# Analysis of Draft Data Report (1989-2021):

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## In Depth Drafting Trends Comprehension

### Team and Name Trends

Since 2000, there have been 41 players drafted from Duke University into the NBA. Of those players, they have been selected by teams as follows:

| Team Acronyms | Number of Players Drafted from Duke (since 2000, inclusive) |
|---|---|
| **ATL**, CHI, CLE, POR | 3 |
| BOS, CHO, DET, IND, LAL, SAC, SAS, UTA | 2 |
| BRK, CHA, GSW, LAC, MEM, MIA, MIL, NOH, NOP, NYK, ORL, PHI, PHO | 1 |

Since 1989, there have been 96 players drafted in even numbered draft years with names starting with the letter “D”. Of those players, they have been selected by teams as follows:

| **Number of Players** | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|
| **Team** | BOS, SEA | | **ATL**, MIL | DAL, DEN, LAL, MIA, SAS | CHI, CLE, DET, GSW, MEM, NYK, ORL, SAC | CHH, IND, LAC, MIN, NJN, NOH, PHI, PHO, POR, TOR | CHA, HOU, NOP, OKC, UTA, WAS |

### First Round Pick Trends

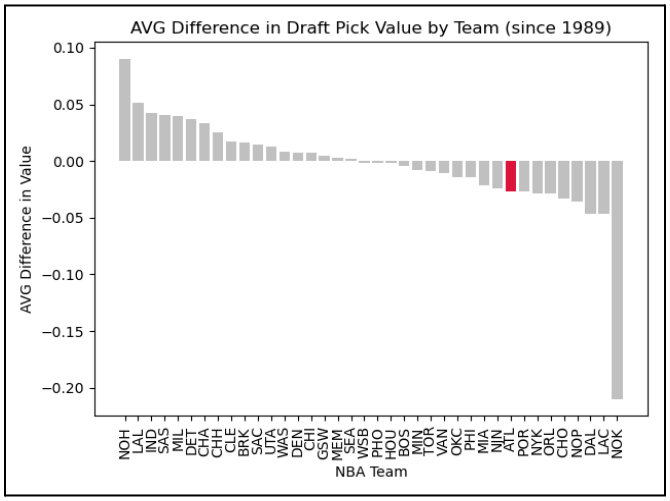
Analysis: Based on the statistical analysis of the data, **the average correlation between the year and the first-round pick number for each team is -0.0479**. This would imply that there is a very weak negative correlation between a team’s first round pick and their next pick. However, with an **average p-value of 0.4342 for all teams**, we can conclude the relationship is not statistically significant. **For the Atlanta Hawks specifically**, there is a **correlation of -0.0765** and a **p-value of 0.6389**. All of this suggests that there is no strong linear trend or pattern in the draft position of first-round picks from one year to the next.

# Player Evaluation

My evaluation of each player outputs a percentile for each player as compared to other players. It is calculated by taking a player's percentile in all the numerical stat columns within the data and then averaging all those percentiles to get a final number. This method accounts for both longevity (with columns like minutes played, total points, Win Shares, etc.) and skill (points per game, shooting percentages, box +/-, etc.) to hopefully get an overall evaluation of the player. As a worked example, a player like Kevin Durant who has a long career while also having played well through his career has the highest percentile number at 0.967. Please note that the player evaluation value is not a percentile itself as I wanted to allow superior talents to have superior gaps to players below them instead of adjusting the range again.

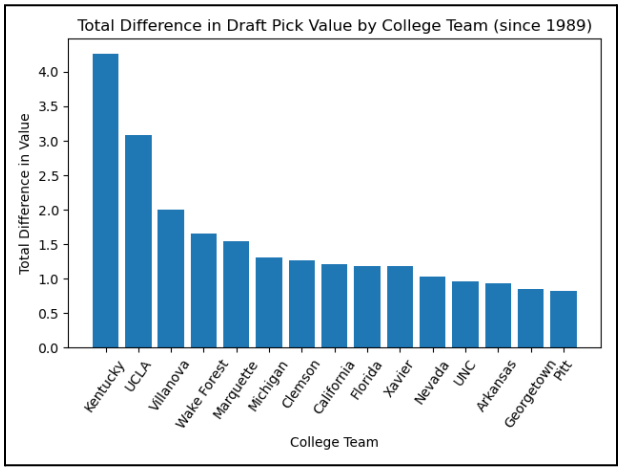
## NBA Drafting Ability

To evaluate each team's drafting ability I first calculated the average percentile of each draft slot which ranges from 0.813 (pick #3) to 0.015 (pick #59). Then I calculated how much each player over or under performed their draft slot by taking the difference of their percentile and the slot's average percentile (i.e. Kevin Durant: 0.967 - 0.753 = 0.21 better than expected). Finally I calculated the average difference that each team had with their picks and plotted them on a bar chart (*see right*). Teams with a positive difference have overperformed their draft positions and teams with a negative difference have underperformed. The Hawks are highlighted red in the bar chart.




## College Draft Preparation

For college teams, instead of taking the average difference, I took the total difference. Since there are an uneven number of players coming out of respective colleges, I didn't want one player from one college skewing the data by severely outperforming his slot. To the right are the top 15 teams that have outperformed.




## Further Research

Moving forward there are several avenues I would pursue further. First, most of the stats listed are offensive based and don't take into account the defensive skill of a player. In addition, the data assumes all stats have the same impact on winning. More research into the most important stats that contribute to winning could allow weighting of the columns differently to adjust the rankings. Finally, it would be interesting to look at international leagues/teams similar to the colleges to evaluate their performance.