000
                                                                     0.0000000
                                                         0.0000000
p1_double_fault
                    0.00000000
                                0.0000000
                                             0.0000000
                                                                     0.0000000
p2_double_fault
                    0.00000000
                                0.0000000
                                             0.00000000
                                                         0.0000000
                                                                     0.0000000
                    0.46731648
                                             0.47017282
                                                         0.47065585
p1_unf_err
                                0.46925882
                                                                     0.47107666
                   -0.44833452 -0.44942064
                                           -0.45002084
                                                        -0.45056646
p2_unf_err
                                                                    -0.45104457
                    0.00000000
                                0.0000000
                                             0.01402708
                                                         0.03183606
                                                                     0.04829411
p1_net_pt
```

```
-0.05084282 -0.06711082 -0.08240862 -0.09564515 -0.10785051
p2_net_pt
p1_net_pt_won
                   -0.17481030 -0.17850684 -0.19564237 -0.21615931 -0.23510193
                    0.24523872
                                 0.26281600
                                             0.28045051
                                                         0.29617203
                                                                      0.31067735
p2_net_pt_won
p1_break_pt
                    0.00000000
                                                         0.0000000
                                                                      0.0000000
                                 0.0000000
                                             0.00000000
p2_break_pt
                    0.00000000
                                 0.0000000
                                             0.00000000
                                                         0.0000000
                                                                      0.0000000
                                            -0.22735647 -0.23622927 -0.24431328
p1_break_pt_won
                   -0.20687222 -0.21759026
p2_break_pt_won
                    0.20452899
                                 0.21309266
                                             0.22008474
                                                         0.22614223
                                                                      0.23164859
p1_break_pt_missed
                    0.09413369
                                 0.09910355
                                             0.10373142
                                                         0.10800271
                                                                      0.11190163
p2_break_pt_missed -0.04840590 -0.05500810 -0.06076326 -0.06585340 -0.07050642
p1_distance_run
                    0.00000000
                                 0.0000000
                                             0.0000000
                                                         0.0000000
                                                                      0.0000000
p2_distance_run
                    0.0000000
                                 0.0000000
                                             0.0000000
                                                         0.0000000
                                                                      0.0000000
                                 0.0000000
                                             0.00000000
                                                         0.0000000
rally_count
                    0.00000000
                                                                      0.0000000
                    0.0000000
                                 0.0000000
                                             0.0000000
                                                         0.0000000
                                                                      0.0000000
speed_mph
serve_width
                    0.00000000
                                 0.0000000
                                             0.00000000
                                                         0.0000000
                                                                      0.0000000
serve_depth
                    0.00000000
                                 0.0000000
                                             0.00000000
                                                         0.0000000
                                                                      0.0000000
return_depth
                    0.00000000
                                 0.0000000
                                             0.0000000
                                                         0.0000000
                                                                      0.0000000
                              s34
                                           s35
                                                         s36
                                                                        s37
(Intercept)
                    1.133457e+00
                                   1.131744489
                                                1.130485e+00
                                                               1.129499e+00
match_id
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
player1
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                    0.000000e+00
                                                0.000000e+00
player2
                                   0.00000000
                                                               0.000000e+00
elapsed_time
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
set_no
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
game_no
point_no
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.00000e+00
p1_sets
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p2_sets
p1_games
                    0.000000e+00
                                   0.000000000
                                               -2.092501e-04 -5.254193e-04
p2_games
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p1_score
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p2_score
                    2.333537e-01
                                   0.235113205
                                                2.367496e-01
                                                               2.382691e-01
server
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
serve_no
                   -7.870401e-06 -0.000024458
                                               -3.681727e-05
                                                             -4.622515e-05
p1_points_won
p2_points_won
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                                                2.605237e-02
                                                               2.670774e-02
game_victor
                    2.451220e-02
                                   0.025322797
set_victor
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p1_ace
p2_ace
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p1_winner
                   -3.580713e-01 -0.357323992 -3.565898e-01 -3.559634e-01
                                   0.351582551
                                                3.507385e-01
                                                               3.500823e-01
p2_winner
                    3.524008e-01
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
winner_shot_type
p1_double_fault
                    0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.00000e+00
```

```
0.000000e+00
                                   0.000000000
                                                0.000000e+00
                                                               0.000000e+00
p2_double_fault
p1_unf_err
                     4.714260e-01
                                   0.471749807
                                                4.719963e-01
                                                               4.722777e-01
                   -4.514744e-01 -0.451835378 -4.521987e-01 -4.525477e-01
p2_unf_err
                     6.333052e-02 0.076728550
                                                8.951677e-02 1.007138e-01
p1_net_pt
p2_net_pt
                   -1.189222e-01 -0.129022316 -1.382989e-01 -1.467109e-01
                   -2.523956e-01 -0.267843019 -2.825037e-01 -2.953847e-01
p1_net_pt_won
p2_net_pt_won
                     3.238672e-01
                                  0.335890742
                                                3.469841e-01
                                                               3.569964e-01
p1_break_pt
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                                                0.000000e+00
p2_break_pt
                     0.000000e+00
                                   0.00000000
                                                               0.000000e+00
p1_break_pt_won
                   -2.515987e-01 -0.258137057 -2.641250e-01 -2.696038e-01
p2_break_pt_won
                                                2.447328e-01
                                                               2.481860e-01
                     2.365493e-01
                                   0.240911166
p1_break_pt_missed
                    1.155182e-01
                                   0.118880281
                                                1.219348e-01
                                                               1.246867e-01
p2_break_pt_missed -7.481394e-02 -0.078824315 -8.251467e-02 -8.588311e-02
p1_distance_run
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
p2_distance_run
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
rally_count
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
speed_mph
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.00000e+00
serve_width
                     0.000000e+00
                                                0.000000e+00
                                                               0.000000e+00
                                   0.00000000
serve_depth
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
return depth
                     0.000000e+00
                                   0.00000000
                                                0.000000e+00
                                                               0.000000e+00
                              s38
                                            s39
                                                           s40
                                                                         s41
(Intercept)
                     1.129407e+00
                                   1.130224e+00
                                                 1.130971e+00
                                                                1.131643e+00
match_id
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
player1
                                   0.000000e+00
                                                 0.000000e+00
                     0.000000e+00
                                                                0.00000e+00
player2
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.00000e+00
elapsed_time
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.00000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
set_no
                     0.000000e+00
                     0.000000e+00
game_no
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
point_no
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
p1_sets
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
p2_sets
                   -8.129778e-04 -1.081066e-03 -1.324342e-03 -1.545821e-03
p1_games
p2_games
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
p1_score
p2_score
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
server
                     2.396446e-01
                                   2.408932e-01
                                                 2.420270e-01
                                                                2.430655e-01
serve no
                   -5.858286e-04 -1.781569e-03 -2.866724e-03 -3.855818e-03
p1_points_won
                   -5.499978e-05 -6.288948e-05 -7.016146e-05 -7.676036e-05
p2_points_won
                     0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
game_victor
                     2.731340e-02
                                   2.786314e-02
                                                 2.836608e-02
                                                                2.882618e-02
set_victor
                     0.000000e+00
                                   0.000000e+00
                                                 0.00000e+00
                                                                0.000000e+00
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.000000e+00
p1_ace
p2_ace
                     0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                                0.00000e+00
```

