lab 14

2025-06-23

```
## Warning: package 'rstan' was built under R version 4.3.3

## Loading required package: StanHeaders

## Warning: package 'StanHeaders' was built under R version 4.3.3

##
## rstan version 2.32.7 (Stan version 2.32.2)

## For execution on a local, multicore CPU with excess RAM we recommend calling
## options(mc.cores = parallel::detectCores()).
## To avoid recompilation of unchanged Stan programs, we recommend calling
## rstan_options(auto_write = TRUE)
## For within-chain threading using `reduce_sum()` or `map_rect()` Stan functions,
## change `threads_per_chain` option:
## rstan_options(threads_per_chain = 1)

## Warning: package 'tibble' was built under R version 4.3.3

## Warning: package 'purrr' was built under R version 4.3.3

## Warning: package 'lubridate' was built under R version 4.3.3

## -- Attaching core tidyverse packages ----------------------- tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v lubridate 1.9.4     v tibble    3.3.0
## v purrr     1.0.4     v tidyr     1.3.1

## -- Conflicts ------------------------------------------- tidyverse_conflicts() --
## x tidyr::extract() masks rstan::extract()
## x dplyr::filter()  masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
## Rows: 1657 Columns: 9
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (4): game_id, home_team, away_team, season_type
## dbl (5): week, total_home_score, total_away_score, season, pts_H_minus_A
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.

## # A tibble: 6 x 9
##   game_id         home_team away_team season_type  week total_home_score
##   <chr>           <chr>     <chr>     <chr>       <dbl>            <dbl>
## 1 2018_01_ATL_PHI PHI       ATL       REG             1               18
## 2 2018_01_BUF_BAL BAL       BUF       REG             1               47
## 3 2018_01_CHI_GB  GB        CHI       REG             1               24
## 4 2018_01_CIN_IND IND       CIN       REG             1               23
```

```
## 5 2018_01_DAL_CAR CAR       DAL       REG              1              16
## 6 2018_01_HOU_NE  NE        HOU       REG              1              27
## # i 3 more variables: total_away_score <dbl>, season <dbl>, pts_H_minus_A <dbl>

## Trying to compile a simple C file

## Running /Library/Frameworks/R.framework/Resources/bin/R CMD SHLIB foo.c
## using C compiler: 'Apple clang version 14.0.3 (clang-1403.0.22.14.1)'
## using SDK: 'MacOSX13.3.sdk'
## clang -arch arm64 -I"/Library/Frameworks/R.framework/Resources/include" -DNDEBUG   -I"/Library/Framew
## In file included from <built-in>:1:
## In file included from /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/library/StanHeader
## In file included from /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/library/RcppEigen,
## In file included from /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/library/RcppEigen,
## /Library/Frameworks/R.framework/Versions/4.3-arm64/Resources/library/RcppEigen/include/Eigen/src/Cor
## #include <cmath>
##          ^~~~~~~
## 1 error generated.
## make: *** [foo.o] Error 1

