

A close-up photograph of Stephen Curry, a professional basketball player, wearing a white Golden State Warriors jersey with blue and yellow accents. He is shown from the chest up, with his mouth wide open in a shout or yell, and his hands raised to his ears. The background is dark and out of focus, suggesting a basketball arena. A large orange diagonal graphic element is on the right side of the image.

REDEFINING PLAYER POSITION:

How to Maximize NBA Team Construction

“

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.

1. Point Guard
2. Shooting Guard
3. Small Forward
4. Power Forward
5. 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

The screenshot shows the Basketball-Reference.com website. The top navigation bar includes links for Home, Reference, Stats, Football, College, Basketball, Fantasy, Hockey, Soccer, and Blog. A search bar is present with the text "Enter Person, Team, Section, etc." and a "Search" button. Below the navigation bar, there are tabs for Players, Teams, Seasons, Leaders, Scores, Playoffs, Draft, and Play Index. The main content area is divided into three columns. The left column features "Every Player" with a grid of player photos and a "View any Active Player" section. The middle column displays the "2016-17 NBA Standings" with a table showing the Eastern and Western Conference standings. The right column includes "What's Happening" with links to "2016-17 NBA MVP Award Tracker", "Playoff Probabilities Report", "Projected Draft Order", "Trending Player Pages", "Hoops Rumors", and "Sports Reference Blog".

SYNERGY SPORTS TECH

The screenshot shows the Synergy Sports Tech website. The top navigation bar includes links for Home, Player, Team, Game, Digital DNA, Analytics, Other Tools, Speed Test, and Support. A search bar is present with the text "Enter Person, Team, Section, etc." and a "Search" button. The main content area is titled "Multi-Game Team Views/Regular Season - Offensive - Boston Celtics". It features a "Report Contents" section with a table showing the report generated on 01/24/2017 for the 2016-2017 season, Boston Celtics, with 43 games. Below this is a table of "Offensive" statistics, including Points, Rebounds, Assists, Steals, Blocks, and Shooting. The table is divided into "Offensive" and "Defensive" sections. The "Offensive" section includes a table of "Offensive" statistics, and the "Defensive" section includes a table of "Defensive" statistics. The "Offensive" section also includes a table of "Breakdown of Out of Bounds / After Time Out Situations" and a table of "Breakdown of Half Court Offensive Situations by Defense Type". The "Defensive" section includes a table of "Breakdown of Full Court Press Situations".

THANKS!

Any questions?