MetaCapstone

2025-12-04

Join Tables

```
library(tidyverse)
```

```
## -- 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 ggplot2   4.0.0     v tibble    3.3.0
## v lubridate 1.9.4     v tidyr     1.3.1
## v purrr     1.1.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## 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
```

```
linpred <- read.csv('LinReg_predictions_2025.csv')
linpred <- linpred %>% select(player,LinReg_pred_WRC.)
rfpred <- read.csv('RF_predictions_2025.csv')
rfpred <- rfpred %>% select(player,actual,RF_prediction)
ridgepred <- read.csv('residuals_ridge_2025.csv')
ridgepred <- ridgepred[!duplicated(ridgepred), ]

data1 <- rfpred %>% left_join(linpred)
```

```
## Joining with `by = join_by(player)`
```

```
data1 <- data1 %>% inner_join(ridgepred)
```

```
## Joining with `by = join_by(player)`
```

Fit Model

```
metamodel <- lm(actual~RF_prediction+LinReg_pred_WRC.+Ridge_predicted,data=data1)
summary(metamodel)
```

```
##
## Call:
## lm(formula = actual ~ RF_prediction + LinReg_pred_WRC. + Ridge_predicted,
##     data = data1)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -22.4733  -5.7852   0.6548   6.1870  25.1392
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)      -54.62334    7.47989  -7.303 2.20e-11 ***
## RF_prediction     -0.34024    0.12542  -2.713  0.00754 **
## LinReg_pred_WRC.   0.32944    0.07275   4.528 1.29e-05 ***
## Ridge_predicted    1.46980    0.12187  12.061  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 9.308 on 135 degrees of freedom
## Multiple R-squared:  0.807,  Adjusted R-squared:  0.8027
## F-statistic: 188.1 on 3 and 135 DF,  p-value: < 2.2e-16
```

```
predictions <- predict(metamodel)
predictions
```

```
##         1         2         3         4         5         6         7         8
## 192.68725 175.05861 160.45299 159.57992 159.66977 143.02324 133.65011 148.17925
##         9        10        11        12        13        14        15        16
## 126.11381 139.26639 131.50850 130.65865 138.99674 132.02219 135.33734 133.16353
##        17        18        19        20        21        22        23        24
## 114.10613 125.21348 108.60305 131.72059 135.30949 121.46954 127.56282 130.96881
##        25        26        27        28        29        30        31        32
## 128.61612 123.32304 130.72251 140.55974 121.31417 115.07244 116.04529 116.27355
##        33        34        35        36        37        38        39        40
## 121.94076 117.25554 120.05915 124.78654 105.77336 130.56434 121.73298 104.94440
##        41        42        43        44        45        46        47        48
## 118.72449 119.25714 125.91629 110.32790 114.18298 112.10697 115.34198 113.90865
##        49        50        51        52        53        54        55        56
## 125.45109 109.16578 124.70465 123.35862 116.93453 127.92967 112.22467 127.86137
##        57        58        59        60        61        62        63        64
## 118.79184 126.22990 119.68328 120.14405 110.84633 112.73868 124.59627  97.68048
##        65        66        67        68        69        70        71        72
##  97.51883 110.63256 104.06096 102.05500  95.92302 113.72748 119.59089 116.65498
##        73        74        75        76        77        78        79        80
## 103.48676 108.37559 107.97271  95.23831 111.88276 108.13507 110.02058 117.72488
##        81        82        83        84        85        86        87        88
## 125.02910 105.50225 101.17465 100.87212  97.12454 119.54221  98.00525  98.95040
##        89        90        91        92        93        94        95        96
## 107.34021  96.19952 110.29846 100.69041  96.24899 100.84436  91.62672 103.45943
##        97        98        99       100       101       102       103       104
## 116.16250  95.78663 101.97648  95.66655 103.33773  97.51372 102.29069 106.85695
##       105       106       107       108       109       110       111       112
##  94.42915 101.40749 106.21333  95.59576  96.58685  82.63488 113.32041 107.74623
##       113       114       115       116       117       118       119       120
```

```
## 100.09798  93.34325  97.29217 101.46460  87.61743  94.10680  84.57603 107.67652
##       121       122       123       124       125       126       127       128
##  89.47503  90.03837 102.87753  99.29883  99.34805  79.80432 103.51234  96.68879
##       129       130       131       132       133       134       135       136
## 108.10980  90.21395 102.59561  92.28619  96.91130  92.53881  87.99952  74.21279
##       137       138       139
##  77.33378  86.19013  73.99056
```

```
data1 <- data1 %>% mutate(meta_predictions = predictions) %>% mutate(residual = actual-predictions)
data1 <- data1 %>% select(player,actual,meta_predictions,residual)
```

```
mean(abs(data1$residual))
```

```
## [1] 7.363324
```