

NBA Player Salary Analysis

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A dark blue diagonal gradient bar that starts from the bottom left and extends towards the top right, covering the lower half of the slide.

How much are NBA contracts worth?



Stephen Curry, Golden State Warriors
2021-2022 season salary:
\$45.8M



Tyler Herro, Miami Heats
2021-2022 season salary:
\$4.0M



Kyle Singler, Oklahoma City Thunder
2021-2022 season salary:
\$1.0M

Methodology

Scrape Basketball-Reference.com

- Per season player stats
- Respective team season stats
- Respective team playoff stats



Feature engineering

- Log transformed annual salary
- Stats by minutes played per game
- Interaction terms: age & minutes played



Linear regression and regularization

- Iterative feature engineering & evaluation for model improvement
- Regularized regression model with CV to avoid overcorrection for outliers

Valuation of an NBA player



- Current salary: \$41M
- Physique: 6'9", 250lbs
- Age: 36
- Positions: PG, SG, SF, PF
- 4-time NBA Champion

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Per season statistics (2020-21 season)

- Games played: 45 games
- Points scored per game: 25.0 points/game
- Shot accuracy: 57.6% per attempt

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Team stats (LA Lakers, same season)

- Regular season Win-Loss: 42-30
- Regular season standing: Western Conf. #7
- NBA Playoffs record: Eliminated at 1st rd

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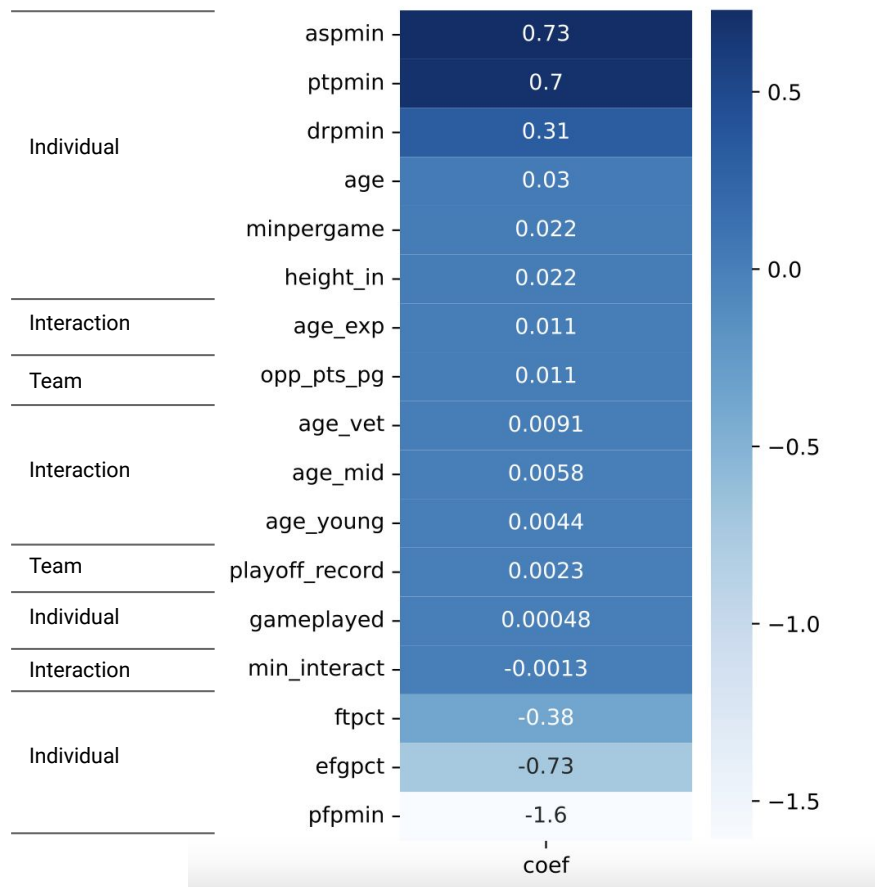


Insight

Linear: R2 0.6066, MAE 1.2*

Ridge CV: R2 0.6063, MAE 1.2

~~Polynomial: R2 0.6746, MAE 1.6~~



Most overpaid?



**Andrew Wiggins, 2020–2021,
Golden State Warriors**

Actual salary: \$29.5M
Model fair value: \$9.1M (–69%)

Most underpaid?



**LeBron James, 2019–2020,
Los Angeles Lakers**

Actual salary: \$37.4M
Model fair value: \$74.9M (+100%)