##
## SAMPLING FOR MODEL 'anon_model' NOW (CHAIN 1).
## Chain 1:
## Chain 1: Gradient evaluation took 0.000221 seconds
## Chain 1: 1000 transitions using 10 leapfrog steps per transition would take 2.21 seconds.
## Chain 1: Adjust your expectations accordingly!
## Chain 1:
## Chain 1:
## Chain 1: Iteration:    1 / 1500 [  0%]  (Warmup)
## Chain 1: Iteration:  150 / 1500 [ 10%]  (Warmup)
## Chain 1: Iteration:  300 / 1500 [ 20%]  (Warmup)
## Chain 1: Iteration:  450 / 1500 [ 30%]  (Warmup)
## Chain 1: Iteration:  600 / 1500 [ 40%]  (Warmup)
## Chain 1: Iteration:  750 / 1500 [ 50%]  (Warmup)
## Chain 1: Iteration:  751 / 1500 [ 50%]  (Sampling)
## Chain 1: Iteration:  900 / 1500 [ 60%]  (Sampling)
## Chain 1: Iteration: 1050 / 1500 [ 70%]  (Sampling)
## Chain 1: Iteration: 1200 / 1500 [ 80%]  (Sampling)
## Chain 1: Iteration: 1350 / 1500 [ 90%]  (Sampling)
## Chain 1: Iteration: 1500 / 1500 [100%]  (Sampling)
## Chain 1:
## Chain 1:  Elapsed Time: 14.885 seconds (Warm-up)
## Chain 1:                11.402 seconds (Sampling)
## Chain 1:                26.287 seconds (Total)
## Chain 1:
```
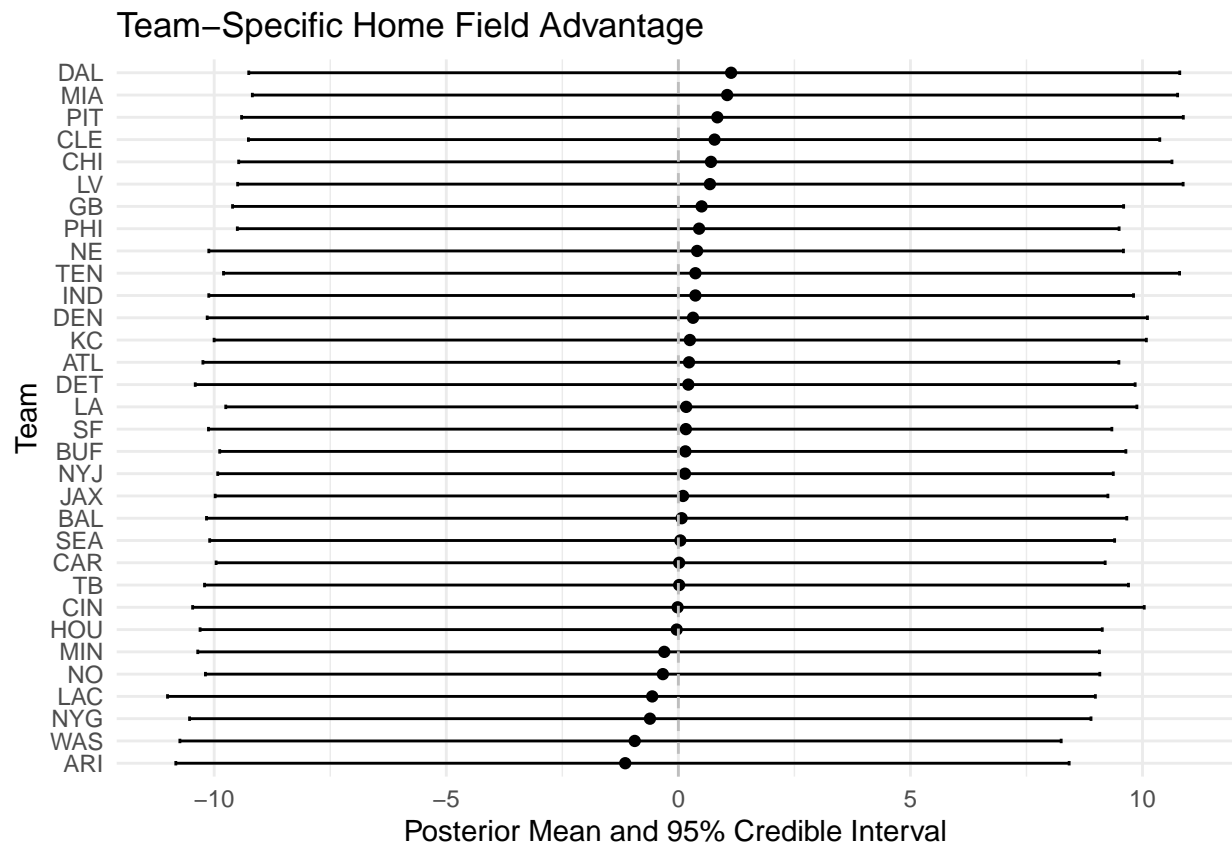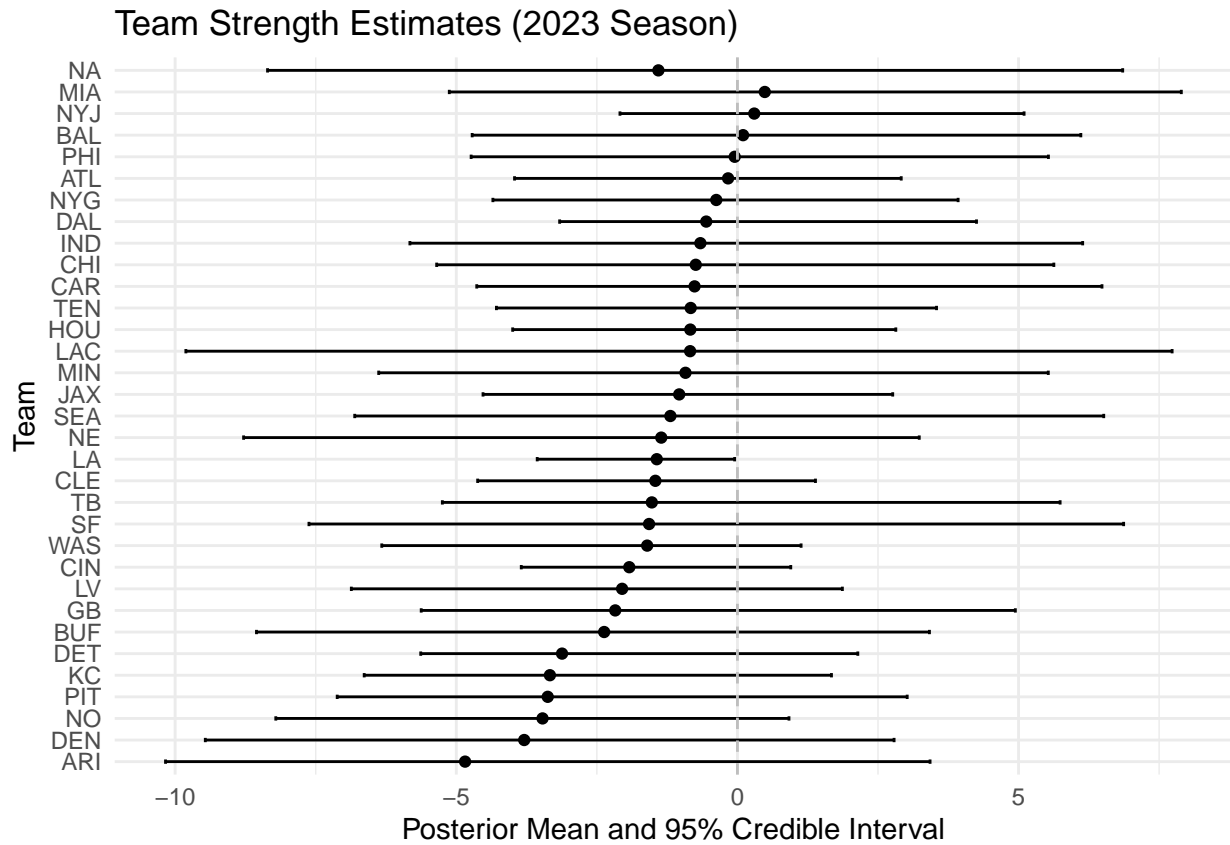
Team–Specific Home Field Advantage

intervals are massive, but appears dallas has best HFA and arizona has the worst, which kinda makes sense

Team Strength Estimates (2023 Season)

besides the legendary NA, Carolina was really strong... is that right? there are very wide intervals still so that could be an issue. denver is bad it seems