```
-3.553628e-01 -3.548019e-01 -3.542670e-01 -3.538236e-01
p1_winner
p2_winner
                    3.494480e-01
                                  3.489796e-01
                                                 3.484860e-01
                                                               3.481021e-01
winner_shot_type
                    0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
p1_double_fault
                    0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
p2_double_fault
                    0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
p1_unf_err
                    4.726308e-01
                                  4.731393e-01
                                                 4.735717e-01
                                                               4.739911e-01
p2_unf_err
                   -4.527523e-01 -4.527900e-01 -4.528236e-01 -4.528681e-01
p1_net_pt
                    1.111463e-01 1.202935e-01
                                                 1.289018e-01
                                                               1.364645e-01
p2_net_pt
                   -1.544083e-01 -1.614713e-01 -1.679567e-01 -1.737546e-01
p1_net_pt_won
                   -3.073844e-01 -3.179899e-01 -3.279358e-01 -3.367007e-01
                    3.661338e-01
                                  3.744182e-01
                                                 3.820512e-01
                                                               3.888563e-01
p2_net_pt_won
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
p1_break_pt
                    0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.00000e+00
p2_break_pt
                    0.000000e+00
p1_break_pt_won
                   -2.745973e-01 -2.791486e-01 -2.832947e-01 -2.870749e-01
p2_break_pt_won
                    2.513940e-01
                                   2.544454e-01
                                                 2.572024e-01
                                                               2.597322e-01
                                   1.293959e-01
                                                 1.314299e-01
                                                               1.332741e-01
p1_break_pt_missed
                    1.271736e-01
p2_break_pt_missed -8.897271e-02 -9.180692e-02 -9.439632e-02 -9.674271e-02
                    0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
p1_distance_run
p2_distance_run
                    0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
rally count
                    0.000000e+00
                                  0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
                                                               0.00000e+00
speed_mph
                    0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
serve width
                    0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                               0.00000e+00
serve_depth
                    0.000000e+00
                                   0.000000e+00
                                                 0.000000e+00
                                                               0.000000e+00
return_depth
                    0.000000e+00
                                                 0.000000e+00
                                   0.000000e+00
                                                               0.000000e+00
                             s42
                                            s43
                                                          s44
                                                                         s45
(Intercept)
                    1.132263e+00
                                   1.1328288291
                                                 1.133344e+00
                                                               1.1338052097
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
match_id
player1
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
player2
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
elapsed_time
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
                                                 0.000000e+00
set_no
                    0.000000e+00
                                   0.000000000
                                                               0.000000000
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
game_no
point_no
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_sets
p2_sets
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_games
                   -1.747801e-03 -0.0019318553 -2.099560e-03 -0.0022521696
p2 games
                    0.000000e+00
                                   0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_score
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p2_score
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
server
                    2.440066e-01
                                  0.2448635561
                                                 2.456443e-01
                                                               0.2463611458
                   -4.756726e-03 -0.0055774693 -6.325282e-03 -0.0070069264
serve_no
                   -8.279897e-05 -0.0000883033 -9.331883e-05 -0.0000978599
p1_points_won
p2_points_won
                    0.000000e+00 0.000000000 0.000000e+00
                                                              0.000000000
```

