

Group 3: Predicting WAR

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Overview

- ▶ Goal: build a model to predict WAR (Wins Above Replacement)
- ▶ WAR measures a player's total contribution compared to a replacement-level player
- ▶ Interpreted as the number of additional wins a player adds to a team



Figure 1: War Ratings Chart

Models used

-OLS - Simple
regression analysis

▶ LASSO
▶ Feature
selection

▶ Boosting
▶ Tree based
method

OLS Models

- ▶ OLS identifies and measures the relationship between a response variable and predictor variables.
- ▶ Finds a best-fitting line through a set of data points
- ▶ Pros: Convenient, accurate regression results for linearly related data
- ▶ Cons: May be too simplistic for real world examples, assumptions of Linear Regression

OLS Metrics Plot

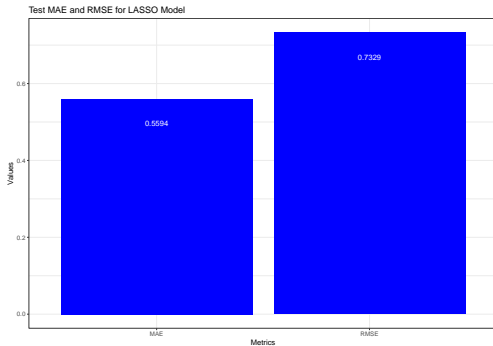
- ▶ I need a drink

LASSO Models

- ▶ LASSO models perform regularization (L_1), which shrinks some coefficients to exactly zero
 - ▶ Essentially feature selection
- ▶ Pros: Produces a more interpretative model, prevents over fitting
- ▶ Cons:

LASSO metrics plot

- ▶ Metrics ran on split training data
- ▶ Good performance? dawg idk



Boosting Models

- ▶ Boosting grows trees sequentially using information from previously grown trees
 - ▶ Each tree fit on a modified version of the original data set

Boosting metrics plot

- Metrics ran on split training data

