“I pledge my honor that I have abided by the Stevens Honor Code.”

Shiddharath Patel
Sankalp Patel
Hardik Veguru

Final Project Summary

For our final project, we created an application using Jupyter Notebook that would be able to predict who wins the two different NBA awards: Most Valuable Player (MVP) and Rookie of the Year (ROTY). First, it was important to obtain data about a player’s shot percentage, free throw percentage, 3-point shot percentage, steals, rebounds, number of minutes played, and various other statistics that describe the performance of the player during the season as a whole. This project was completed by utilizing python libraries such as Pandas, BeautifulSoup, Scikit Learnand, and Selenium. These libraries were implemented to parse through all the data points and be able to predict the overall winners.

After researching online, we found a tutorial on how to predict the MVP in the NBA. We followed this guide and were able to understand how the machine learning model worked. We decided to improve the prediction for a specific season, namely 2020, and were able to get a 96% accuracy rate. Overall, we were able to obtain a 73% accuracy rate for 30 seasons, using random forest regression. We thought it would be interesting to use machine learning to predict a ROTY, so we attempted to use the similar logic for ROTY that we had previously used for MVP. However, ROTY does not pertain to all the same criteria as an MVP would. For instance, ROTY does not utilize team win/loss ratio, turnover rates, and personal fouls.

Our ROTY predictor gave a significantly low percentage of accuracy when compared to our MVP predictor. This was surprising as the logic applied was the same as the MVP predictor. We assumed that we would be able to improve our ROTY predictor by finding more accurate data of rookies in the NBA, or by improving our current data by altering it to compare all rookies from 2000 to 2021 and all the rookies that have won ROTY in those seasons. Another way to advance this would be by finding more machine learning algorithms, or finding predictors that determine which rookie is truly a ROTY.

We did not have the desired outcome we expected for the ROTY prediction. Therefore, we will be continuing to work on the ROTY predictor to make more accurate predictions which can be used for upcoming NBA seasons since this is a project that we enjoyed doing.

Links:
Basketball Reference - https://www.basketball-reference.com/
Youtube Tutorial - https://www.youtube.com/watch?v=JGQGd-oa0l4