```
2.924364e-02
                                  0.0296238918
                                                 2.997036e-02
                                                               0.0302880676
game_victor
set_victor
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_ace
p2_ace
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_winner
                   -3.533774e-01 -0.3529674678 -3.525937e-01 -0.3523002668
p2_winner
                    3.476893e-01
                                  0.3473072698
                                                 3.469587e-01
                                                               0.3467110846
winner_shot_type
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_double_fault
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p2_double_fault
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p1_unf_err
                    4.743490e-01
                                  0.4746720190
                                                 4.749660e-01
                                                               0.4752600425
                   -4.528952e-01 -0.4529195065 -4.529417e-01 -0.4529775502
p2_unf_err
p1_net_pt
                    1.436239e-01
                                  0.1501780854
                                                 1.561532e-01
                                                               0.1613065628
                   -1.791446e-01 -0.1840602153
                                               -1.885392e-01 -0.1924962151
p2_net_pt
p1_net_pt_won
                   -3.449713e-01 -0.3525393532 -3.594384e-01 -0.3654158116
p2_net_pt_won
                    3.952008e-01
                                  0.4009898477
                                                 4.062650e-01
                                                               0.4109068409
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
p1_break_pt
                                                               0.000000000
p2_break_pt
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
                   -2.905170e-01 -0.2936529562 -2.965103e-01 -0.2991159443
p1_break_pt_won
p2_break_pt_won
                                                 2.660007e-01
                                                               0.2677477909
                    2.620204e-01
                                  0.2641031733
p1_break_pt_missed
                                  0.1365032817
                                                 1.379067e-01
                                                               0.1391759276
                    1.349632e-01
p2_break_pt_missed -9.889312e-02 -0.1008532350 -1.026393e-01 -0.1042523979
p1 distance run
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
p2_distance_run
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
rally_count
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
speed_mph
serve_width
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
serve_depth
                    0.000000e+00
return_depth
                    0.000000e+00
                                  0.000000000
                                                 0.000000e+00
                                                               0.000000000
                             s46
                                            s47
                                                          s48
                                                                        s49
(Intercept)
                    1.1342328994
                                  1.134694e+00
                                                 1.1326518064
                                                               1.1307861064
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
match_id
player1
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
player2
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
elapsed_time
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
set no
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
game_no
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
point_no
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
p1_sets
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
p2_sets
                    0.000000000
                                  0.00000e+00
                                                 0.000000000
                                                               0.000000000
p1_games
                   -0.0023913920 -2.518270e-03 -0.0025884901 -0.0026030985
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
p2_games
                                                               0.000000000
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
p1_score
p2_score
                    0.000000000
                                  0.000000e+00
                                                 0.000000000
                                                               0.000000000
```

```
0.2470097387
                                  2.476000e-01
                                                0.2492227368
                                                               0.2506726220
server
                   -0.0076279203 -8.193609e-03 -0.0086828422 -0.0091479526
serve_no
                   -0.0001020229 -1.058192e-04 -0.0002526365 -0.0004315598
p1_points_won
                    0.000000000
                                                0.0001590844
                                                               0.0003490782
p2_points_won
                                  1.044619e-06
game_victor
                    0.0305757304
                                  3.083770e-02
                                                0.0309786943
                                                               0.0311124831
                                                0.000000000
                                                               0.000000000
set_victor
                    0.000000000
                                  0.000000e+00
p1_ace
                    0.000000000
                                  0.00000e+00
                                                0.000000000
                                                               0.000000000
p2_ace
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
p1_winner
                   -0.3519912186 -3.517082e-01 -0.3513533230 -0.3511194742
p2_winner
                    0.3464245758
                                  3.461568e-01
                                                0.3460190075
                                                               0.3460074620
winner_shot_type
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
p1_double_fault
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
p2_double_fault
p1_unf_err
                    0.4755063003
                                  4.757285e-01
                                                0.4754786649
                                                               0.4752193273
p2_unf_err
                   -0.4529954948 -4.530114e-01 -0.4525851003 -0.4521896078
                                  1.707870e-01
                                                0.1761069364
                                                               0.1799336272
p1_net_pt
                    0.1662467470
p2_net_pt
                   -0.1962168481 -1.996177e-01 -0.2030877889 -0.2059833986
                   -0.3711224975 -3.763639e-01 -0.3820717451 -0.3863132016
p1_net_pt_won
                    0.4152864361
                                  4.192890e-01
                                                0.4231307500
                                                               0.4261762066
p2_net_pt_won
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
p1_break_pt
                                                0.000000000
p2_break_pt
                    0.000000000
                                  0.000000e+00
                                                               0.000000000
p1_break_pt_won
                   -0.3014885000 -3.036563e-01 -0.3049003789 -0.3058288020
p2_break_pt_won
                    0.2693246615
                                  2.707684e-01
                                                0.2720853851
                                                               0.2730963714
                                  1.413978e-01
p1_break_pt_missed
                    0.1403403259
                                                0.1431569991
                                                               0.1448874845
p2_break_pt_missed -0.1057351454 -1.070806e-01 -0.1086851166 -0.1102418868
                    0.000000000 -1.026685e-05 -0.0002576717 -0.0004778778
p1_distance_run
                                                               0.0004544920
                    0.000000000
                                  1.930977e-06
                                                0.0002415562
p2_distance_run
rally_count
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
speed_mph
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
serve_width
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
serve_depth
return_depth
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.000000000
                             s50
                                           s51
                                                          s52
                                                                        s53
                    1.1291159496
                                  1.1275883297
                                                1.1261281163
                                                               1.124664e+00
(Intercept)
                                                0.000000000
                                                               0.000000e+00
match_id
                    0.000000000
                                  0.000000000
player1
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
player2
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
elapsed_time
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
set_no
                    0.000000000
                                  0.000000000
                                                0.000000000 -2.979740e-06
game_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
point_no
                    0.000000000
                                  0.000000000
                                                0.0004870716
                                                               3.447046e-03
p1_sets
                    0.000000000
                                  0.000000000 -0.0006789192 -3.160284e-03
p2_sets
```