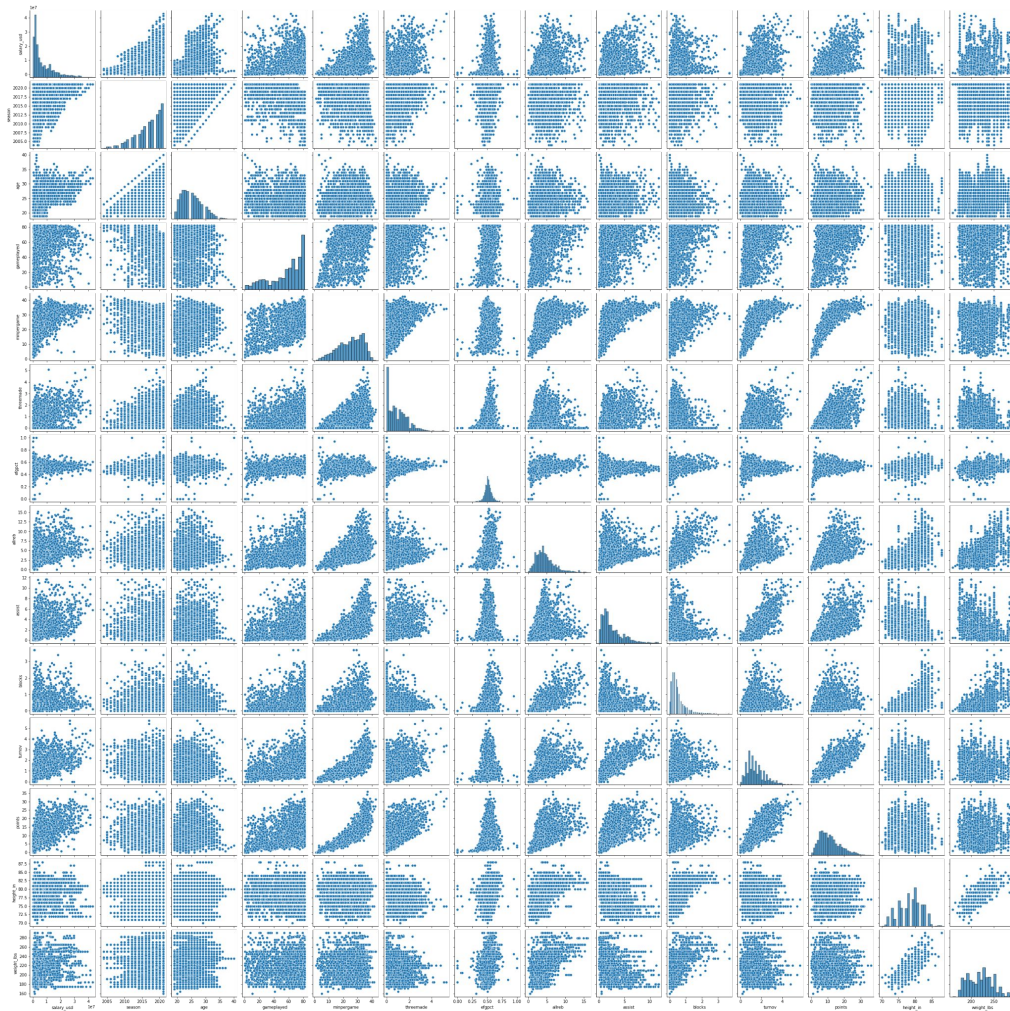


Future works:

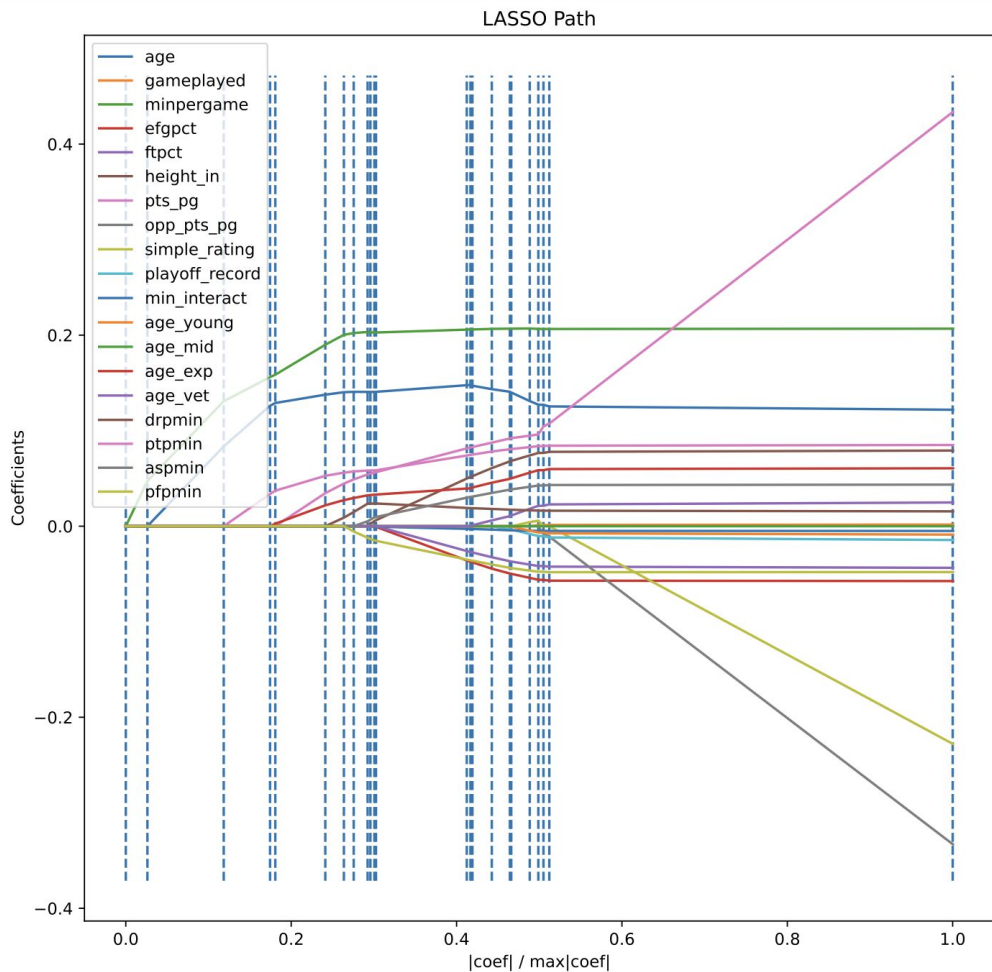
- Expand predictor variables at per-game level statistics
- Regroup the observations to consider contract lengths
- Incorporate time-series to account for changes in NBA League policy regarding player salaries, as well as general inflation

Appendix

Appendix



Appendix



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