

An Improved Fantasy Basketball Prediction Tool

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1 Motivation and Background

Fantasy Basketball is one of the most popular free web games. This game allows players to form their “dream teams” by picking different players from the National Basketball Association (NBA) and compete with other players’ teams. The game uses the statistics of these players in real-life games to determine which team wins each match. Fantasy Basketball can be played in one of two formats. When Fantasy Basketball is played according to “categories,” team performance is judged by the cumulative number of points, assist, rebounds made by the team, as well as by various other statistics such as field goal percentage. The team that wins the most “categories” wins the match for that week. In points setting, each move a player makes will be rewarded with a certain number of points, and the team with the most points wins the match. This project is primarily focused on the points league setting, as it is a simpler setting to play, so it is more popular.

Currently, the websites which are responsible for hosting the Fantasy Basketball system (namely ESPN.com and Yahoo!) offer players projections of the fantasy teams assembled during the draft. However, these projections fail to consider several factors, such as injuries, customized settings (i.e. different leagues awarding points differently), etc. Thus, a key aim of this project is to create a tool that offers improved predictions to inform players’ draft picks.

2 Methods

In order to prevent selective bias by using only one website, projections from Yahoo!, ESPN, Basketball Monster, and several other websites will be used. A limitation of these current websites is that they make predictions

based on averages of various performance indicators. However, averaging can often misrepresent the current performance of players who may have recently suffered an injury, and are therefore no longer advisable draft picks. In the more widely used points-based (rather than category-based) league, projections for total number of points are more relevant statistics. A good prediction about a player's health can be made using a weighted average of the games played, with the most recent seasons assigned heavier weights (because players become more likely to sustain injury as they age). The prediction model is implemented using feature selection, linear regression, and win-loss classification, as discussed by a previous paper from Pennsylvania State University.¹ Another important aspect that this project emphasizes is the option for customized settings. While there are forty three categories available on ESPN which can be used to determine the points setting, this tool will allow players to further customize settings, so each league has its own unique projections and rankings. Additionally, this tool will notify users of lesser-known players who are doing well but still going unnoticed. Lastly, the idea of "efficient points" discussed in a previous Statistics 157 project is adapted for use in the projections made by this tool.²

3 Resources

Besides the two articles mentioned above, these websites are used as well.

For Projections:

<http://games.espn.go.com/fba/tools/projections?display=alt>
<http://sports.yahoo.com/news/fantasy-basketball-rankings-top-100-173741437.html>
<https://basketballmonster.com/>
<http://www.fantasypros.com/nba/projections/ros-overall.php>
http://www.rotoworld.com/premium/draftguide/basketball/main_page.aspx
<http://edraft.com/nba/fantasy-basketball/rankings/?season=2014-2015>
<http://fflockerroom.com/fantasy-basketball/>

Hopefully this tool will become something like these:

<http://www.fb-ninja.com/>
<http://www.hashtagbasketball.com/>

¹<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.278.4919&rep=rep1&type=pdf>

²http://www.stat.berkeley.edu/~aldous/157/Old_Projects/lu-zhang.pdf