```
-0.0026193053 -0.0026321530 -0.0026266538 -2.428003e-03
p1_games
p2_games
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
p1_score
                    0.000000000
                                  0.000000000
                                                0.000000000
p2_score
                                                               0.00000e+00
server
                    0.2519755499
                                  0.2531644215
                                                0.2542524987
                                                               2.551565e-01
                   -0.0095727906 -0.0099595908 -0.0103283014 -1.072302e-02
serve no
p1_points_won
                   -0.0005912132 -0.0007388068 -0.0009163917 -1.267825e-03
p2_points_won
                    0.0005187479
                                  0.0006755104
                                                0.0008645509
                                                               1.217756e-03
                    0.0312363919
game_victor
                                  0.0313486091
                                                0.0314404367
                                                               3.149290e-02
set_victor
                    0.000000000
                                  0.000000000
                                                0.0000000000 -1.743558e-04
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
p1_ace
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
p2_ace
                   -0.3509097263 -0.3507163582 -0.3505107343 -3.501707e-01
p1_winner
p2_winner
                    0.3459946311
                                  0.3459822963
                                                0.3459659427
                                                               3.458815e-01
winner_shot_type
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
p1_double_fault
p2_double_fault
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
                    0.4749914821
                                  0.4747799724
                                                               4.741994e-01
p1_unf_err
                                                0.4745561848
                   -0.4518389981 -0.4515156821 -0.4511533654 -4.505759e-01
p2_unf_err
p1_net_pt
                    0.1834010056
                                  0.1865585718
                                                0.1894516790
                                                               1.920574e-01
                   -0.2086209142 -0.2110219533 -0.2132116346 -2.152089e-01
p2_net_pt
p1_net_pt_won
                   -0.3901640331 -0.3936716765 -0.3968567724 -3.996874e-01
p2_net_pt_won
                    0.4289525178
                                  0.4314783774
                                                0.4337428614
                                                               4.356582e-01
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
p1_break_pt
p2_break_pt
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
p1_break_pt_won
                   -0.3066936590 -0.3074704006 -0.3080702001 -3.080835e-01
p2_break_pt_won
                    0.2740186154
                                  0.2748535946
                                                0.2754717854
                                                               2.754605e-01
p1_break_pt_missed
                    0.1464461994
                                  0.1478751507
                                                0.1491849413
                                                               1.504724e-01
p2_break_pt_missed -0.1116515162 -0.1129412479 -0.1141638838 -1.154824e-01
p1_distance_run
                   -0.0006747396 -0.0008545161 -0.0010212059 -1.167856e-03
                    0.0006452046
                                  0.0008192586
                                                0.0009806379
                                                               1.123325e-03
p2_distance_run
rally_count
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
speed_mph
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
serve_width
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000e+00
                                  0.000000000
                                                               0.000000e+00
serve depth
                    0.000000000
                                                0.000000000
return_depth
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.00000e+00
                             s54
                                           s55
                                                          s56
                                                                       s57
(Intercept)
                    1.1254606098
                                  1.125365e+00
                                                1.1245161584
                                                               1.123880313
match_id
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
player1
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
player2
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
elapsed_time
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
set_no
```

```
-0.0010295784 -1.459800e-03 -0.0005874604
                                                               0.00000000
game_no
                                 0.000000e+00
point_no
                    0.000000000
                                                0.000000000
                                                               0.00000000
                    0.0050450943
                                  6.352395e-03
                                                0.0076050787
                                                               0.008700754
p1_sets
                   -0.0068569315 -1.037798e-02 -0.0141220378 -0.017409829
p2_sets
                   -0.0006123991
                                  0.000000e+00
                                                0.000000000
p1_games
                                                               0.00000000
p2_games
                    0.000000000 -3.685465e-05 -0.0020375600 -0.003483904
p1_score
                    0.0000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
p2_score
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
                                  2.560172e-01
                                                0.2561195887
server
                    0.2554589783
                                                               0.256321405
serve_no
                   -0.0110985573 -1.145450e-02 -0.0117730938 -0.012067945
                   -0.0016049640 -1.906153e-03 -0.0022269132 -0.002505450
p1_points_won
                                  1.941874e-03
                                                0.0023091459
                                                              0.002629440
p2_points_won
                    0.0015967147
                    0.0315945140
                                  3.167950e-02
                                                0.0317286531
                                                               0.031771839
game_victor
                   -0.0012125933 -2.176909e-03 -0.0030421925 -0.003784427
set_victor
p1_ace
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
p2_ace
p1_winner
                   -0.3498780841 -3.495947e-01 -0.3493257450 -0.349085796
                    0.3458172882
                                  3.457748e-01
                                                0.3457059404
                                                              0.345655711
p2_winner
winner_shot_type
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
p1 double fault
                    0.0000000000
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
p2_double_fault
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
p1_unf_err
                    0.4738639057
                                  4.735688e-01
                                                0.4732407720
                                                               0.472961469
p2_unf_err
                   -0.4500429128 -4.495354e-01 -0.4490372387 -0.448599375
                                  1.965873e-01 0.1985041157
p1_net_pt
                    0.1944128541
                                                               0.200268633
                   -0.2170251985 -2.186769e-01 -0.2201667191 -0.221530154
p2_net_pt
                   -0.4022248957 -4.045616e-01 -0.4066335835 -0.408534681
p1_net_pt_won
                    0.4374558908
                                 4.390621e-01 0.4405162339
                                                              0.441845107
p2_net_pt_won
p1_break_pt
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
                                                0.000000000
p2_break_pt
                    0.000000000
                                  0.000000e+00
                                                              0.00000000
p1_break_pt_won
                   -0.3081216913 -3.081131e-01 -0.3080071994 -0.307947434
                    0.2754456436
                                  2.753137e-01
                                                0.2752215663
p2_break_pt_won
                                                              0.275121415
p1_break_pt_missed
                    0.1514025825
                                  1.523516e-01
                                                0.1531203809
                                                              0.153834925
p2_break_pt_missed -0.1168069440 -1.180270e-01 -0.1192208434 -0.120290429
p1_distance_run
                   -0.0013017176 -1.422913e-03 -0.0015335100 -0.001634767
                                                0.0014835661
p2 distance run
                    0.0012558879
                                  1.373990e-03
                                                               0.001583385
                    0.000000000
rally_count
                                  0.000000e+00
                                                0.000000000
                                                              0.00000000
speed_mph
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
serve_width
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
serve_depth
                    0.000000000
                                  0.000000e+00
                                                0.000000000
                                                               0.00000000
return_depth
                                                0.000000000
                    0.000000000
                                  0.000000e+00
                                                               0.00000000
                             s58
                                           s59
                                                          s60
                                                                        s61
(Intercept)
                    1.124225e+00
                                  1.128373e+00
                                                1.131043e+00
                                                               1.133776e+00
match_id
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                               0.00000e+00
```

