

NBA All-Star Analysis

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Introduction

In the NBA, individual players are more important and popular than in other team sports due to basketball's smaller team size and game rules. This has made the NBA a star-driven league, with the all-star game highlighting the best players each season. This research aims to analyze the performance and legacy of these players over 42 years in order to discover the greatest all-stars in modern NBA history.

Dataset

- The dataset used is a representation of the season stats for each all-star from the years 1980-2022 (the picture used is an example from 1980)

0	Julius	Erving	PHI	1980	82.0	35:02:00	9.68	18.59	0.05	0.22	...	8.01	4.44	2.62	1.73	3.40	2.84	24.56	0.521	0.220	0.78
1	Eddie	Johnson	ATL	1980	75.0	35:55:00	7.64	15.16	0.08	0.32	...	2.39	5.47	1.54	0.11	2.70	2.53	19.08	0.504	0.249	0.78
2	Artis	Gilmore	CHI	1980	81.0	34:31:00	6.67	9.93	0.00	0.00	...	10.06	2.15	0.77	2.43	3.31	3.58	17.89	0.672	0.000	0.70
3	Reggie	Theus	CHI	1980	81.0	34:20:00	6.58	13.38	0.22	1.09	...	3.56	5.41	1.73	0.28	3.65	3.14	18.84	0.492	0.203	0.80
4	Larry	Bird	BOS	1980	82.0	39:30:00	8.77	18.33	0.24	0.92	...	10.91	5.50	2.61	0.84	3.69	2.91	21.23	0.478	0.266	0.86
5	Robert	Parish	BOS	1980	82.0	28:01:00	7.74	14.22	0.00	0.01	...	9.48	1.77	1.10	3.00	2.41	3.78	18.93	0.545	0.000	0.71
6	Nate	Archibald	BOS	1980	80.0	35:15:00	4.78	9.58	0.00	0.09	...	2.20	7.73	1.24	0.22	3.61	2.50	13.83	0.499	0.000	0.81
7	Micheal	Ray Richardson	NYK	1980	78.0	40:06:00	6.59	14.13	0.29	1.39	...	6.90	7.99	3.66	0.42	3.67	3.27	16.31	0.466	0.212	0.66
8	Marques	Johnson	MIL	1980	76.0	33:26:00	8.37	15.17	0.00	0.13	...	6.79	4.54	1.50	0.55	2.59	2.58	20.28	0.552	0.000	0.70
9	Bobby	Jones	PHI	1980	81.0	25:15:00	5.02	9.32	0.00	0.04	...	5.37	2.79	1.39	0.99	1.76	2.75	13.53	0.539	0.000	0.81
10	Mike	Mitchell	CLE	1980	82.0	38:57:00	10.40	21.84	0.05	0.11	...	6.12	1.70	0.75	0.63	2.27	2.43	24.54	0.476	0.439	0.78
11	Paul	Westphal	SEA	1980	36.0	29:56:00	6.14	13.89	0.17	0.69	...	1.89	4.11	1.11	0.46	2.17	1.94	16.69	0.442	0.240	0.83
12	George	Gervin	SAS	1980	82.0	33:43:00	10.37	21.11	0.11	0.44	...	5.11	3.17	1.15	0.63	3.38	2.59	27.09	0.491	0.250	0.82
13	Kareem	Abdul-Jabbar	LAL	1980	80.0	37:12:00	10.45	18.21	0.00	0.01	...	10.26	3.40	0.75	2.87	3.08	3.05	26.19	0.574	0.000	0.76
14	Walter	Davis	PHO	1980	78.0	27:58:00	7.60	14.12	0.09	0.22	...	2.56	3.87	1.26	0.15	2.85	2.46	17.97	0.539	0.412	0.83
15	Adrian	Dantley	UTA	1980	77.0	42:35:00	11.29	20.13	0.03	0.06	...	6.22	4.05	1.47	0.22	3.54	3.07	30.45	0.561	0.416	0.80
16	Jamaal	Wilkes	LAL	1980	81.0	37:22:00	9.70	18.46	0.01	0.16	...	5.37	2.90	1.50	0.35	2.61	2.75	22.56	0.526	0.077	0.75
17	Dennis	Johnson	PHO	1980	79.0	33:06:00	6.73	15.44	0.14	0.65	...	4.59	3.68	1.72	0.76	2.63	3.09	18.81	0.436	0.216	0.82
18	Moses	Malone	HOU	1980	77.0	40:26:00	10.03	19.29	0.01	0.03	...	14.82	1.78	1.07	1.92	4.04	2.79	27.69	0.520	0.390	0.75
19	Truck	Robinson	PHO	1980	82.0	37:39:00	7.89	15.61	0.00	0.00	...	9.62	2.51	0.83	0.46	3.05	2.68	18.82	0.505	0.000	0.62
20	Jack	Sikma	SEA	1980	82.0	35:36:00	7.26	15.99	0.00	0.06	...	10.39	3.04	1.05	1.16	2.45	3.44	18.66	0.454	0.000	0.82
21	Otis	Birdsong	KCK	1980	71.0	36:32:00	10.01	18.39	0.14	0.56	...	3.63	3.28	1.35	0.25	2.34	2.42	24.63	0.544	0.251	0.69

Methodology

The 3 main questions are:

1. Who made the most all-star appearances between 1980-2022?
2. Who were the players that only had one appearance?
3. Out of all the all-star players, who has the highest career scoring average?

Pandas, NumPy, and matplotlib were used to extract and analyze data.

Most All- star appearances

To solve this question, we may need to use the group-by method (grouping player names) along with some aggregation. We will record each unique all-star year per player and add it to their specific summation, eventually using descending order.

One All- star appearance

This will be done with a similar method to the previous question, except with prioritization for players with a single appearance.

Highest points per game

The main method philosophy here will be calculating average and sorting them out. The points data will be considered numerical values, the mean of the scoring years will be calculated, and each cumulative scoring average will be compared in descending order.