NBA Shot Chart Dashboard

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Our final project is an interactive NBA Shot Visualizer for the 2020-2021 season. The dashboard itself consists of two drop-down menus, one of which allows the user to select any of the 30 NBA teams, and the other allows the user to select any player from that selected team. As the selections are made, two scatter plots update with made and missed shot locations for the entire team as well as the individual player. Additionally, a row of player statistics from the 2020-2021 season repopulates below the filters and scatter plots. These three figures give an accurate portrayal of that players role and performance on the team.

The results of our dashboard are exactly what we envisioned. While the player and team shot charts do not have a picture of the basketball court, the team’s scatter plot gives a visual understanding of where the three-point line is. This is a good reference for the player’s scatter plot directly adjacent.

The data for the dashboard were acquired in two methods. The statistics for each player in the NBA were webscraped using the requests library. These statistics were placed in a dataframe that could be tailored to the users selections. The shot locations were acquired through the nba\_api in python. Once the nba\_api was installed, the criteria we needed for our dashboard was entered into the api request. These include the season, type of shots (total field goals attempted in our case), and specific players and teams. To obtain the data for all players on all teams, “0” was entered for player\_id and team\_id.

Once all of the data was obtained and in their proper dataframe, the dashboard could begin to be created. We created param widgets that were dependent on previous selections. These widgets were individually defined to use hvplot scatter plots, with separate colors for made and missed shots. The first to be created was the team. This selection was what the player hvplot widget was dependent on. Similarly, the hvplot table was dependent on the team selection and player selection. Finally, the dashboard was adjusted and tweaked to fit our plots, a legend, and the titles in an easy to understand and intuitive fashion.