```
player1
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
                    0.000000e+00
player2
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
elapsed_time
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
set_no
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
game no
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
point no
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
p1 sets
                    9.035653e-03
                                  9.300139e-03
                                                9.524949e-03
                                                              1.005670e-02
p2_sets
                   -2.026679e-02 -2.304372e-02 -2.556607e-02 -2.799052e-02
                    0.000000e+00 0.000000e+00 0.000000e+00
p1_games
                                                             2.920332e-04
p2_games
                   -3.873015e-03 -4.251213e-03 -4.595618e-03 -5.131264e-03
                    0.000000e+00 0.000000e+00
                                                0.000000e+00 0.000000e+00
p1_score
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
p2_score
                    2.567672e-01
                                  2.571708e-01
                                                2.575360e-01
                                                              2.577230e-01
server
                   -1.234124e-02 -1.330132e-02 -1.393891e-02 -1.453547e-02
serve_no
p1_points_won
                   -2.695948e-03 -2.878834e-03 -3.043460e-03 -3.228845e-03
                    2.866567e-03 3.095064e-03 3.301454e-03 3.521522e-03
p2_points_won
game_victor
                    3.181822e-02 3.186682e-02 3.190796e-02 3.194351e-02
                   -4.370806e-03 -4.918938e-03 -5.415244e-03 -5.922296e-03
set_victor
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00 -4.530976e-04
p1_ace
p2 ace
                    0.00000e+00
                                 0.000000e+00 0.000000e+00 0.000000e+00
p1_winner
                   -3.489062e-01 -3.487332e-01 -3.485779e-01 -3.483961e-01
p2 winner
                    3.456456e-01
                                  3.456298e-01
                                                3.456175e-01
                                                              3.455853e-01
winner_shot_type
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                             0.000000e+00
p1_double_fault
                                                0.000000e+00
                    0.000000e+00
                                  0.000000e+00
                                                              0.000000e+00
p2_double_fault
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
p1_unf_err
                    4.727827e-01 4.725651e-01
                                                4.723838e-01
                                                              4.721743e-01
                   -4.482626e-01 -4.479750e-01 -4.477037e-01 -4.474203e-01
p2_unf_err
p1_net_pt
                    2.019608e-01 2.035135e-01 2.049233e-01
                                                             2.061588e-01
                   -2.228030e-01 -2.239469e-01 -2.249936e-01 -2.259349e-01
p2_net_pt
                   -4.103381e-01 -4.119862e-01 -4.134851e-01 -4.148190e-01
p1_net_pt_won
                    4.431064e-01 4.442271e-01
                                               4.452560e-01
                                                             4.461684e-01
p2_net_pt_won
p1_break_pt
                    0.000000e+00 0.000000e+00
                                                0.000000e+00
                                                             0.000000e+00
p2_break_pt
                    0.000000e+00
                                 0.000000e+00
                                                0.000000e+00
                                                             0.000000e+00
p1_break_pt_won
                   -3.080882e-01 -3.082096e-01 -3.083184e-01 -3.083140e-01
p2 break pt won
                    2.750667e-01 2.749776e-01 2.749035e-01
                                                             2.748067e-01
p1_break_pt_missed 1.544662e-01 1.550586e-01 1.555923e-01
                                                             1.560892e-01
p2 break pt missed -1.211868e-01 -1.219645e-01 -1.226907e-01 -1.233897e-01
p1_distance_run
                   -1.727213e-03 -1.811260e-03 -1.887795e-03 -1.957474e-03
p2_distance_run
                    1.673569e-03 1.754390e-03 1.828354e-03 1.896025e-03
rally_count
                    0.000000e+00 0.000000e+00 0.000000e+00 -1.074229e-05
                   -5.154187e-06 -3.494996e-05 -5.519271e-05 -7.476482e-05
speed_mph
serve_width
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00 0.000000e+00
serve_depth
                    0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
```

