# Revolutionizing the Game: Evolving Sports through Data Analysis

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## Introduction

In the past couple years we have seen data analytics and statistics revolutionize various professional fields, of which the sporting world is no exception. As of 2023 the sports analytics market is valued at $3.78 billion projected to reach $22.13 billion by 2030, which is a staggering 28.7% CAGR ([AppInventiv](https://appinventiv.com/blog/data-analytics-in-sports-industry/)). This growth alone will provide jobs across the industry; marketing, stadium experience optimization, scouting, and countless other jobs built on data analytics.

We have seen the sporting world transform from a gut-feeling and “eye test” industry to one fueled by numbers. Decisions made from the front office to the courts or fields have been transformed and magnified by the power of data analytics. Teams can better scout, prepare for opponents, minimize injuries, and maximize revenue for their venues. These transformations effect the players lives, their families, those who work within the industry, and the general consumer of general sporting events.

In this post, we’ll dive into the world of sports analytics, looking at how it has impacted the growth of sports, the careers it has created, and ways you can incorporate it into your own life. Whether you’re a data science student, an aspiring analyst, or just a sports fan looking to understand the numbers behind the game.

## 1. How Sports Have Evolved Due to Analytics

Sports analytics has been instrumental in shaping the strategies of teams and athletes across different sports. One case study of this has been popularized by the book and movie *Moneyball*. The Oakland Athletics’ General Manager and statistician turned undervalued players in terms of the “eye-test” to valuable assets due to their performance in certain aspects of their respective games. These aspects were able to be seen and utilized through data analysis.

Other sports have followed suit. From basketball to soccer to American football we see professional and recreational sports evolving due to insights provided by data analysis. In basketball, we see the ability to compare players deepened by the creation of new metrics. Historically we had few and limited metrics to analyze players like points, rebounds and assists per game. Now we have advanced metrics such as Player Efficiency Rating (PER) and Effective Field Goal Percentage (eFG%) which provide coaches, scouts, and opposing teams’ unique insight into a given player’s capabilities.

The consumer experience has been heightened by data analytics, as seen in NFL games streamed by Amazon Prime. In game stats are shown live as watchers admire peak human performance. We get insight into how difficult different catches and throws really are as a “Catch Probability” is shown live as a quarterback releases the ball from his fingers.

Wearable technology has increased the ability trainers and team doctors have to care for their teams. These technologies allow us to see strengths and weaknesses of a player’s body, metrics used to track their physical activity, and how their body reacts to different stressors. This information greatly aids in reducing injuries, improving recovery times, and increasing athletes’ longevity in their careers.

The utilization of data analysis by teams, and all their members, increase performance in almost every measurable field. We no longer have to rely on instinct alone but can put numbers where our mouths are and have hunches backed up and realities changed by sports analytics.

## 2. Jobs Created by Sports Analytics:

With the increase usage of data by the sporting world, numerous careers have been created within the sports industry. We see jobs such as data scientists and analysts to performance scientists and scouting analysts. The demand for professionals with a grasp for statistics and machine learning has never been higher and has never been more valuable across this industry.

Here are a few key roles within sports analytics:

* **Data Scientist/Analyst:** These individuals are responsible for gathering, cleaning, and analyzing various forms of sporting data to provide insights into team performance, player health, and game strategy. This data can range from game statistics to recorded film.
* **Performance Analyst:** This role involves analyzing player performance, often using wearable devices that collect data on everything from heart rate to acceleration. Performance analysts play a key role in player development and injury prevention.
* **Sports Scouting Analyst**: While the “eye-test” is valuable and needed in scouting, advanced analytics allow scouting analysts to compare recruits on a deeper level. Scouting analysts utilize data to know which leagues or locations provide the highest probability of transitioning a player from amateur to professional levels.
* **Business Insight Analyst:** In this role, the focus is optimizing business operations. This can include ticket pricing strategies, merchandising, or even scheduling to increase profitability while still providing a unique consumer experience.

## 3. How You Can Use Sports Analytics in Your Life

You don’t need to be a data scientist working for a professional sports team to get involved in sports analytics. While there is ample need for data scientists in this field, there are plenty of ways to integrate sports analytics into your daily life, whether you’re a student, amateur athlete, or fan.

* + **Fantasy Sports**: Fantasy leagues are a great, low-risk, way to apply sports analytics knowledge. By understanding advanced metrics and predictive models, you can simulate building a team and outperforming competitors. Fantasy sports gives a recreational environment for you to transform sports analytics into measurable performance.
  + **Personal Fitness**: A more personal application of sports analytics would be in wearable fitness trackers and apps that can help you monitor your own performance. Your various goals and fitness level can be enhanced by basic data analysis. Tracking your heart rate, steps, and intensity can give you valuable insights. Understanding the data behind your performance allows you to fine-tune your unique training to get better results.
  + **Real-World Data Science Projects**: If you’re a data science student or enthusiast, sports analytics provides a rich area for personal projects. Data science projects within sports provide a data scientist with intriguing, real-world data that needs all the TLC of the data science process to become interpretable. Many open-source datasets are available for sports like soccer, basketball, and baseball. You can use these to practice your skills in data cleaning, exploratory data analysis, and predictive modeling.

## Call to Action

Sports analytics isn’t just for professionals; it’s something that anyone get involved in regardless of statistics or programming tool knowledge. Whether you’re interested in a career in the field or just want to enhance your understanding of the games you love, the intersection of sports and data is a wonderful place to appreciate statistics and sports at a new level.

If you’re a data science enthusiast and need real-world data to manipulate, consider taking on a project using sports data. You can practice everything from data visualization to machine learning while working on something you’re passionate about. For sports enthusiasts, start exploring the numbers behind your favorite teams and players, it’ll change the way you watch the game.