NBA Project Progress Report 1

Andrew Liu, Willis Lu, Reed Peterson
Mentor: Prof. MacDonald
Client: Kostas Pelechrinis

Understand and Identifying the Problem

Can we accurately identify how good an NBA player is?

- There are many ways we can try to rate an NBA player, one way is through viewing their +/- statistic.

Can we use NBA +/- data along with other potential data to effectively evaluate how good a player is?

Overall Issues and Objectives

Overall Objective - Use a Bayesian Regression using priors based on box score +/-, to predict actual +/- for NBA players.

Issues

1. Box score +/- may not paint a complete picture for our priors.
2. Other potential priors exist such as using contract value as a predictor for how many points a player scores.
3. Are there any outside factors that might impact our results, such as playoffs vs regular season?
4. Player +/- is certainly affected by how good the team is. Can we adjust for this?

Specific Contributions

- Algorithm in Python
- Testing out different priors related to contracts:
  - Proportion of player's contract value vs total salary cap
  - Previous studies showed that every ~$3 mil a player is paid translates to 1 win
    - contract -> projected wins metric
- Kostas was flexible with the final deliverable: he was okay with research paper, but he prefered some sort of interactive visualization for our findings

Technical Knowledge of Client

Professor Kostas Pelechrinis is a professor at the University of Pittsburgh and a presenter at the MIT Sloan Sports Analytics Conference. He is very interested in sports research and has very high technical knowledge.

He has already shared with us some code that he was working on to identify team ratings to potentially add as an adjustment for +/-.

Q & A

Thank you!