```
return_depth
                    0.000000e+00
                                  0.000000e+00
                                                0.000000e+00
                                                              0.000000e+00
                             s62
                                           s63
                                                         s64
                                                                       s65
(Intercept)
                    1.136378e+00
                                  1.1388451743
                                                1.1410906904
                                                              1.1431337989
match_id
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                                  0.000000000
                                                0.000000000
player1
                    0.000000e+00
                                                              0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
player2
                    0.000000e+00
elapsed_time
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
set_no
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
game_no
point_no
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_sets
                    1.116882e-02
                                  0.0121783953
                                                0.0130887082
                                                              0.0139092564
                   -3.013023e-02 -0.0319918830 -0.0336829845 -0.0352167058
p2_sets
                    1.000789e-03 0.0016299245
                                                0.0022001700
                                                              0.0027165882
p1_games
                   -5.916681e-03 -0.0066086815 -0.0072366596 -0.0078058912
p2_games
p1_score
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000e+00
                                  0.000000000
                                                0.000000000
p2_score
                                                              0.000000000
server
                    2.576732e-01
                                  0.2576447480
                                                0.2576202887
                                                              0.2575996751
                   -1.504108e-02 -0.0155258642 -0.0159672423 -0.0163691063
serve_no
p1_points_won
                   -3.444980e-03 -0.0036353342 -0.0038077114 -0.0039636275
p2_points_won
                    3.757860e-03 0.0039652677
                                                0.0041532332
                                                              0.0043233597
                    3.193873e-02 0.0319504602
game_victor
                                                0.0319613607
                                                              0.0319715575
                   -6.447565e-03 -0.0069255259 -0.0073607651 -0.0077570002
set victor
p1_ace
                   -1.631181e-03 -0.0025769077 -0.0034385374 -0.0042233119
                    0.000000e+00 0.0000000000
                                                0.000000000
p2_ace
                                                              0.000000000
                   -3.479356e-01 -0.3476096762 -0.3473132248 -0.3470438030
p1_winner
                                                0.3458884389
p2_winner
                    3.457489e-01
                                  0.3458215303
                                                              0.3459500718
winner_shot_type
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000e+00
p1_double_fault
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p2_double_fault
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_unf_err
                    4.720193e-01
                                  0.4718522719
                                                0.4717014816
                                                              0.4715655082
                   -4.470295e-01 -0.4467163095 -0.4464320802 -0.4461744384
p2_unf_err
                    2.072150e-01 0.2081829344
                                                0.2090653170
                                                              0.2098699469
p1_net_pt
p2_net_pt
                   -2.268247e-01 -0.2276201947 -0.2283454532 -0.2290067410
                   -4.160577e-01 -0.4171655440 -0.4181756357 -0.4190967207
p1_net_pt_won
                    4.469766e-01 0.4477170890
                                                0.4483927555
p2 net pt won
                                                              0.4490094801
p1_break_pt
                    0.000000e+00
                                 0.0000000000
                                                0.0000000000
                                                              0.000000000
                                                0.000000000
p2 break pt
                    0.000000e+00
                                 0.0000000000
                                                              0.000000000
p1_break_pt_won
                   -3.081109e-01 -0.3079704389 -0.3078459109 -0.3077362295
                    2.748238e-01 0.2748201413
                                                0.2748197859
p2_break_pt_won
                                                              0.2748227143
p1_break_pt_missed 1.565121e-01 0.1569080702 0.1572674731
                                                              0.1575935609
p2_break_pt_missed -1.240886e-01 -0.1247021567 -0.1252595322 -0.1257654723
p1_distance_run
                   -1.993475e-03 -0.0020359633 -0.0020745895 -0.0021097168
p2_distance_run
                    1.983222e-03 0.0020538966 0.0021182988 0.0021769901
```

```
-2.316545e-04 -0.0003604039 -0.0004780573 -0.0005855375
rally_count
speed_mph
                   -9.338619e-05 -0.0001107924 -0.0001266459 -0.0001410867
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                               0.000000000
serve_width
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                               0.000000000
serve_depth
return_depth
                    0.000000e+00
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                             s66
                                           s67
                                                          s68
                                                                        s69
(Intercept)
                    1.1450018402
                                  1.1466977508
                                                 1.1482462760
                                                               1.1496588229
match_id
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
player1
player2
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
elapsed_time
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
set_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
game_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
point_no
p1_sets
                    0.0146748874
                                  0.0153557344
                                                0.0159839765
                                                               0.0165610557
                   -0.0366289720 -0.0378956210 -0.0390597257 -0.0401212223
p2_sets
                    0.0031936010
                                  0.0036211878
                                                0.0040141838
                                                               0.0043734568
p1_games
                   -0.0083306268 -0.0088014921 -0.0092340603 -0.0096290131
p2_games
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p1_score
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p2_score
                                  0.2575599552
                                                0.2575423562
server
                    0.2575768313
                                                               0.2575253622
serve no
                   -0.0167357702 -0.0170692517 -0.0173733610 -0.0176505259
p1_points_won
                   -0.0041080372 -0.0042370088 -0.0043557833 -0.0044644116
                                  0.0046213733
                                                0.0047508559
p2_points_won
                    0.0044807087
                                                              0.0048691890
                    0.0319802713
                                  0.0319888504
                                                0.0319963797
                                                               0.0320031535
game_victor
                   -0.0081187729 -0.0084475027 -0.0087474991 -0.0090209338
set_victor
                   -0.0049395564 -0.0055913587 -0.0061856829 -0.0067275560
p1_ace
p2_ace
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_winner
                   -0.3467964891 -0.3465725708 -0.3463678939 -0.3461808870
                    0.3460050499
                                  0.3460567624
                                                0.3461029658
                                                               0.3461449300
p2_winner
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
winner_shot_type
p1_double_fault
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p2_double_fault
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p1_unf_err
                                  0.4713268804
                                                0.4712232326
                                                               0.4711284429
                    0.4714389254
p2_unf_err
                   -0.4459369568 -0.4457237195 -0.4455279674 -0.4453492072
                                  0.2112687667
p1_net_pt
                    0.2106011579
                                                0.2118762318
                                                               0.2124290592
p2_net_pt
                   -0.2296081734 -0.2301572778 -0.2306568908 -0.2311118399
p1_net_pt_won
                   -0.4199342356 -0.4206989939 -0.4213948970 -0.4220285255
                                  0.4500812446
                                                0.4505467036
                                                               0.4509702858
p2_net_pt_won
                    0.4495689743
p1_break_pt
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p2_break_pt
                   -0.3076284888 -0.3075389284 -0.3074531738 -0.3073736699
p1_break_pt_won
p2_break_pt_won
                    0.2748186185 0.2748225380
                                                0.2748222896
                                                              0.2748209391
```

