**STATISTICAL LEARNING PROJECT**

**STATS GLOSSARY**

* PLAYER NAME: players’ name
* SALARY: salary earned by a player for 2023-2024 season
* AGE: players’ age
* POS: “Position”, states the playing position of a player

**TRADITIONAL STATS**

* GP: “Games played”, the number of games played by a player during the 2023-2024 regular season
* FG\_PCT: “Field Goal Percentage”, The percentage of field goal attempts that a player makes. Formula: (FGM)/(FGA)
* FG3\_PCT: “3 Points “Field Goal Percentage”, The percentage of 3pt field goal attempts that a player makes.
* FT\_PCT: “Free throws Percentage”, the percentage of free throws attempts that a player makes
* OREB: “Offensive Rebounds”, The number of rebounds a player or team has collected while they were on offense
* DREB: “Defensive Rebounds”, The number of rebounds a player or team has collected while they were on defense
* REB: “Rebounds”; A rebound occurs when a player recovers the ball after a missed shot. This statistic is the number of total rebounds a player or team has collected on either offense or defense
* AST: “Assists”, The number of assists -- passes that lead directly to a made basket -- by a player
* TOV: “Turnovers”; A turnover occurs when the player or team on offense loses the ball to the defense
* STL: “Steals”, Number of times a defensive player or team takes the ball from a player on offense, causing a turnover
* BLK: “Blocks”, A block occurs when an offensive player attempts a shot, and the defense player tips the ball, blocking their chance to score
* BLKA: “Blocks Against”, The number of shots attempted by a player or team that are blocked by a defender
* PF: “Personal fouls”, The number of personal fouls a player or team committed
* PFD: “Personal fouls drawn”, The number of personal fouls that are drawn by a player or team
* PTS: “Points”, the number of points scored by a player
* MIN: “Minutes played”, number of minutes played by a player during the 2023-2024 Regular season
* MIN\_G: “Minutes played per game”

**ADVANCED STATS**

* OFF\_RATING: “Offensive Rating”, Measures a team's points scored per 100 possessions. On a player level this statistic is team points scored per 100 possessions while they are on court. Formula: 100\*((Points)/(POSS)
* DEF\_RATING: “Defensive Rating”, The number of points allowed per 100 possessions by a team. For a player, it is the number of points per 100 possessions that the team allows while that individual player is on the court. Formula: 100\*((Opp Points)/(Opp POSS))
* NET\_RATING: “Net Rating”, Measures a team's point differential per 100 possessions. On player level this statistic is the team's point differential per 100 possessions while they are on court. Formula: OFFRTG - DEFRTG
* AST\_TO: “Assist to Turnover Ratio”, The number of assists for a player or team compared to the number of turnovers they have committed
* TS\_PCT: “True Shooting Percentage”, A shooting percentage that factors in the value of three-point field goals and free throws in addition to conventional two-point field goals. Formula: Points/ [2\*(Field Goals Attempted+0.44\*Free Throws Attempted)]
* USG\_PCT: “Usage Percentage”, The percentage of team plays used by a player when they are on the floor. Formula: (FGA + Possession Ending FTA + TO) / POSS
* PIE: “Player Impact Estimate”, PIE measures a player's overall statistical contribution against the total statistics in games they play in. PIE yields results which are comparable to other advanced statistics (e.g. PER) using a simple formula. Formula: (PTS + FGM + FTM - FGA - FTA + DREB + (.5 \* OREB) + AST + STL + (.5 \* BLK) - PF - TO) / (GmPTS + GmFGM + GmFTM - GmFGA - GmFTA + GmDREB + (.5 \* GmOREB) + GmAST + GmSTL + (.5 \* GmBLK) - GmPF - GmTO)
* WS: “Win Shares”; an estimate of the number of wins contributed by a player.
* BPM: “Box Plus/Minus”; a box score estimate of the points per 100 possessions that a player contributed above a league-average player, translated to an average team
* VORP: “Value Over Replacement Player”; a box score estimate of the points per 100 TEAM possessions that a player contributed above a replacement-level (-2.0) player, translated to an average team and prorated to an 82-game season. Multiply by 2.70 to convert to wins over replacement.

**Notes:**

BPM and VORP are calculated per 100 possessions; MIN is a total stat for the whole regular season, MIN\_G is calculated per game. The other stats are considered per 48 minutes. (vedi WS)

We performed a web scraping operation from the [Official NBA Stats](https://www.nba.com/stats) website, from which we collected most of the stats. Additionally, we downloaded data about the salaries from https://hoopshype.com/ and other stats of interest from https://www.basketball-reference.com.

All data concerns the 2023-2024 NBA Regular Season.