**NBA Rookie Scouting Report Sentiment Analysis**

Group Name: Analytics Avengers

Group Leader: Tenzin Nargee

Group Members: Kian Putnam, Michael Hijduk

DS4002

2/10/25

**Goal Statement:** Investigate whether the sentiment expressed in 2023 NBA rookie scouting reports is a significant predictor of players’ performance metrics during their rookie season.

**Research Question:** Do the sentiment scores of the 2023 NBA rookie pre-draft scouting reports correlate with the players’ performance metrics in their rookie season?

**Modeling Approach:**

* Scrape text data from various reputable scouting report pages for 2023 NBA Draft.
* Apply the VADER sentiment analysis package in Python to compute sentiment scores ranging from -1 to 1, where scores between -0.05 and 0.05 are considered neutral.
* Use a combination of correlation tests to assess the relationship between sentiment scores and rookie performance metrics.
* Define rookie success using measurable criteria such as rookie team awards, minutes played during the season, and win shares.

**Executive Summary:** This document outlines our data set establishment and analysis plan for examining whether sentiment in 2023 NBA rookie pre-draft scouting reports can predict rookie performance. It details our approach for data scraping, text preprocessing with NLTK, sentiment analysis using VADER, and correlation tests to evaluate relationships between sentiment scores and performance metrics.

**Dataset Establishment Details:**

* Goal: This section explains the key findings you made in the exploratory data analysis phase. And it lays out the parameters of the data set so that someone can understand it.
* Summarize the established data set
* Present data dictionary
* State all the questions you explored and answered about the data set so far
* State current unknowns or questions and where they are resolved or mitigated in your analysis plan
* State any refinement of the goal/research question/model plan that arose
* Show any exploratory plots you created in the establishment of the data set
* Goal, put another way: An “unfamiliar audience” should be able to pick up this document, find your data, and put it to use.

Data Dictionary:

| **Column** | **Description** | **Potential Responses** |
| --- | --- | --- |
| Player Name |  |  |
| Scouting Report |  |  |
| Compound Sentiment Score |  |  |
| Positive Sentiment Score |  |  |
| Negative Sentiment Score |  |  |
| Neutral Sentiment Score |  |  |
|  |  |  |

**Analysis Plan**

* Goal: This section lays out the road map for the next two weeks of work for the team.
* Display a graphic (e.g. a flowchart) demonstrating the analysis plan.
* Use a paragraph to describe each step in the plan. You could include the following things:
  + Preprocessing: How missing values will be handled, any feature engineering to perform, etc.
  + Methodology:
    - If a statistical analysis, specify the significance level, whether this is a one or two sided analysis, the type of test to use, covariates to include, etc.
    - If a predictive modeling analysis, specify data splitting, algorithm selection, cross-validation procedure, etc.
  + Evaluation: metrics (e.g., Mean Absolute Error, R-squared) and the criteria to evaluate your analysis (e.g. p < 0.05; R-squared > 0).
* Include a specific quantifiable goal that you can use as a finish line for your analysis. (Essentially this is your goalpost, it helps you to know when you have achieved your goal and can switch to preparing your presentation.)
* Goal, put another way: If someone joined your group the nanosecond after you submitted this assignment … they could pick it up and hop on board quickly.

**References**

<https://model284.com/my-model-monday-nba-draft-scouting-text-analysis/>

Scouting Report databases

<https://www.nbadraft.net/actual-draft/?year-mock=2023>

<https://insider.espn.com/nba/draft/rounds/_/season/2023>

<https://www.nbascoutinglive.com/2023-scouting-reports/>

<https://www.si.com/nba/draft/newsfeed/nba-draft-prospect-profiles-scouting-report-archives#_wmi8586qa>

Data for analysis

<https://www.basketball-reference.com/leagues/NBA_2024_rookies.html>

<https://www.nba.com/stats/players/traditional?DraftYear=2023&Season=2023-24&dir=A&sort=GP>