```
p1_break_pt_missed 0.1578932601 0.1581632729 0.1584107202 0.1586365706
p2_break_pt_missed -0.1262304181 -0.1266494711 -0.1270335004 -0.1273839938
                   -0.0021416904 -0.0021706484 -0.0021970618 -0.0022210363
p1_distance_run
                    0.0022303703 0.0022790471 0.0023233131
                                                              0.0023635893
p2_distance_run
                   -0.0006832642 -0.0007730838 -0.0008545059 -0.0009288352
rally_count
                   -0.0001542518 -0.0001662442 -0.0001771714 -0.0001871313
speed_mph
serve_width
                    0.0000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
serve_depth
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
return_depth
                             s70
                                           s71
                                                         s72
                                                                       s73
                    1.1509372834
                                  1.1521099628
                                                1.1531775532
                                                              1.1541550042
(Intercept)
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
{\tt match\_id}
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
player1
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
player2
elapsed_time
                    0.000000000
                                  0.000000000
                                                0.0000000000
                                                              0.000000000
                    0.0000000000
                                  0.0000000000
                                                0.000000000
                                                              0.000000000
set_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
game_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
point_no
                    0.0170611219
                                  0.0175385934
                                                0.0179702326
                                                              0.0183784216
p1_sets
                   -0.0410592758 -0.0419453240 -0.0427396000 -0.0434803354
p2_sets
                    0.0046902749
                                                              0.0055096514
p1_games
                                  0.0049889365
                                                0.0052581947
p2_games
                   -0.0099781816 -0.0103070526 -0.0106029760 -0.0108788393
p1_score
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
p2_score
                                                              0.000000000
                    0.2575150605
                                  0.2575008194
                                                0.2574883100
                                                              0.2574742200
server
                   -0.0179020800 -0.0181322409 -0.0183415806 -0.0185329445
serve_no
                   -0.0045595038 -0.0046498830 -0.0047311065 -0.0048073724
p1_points_won
p2_points_won
                    0.0049730052 0.0050715433
                                                0.0051600336
                                                              0.0052429923
                                                0.0320214269
game_victor
                    0.0320103456
                                 0.0320159597
                                                              0.0320258156
                   -0.0092688173 -0.0094959982 -0.0097025586 -0.0098914814
set_victor
                   -0.0072199870 -0.0076694418 -0.0080790063 -0.0084527676
p1_ace
                    0.000000000 0.000000000
                                                0.000000000
                                                              0.000000000
p2_ace
p1_winner
                   -0.3460128690 -0.3458581309 -0.3457173218 -0.3455877608
                    0.3461851594
                                  0.3462194253
                                                0.3462513218
                                                              0.3462792196
p2_winner
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
winner_shot_type
p1_double_fault
                    0.0000000000
                                  0.0000000000
                                                0.000000000
                                                              0.000000000
p2_double_fault
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_unf_err
                    0.4710470088
                                  0.4709678359
                                                0.4708975024
                                                              0.4708304662
                   -0.4451911762 -0.4450425251 -0.4449087501 -0.4447840085
p2_unf_err
p1_net_pt
                    0.2129344069 0.2133937422
                                                0.2138114564
                                                              0.2141913863
                   -0.2315275706 -0.2319050901 -0.2322489835 -0.2325617484
p2_net_pt
                   -0.4226079578 -0.4231339508 -0.4236131135 -0.4240486192
p1_net_pt_won
                    0.4513597031 0.4517112689 0.4520321771 0.4523226712
p2_net_pt_won
```

```
0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_break_pt
p2_break_pt
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                   -0.3073140962 -0.3072475354 -0.3071905746 -0.3071312146
p1_break_pt_won
p2_break_pt_won
                    0.2748307912
                                  0.2748288596
                                                               0.2748252924
                                                0.2748303257
p1_break_pt_missed
                    0.1588377098
                                  0.1590255650
                                                0.1591951474
                                                              0.1593524602
p2_break_pt_missed -0.1276964868 -0.1279879444 -0.1282512210 -0.1284951075
p1_distance_run
                   -0.0022425196 -0.0022625634 -0.0022804209 -0.0022969788
p2_distance_run
                    0.0024001817
                                  0.0024335956
                                                0.0024638300
                                                              0.0024914901
                   -0.0009974679 -0.0010585506 -0.0011149269 -0.0011656665
rally_count
                   -0.0001961979 -0.0002044615 -0.0002119931 -0.0002188611
speed_mph
                                                0.000000000
serve_width
                    0.000000000
                                  0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
serve_depth
return_depth
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                             s74
                                           s75
                                                          s76
                                                                        s77
                                                               1.1572597727
(Intercept)
                    1.1550351339
                                  1.1558449442
                                                1.1565771528
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
match_id
player1
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
player2
elapsed_time
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
set_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
game_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
point_no
p1_sets
                    0.0187163746
                                  0.0190523143
                                                0.0193988049
                                                               0.0196469539
                   -0.0441060566 -0.0447267118 -0.0453154524 -0.0457618603
p2_sets
                    0.0057231064
                                  0.0059321142
                                                0.0061244187
                                                               0.0062907119
p1_games
                   -0.0111133352 -0.0113434161 -0.0115555862 -0.0117336231
p2_games
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_score
p2_score
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                                  0.2574569551
                                                0.2574448002
                    0.2574673774
                                                               0.2574347255
server
                   -0.0187056696 -0.0188647190 -0.0190080729 -0.0191403732
serve_no
                   -0.0048710188 -0.0049344911 -0.0049968047 -0.0050427041
p1_points_won
                    0.0053124034
                                  0.0053815671
                                                0.0054489297
                                                               0.0054988064
p2_points_won
game_victor
                    0.0320315803
                                  0.0320350750
                                                0.0320377648
                                                              0.0320427477
                   -0.0100617048 -0.0102186335 -0.0103615412 -0.0104908336
set_victor
                   -0.0087910240 -0.0091010655 -0.0093830876 -0.0096386601
p1_ace
                    0.000000000
p2_ace
                                 0.000000000
                                                0.000000000
                                                              0.000000000
                   -0.3454735379 -0.3453662146 -0.3452641898 -0.3451814832
p1_winner
p2_winner
                    0.3463070454
                                  0.3463302838
                                                0.3463499795
                                                              0.3463701329
winner_shot_type
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p1_double_fault
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                               0.000000000
p2_double_fault
                                  0.4707209550
                                                0.4706649019
                                                               0.4706278879
p1_unf_err
                    0.4707772213
p2_unf_err
                   -0.4446782829 -0.4445741351 -0.4444736773 -0.4443984688
```

