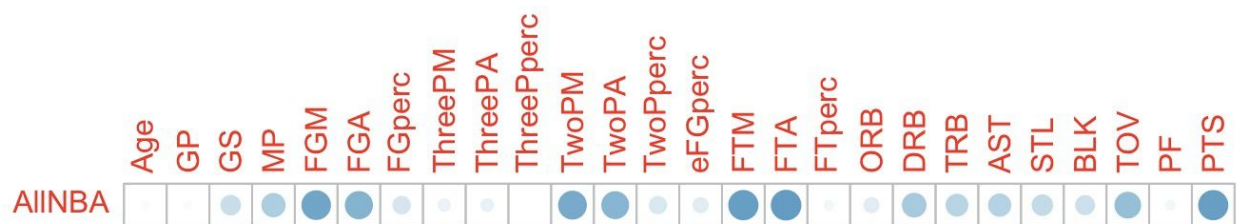Dylan Lee

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Analyst Intern, Data Science & Solutions Project

1. To predict the number of All-NBA selections for any given player at any point in their NBA career, I broke the problem down into two areas: modelling and forecasting. The All-NBA team is made up of six guards, six forwards, and three centers and is selected at the end of the season based on the performance of the players during the season. Since each position tends to average different stats, I created three logistic regression models to predict whether a player is going to make the All-NBA team after a season for each position: guard, forward, and center. Also, I created a simple algorithm to project a players stats for the next season based on their stats from the prior three seasons. Putting the two aspects together, I modelled current NBA players stats for the next 15 seasons and predicted who would make the All-NBA team each season.

2. Correlation Plot: All-NBA Selection vs. Player's Season Total Stats

   The correlation plot shows which stats are correlated with an All-NBA selection for a given season. We see that the scoring stats have the highest correlation, while the counting stats, like rebounds, are secondary. However, when fitting the model, I found that not all scoring stats were needed to predict All-NBA selections, and that stats like minutes played, free throws, and turnovers were more significant predictors. This makes sense because more 3-pts and 2-pts imply higher FGM and points, and so not all variables are needed. But, stats like minutes played, free throws made/attempted, and turnovers might indicate a player's usage rate on the court, hence boosting their counting stats overall and demonstrating the player's value.

3. I ran a simulation of 100 scenarios and for each scenario, I counted how many All-NBA selections each player received. For the likelihood, I counted how many times each player had the most selections and divided it by the number of simulations (100)

   Total number of All-NBA selections remaining in player's career:

   Luka Doncic: 8   Kyrie Irving: 1   Steph Curry: 1   KAT: 7

   Likelihood each player has the greatest number of All-NBA selections remaining:

   Luka Doncic: 0.61   Kyrie Irving: 0.01   Steph Curry: 0   KAT: 0.46

*likelihoods don't add up to exactly 1 because of ties that occurred in the simulation