



If you know the enemy and know yourself you need not fear the results of a hundred battles.

- Sun Tzu

PROBLEM STATEMENT

The traditional 5-man lineup in basketball incorrectly oversimplifies the roles of basketball players in today's NBA.

- Point Guard
- Shooting Guard
- Small Forward
- Power Forward
- Center

PROBLEM STATEMENT

How do we define a role for a player when his abilities go beyond his pre-established position?

Who do we surround him with to maximize his strengths and minimize his weaknesses?



PART 1: REDEFINE PLAYER POSITION

Using machine learning, I will reclassify traditional player positions to encapsulate players with contrasting playing styles, currently listed as playing the same position.

Russell Westbrook, Point Guard



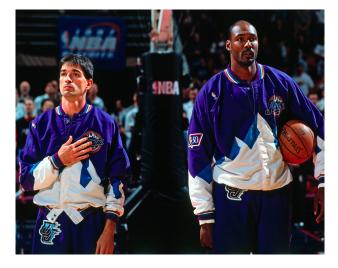
Stephen Curry, Point Guard



PART 2: OPTIMIZE 5-MAN LINEUPS AND COMBINATIONS

With new position tags in place, I will train my model with winning teams from past history to find the most optimal lineups that maximize player strengths and minimize player weaknesses.





PART 3: MAXIMIZE FUTURE NBA TEAM CONSTRUCTION

Analyzing optimal lineups that take advantage of player positional strengths will provide a blueprint for future teams.

Understanding the strengths and weaknesses of a lineup will allow teams to focus on specific areas of player development.



DATASETS

In order to explore this topic, I will need to scrape data from a few sources. But apart from the box scores, I will also use demographic data, college data, and personal information in order to define new positions and playing styles.

BASKETBALL-REFERENCE.COM



SYNERGY SPORTS TECH

Offensive		Defensive				Cumulative Box									
Report Contents		Print	Possessions	/ Game	Report	Generated: 01/	24/2017		_						
Season: 2016-2017 Team: Boston Celtic	S Date I	Range: 10/26/	016 to 01/.	21/2017	No	imber of Games:	43	ļ,							
Overall Offense	% Time	Poss	Points	PPP	Rank	Rating	FGm	FGM	FGA	FG%	aFG%	%T0	%FT	%SF	%Score
Boston Celtics	100%	4710	4614	0.98	9	Very Good	2029	1673	3702	45.2%	52.2%	10.9%	10.39	8%	44.4%
Transition	11.8%	557	584	1.048	24	Below Average	222	211	433	48.7%	54.5%	11.1%	13.5%	11.7%	48.1%
Overall Half Court	88.2%	4153	4081	0.983	4	Excellent	1851	1494	3345	44.7%	51.7%	11.1%	9.9%	7.5%	43.9%
Short Shot Clock <4 Seconds	10.6%	497	383	0.771	18	Average	282	142	424	33.5%	38.7%	8.9%	6.456	4.8%	34.4%
			Brea			Bounds / After	Time Ou	t Situati						-	
Out of Bounds (End)	2.5%	102	86	0.843	21	Average	52	32	84	38.1%	44.6%	10.8%	9.8%	6.9%	37.3%
Out of Bounds (Side)	8%	334	327	0.979	4	Excellent	149	108	257	42%	48.2%	9.9%	14.4%	11.4%	44.9%
After Time Outs	16.5%	684	669	0.978	3	Excellent	304	239	543	44%	50.7%	11%	11.19	8.3%	44.2%
			Breakdo	wn of Ha	If Cour	t Offensive Situ	ations b	Defens	e Type:						
Against Man	99.5%	4133	4058	0.982	4	Excellent	1842	1484	3326	44.6%	51.7%	11.2%	10%	7.5%	43.9%
Against Zone	0.5%	20	23	1.15	4	Very Good	9	10	19	52.6%	60.5%	5%	0%	0%	50%
				Break	down o	f Full Court Pres	ss Situat	ions:							
Press Offerse	1.3%	55	66	1.2	1	Excellent	17	13	30	43.3%	50%	7.3%	38.2%	10.9%	61.8%
	,				Vi	deo Not Availab	le								
Video Not Available	0%			0.00						120	120	125			220
			Points			Rating							%FT		%Score
	Time	Poss	_	DPP R:	sink 5	Excellent	_	_	_		FG%	%TO 4.9%		%SF 4.8%	40.6%
	23%	1084	_	_	_		_	_	_	_	53.9%		5.1%		
	15.5%	728	-	_	8	Very Good	_	_		_	46.8%	15.4%	9.9%	9.1%	40%
▼ Transition :	11.8%	557	584	1.048	M E	lelow Average	222	211	133	18.7%	54.5%	11.1%	13.5%	11.7%	48.1%

THANKS!

Any questions?