```
0.2145375126 0.2148545521 0.2151387129 0.2153960457
p1_net_pt
                   -0.2328472588 -0.2331076255 -0.2333431897 -0.2335561595
p2_net_pt
                   -0.4244464727 -0.4248090308 -0.4251345062 -0.4254318921
p1_net_pt_won
                    0.4525916228
                                 0.4528332752 0.4530487166
                                                             0.4532515981
p2_net_pt_won
                                  0.000000000
                                                0.000000000
p1 break pt
                    0.000000000
                                                              0.000000000
p2_break_pt
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_break_pt_won
                   -0.3070965803 -0.3070467955 -0.3069858121 -0.3069681370
p2_break_pt_won
                    0.2748370807
                                  0.2748326202
                                                0.2748114463
                                                              0.2748307191
                                                0.1597469071
p1_break_pt_missed 0.1594885986
                                  0.1596196751
                                                              0.1598443365
p2_break_pt_missed -0.1287064819 -0.1289095860 -0.1291029783 -0.1292566758
                   -0.0023111301 -0.0023252633 -0.0023382000 -0.0023479713
p1_distance_run
                    0.0025161039 0.0025393627
                                                0.0025604068
                                                              0.0025780821
p2_distance_run
rally_count
                   -0.0012131007 -0.0012548855 -0.0012923614 -0.0013279953
                   -0.0002251071 -0.0002308067 -0.0002359184 -0.0002407354
speed_mph
serve_width
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
serve_depth
return_depth
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                             s78
                                           s79
                                                         s80
                                                                       s81
(Intercept)
                    1.1578646765
                                  1.1584234700
                                                1.1589362503
                                                              1.1594007420
match id
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
player1
                                                              0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
player2
                    0.000000000
                                  0.0000000000
                                                0.000000000
                                                              0.000000000
elapsed_time
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
                    0.000000000
                                  0.000000000
                                                0.000000000
set_no
                                                              0.000000000
                    0.0000000000
                                  0.0000000000
                                                0.000000000
                                                              0.000000000
game_no
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
point_no
                                  0.0201727849
                                                0.0203980510
                                                              0.0205971506
p1_sets
                    0.0199396680
p2_sets
                   -0.0462701777 -0.0466562862 -0.0470431218 -0.0473419907
p1_games
                    0.0064530159
                                  0.0065904205
                                                0.0067244573
                                                              0.0068382830
p2_games
                   -0.0119141234 -0.0120621602 -0.0122077394 -0.0123272679
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p1_score
                    0.000000000
                                  0.000000000
                                                0.000000000
                                                              0.000000000
p2_score
server
                    0.2574270113 0.2574191032
                                                0.2574123700
                                                              0.2574105603
                   -0.0192599396 -0.0193685391 -0.0194695350 -0.0195615383
serve_no
                   -0.0050961041 -0.0051371874 -0.0051779232 -0.0052109992
p1_points_won
                                 0.0056009557
p2_points_won
                    0.0055566547
                                                0.0056450172
                                                             0.0056803240
                                               0.0320501848
game_victor
                    0.0320440639
                                  0.0320480851
                                                              0.0320544093
set_victor
                   -0.0106096904 -0.0107165997 -0.0108157029 -0.0109050760
                   -0.0098746986 -0.0100853372 -0.0102813503 -0.0104530330
p1_ace
                    0.000000000 0.000000000 -0.0001584574 -0.0004535634
p2_ace
                   -0.3450941067 -0.3450238058 -0.3449546470 -0.3449002427
p1_winner
                    0.3463875362
                                  0.3464038369
                                                0.3464254641
                                                              0.3464586430
p2_winner
winner_shot_type
                    0.000000000
                                 0.000000000 0.000000000
                                                              0.000000000
```

```
p1_double_fault
              p2_double_fault
              p1_unf_err
              0.4705785797 0.4705445391 0.4705086417 0.4704841029
             -0.4443115042 -0.4442454946 -0.4441790044 -0.4441267272
p2_unf_err
p1 net pt
              0.2156367671 \quad 0.2158452132 \quad 0.2160426440 \quad 0.2161942921
             -0.2337544372 -0.2339289413 -0.2340943089 -0.2342320012
p2_net_pt
p1_net_pt_won
             -0.4257063418 -0.4259469158 -0.4261732623 -0.4263495139
p2_net_pt_won
              0.4534312110 0.4535948155 0.4537434971 0.4538615931
p1_break_pt
              p2_break_pt
              p1_break_pt_won
             -0.3069115608 -0.3068865969 -0.3068530590 -0.3068376882
p2_break_pt_won
              0.2748086829 0.2748128760 0.2748080904 0.2748176340
p1_break_pt_missed 0.1599527159 0.1600395943 0.1601249260 0.1601987791
p2_break_pt_missed -0.1294212939 -0.1295543919 -0.1296827218 -0.1297883998
p1_distance_run
             -0.0023595925 -0.0023680891 -0.0023768581 -0.0023839214
p2_distance_run
              rally_count
             -0.0013598025 -0.0013883136 -0.0014153175 -0.0014398829
             -0.0002449788 -0.0002489095 -0.0002525104 -0.0002558168
speed_mph
serve_width
              serve depth
              return depth
```

```
lasso_variables <- colnames(coef(lasso_model))
existing_variables <- intersect(lasso_variables, colnames(eda))
# Filter 'new_data' to include only the variables present in the Lasso model
new_data_lasso <- eda[, existing_variables]</pre>
```

"