Leveraging the Role of AI in Sports: Advancing Strategies and Mitigating Ethical Risks

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

Sports are one of the most watched American traditions, with fans tuning in almost every day of the week to watch their favorite teams play. In 2021, roughly 57.5 million viewers in the United States watched live sports at least once per month, making sports one of the most watched channels in the country (Gillin, 2024). Even though sports are so loved and commercialized, the risk of getting injured is alarming high. In a sport as fast paced as basketball, National Basketball Association (NBA) players are moving at fast speeds in a high contact environment, leading to an increased stress on the player's body. A study researching NBA injuries between 2017 and 2021 found that knee injuries were the most common, with a total of 697 cases (Chao, 2022). Within the National Football Association (NFL), data found that NFL players sustained 187 concussions, 71 ACL tears, and 128 MCL tears in 2021 alone (Held, 2022). These statistics alone show how risky it is for athletes to perform for the enjoyment of others, and fans are not aware of how injuries can truly affect athletes.

The high intensity contact during games, along with the preparation and training beforehand, are opportune conditions for athletes to get injured. That is why it is vital to prioritize player safety and ensure coaches are making calls that protect their players. By analyzing current models and use cases of artificial intelligence (AI) in sports, it can be better understood where the current models succeed and can be improved. In a world where technology is becoming integrated into data analytics, AI can capture real-time data on each player for every play. I argue that the use of AI can help monitor player performance by analyzing performance metrics, prevent injuries through customized training programs to help athletes recover, and help coaches make more informed game decisions by analyzing game and opponent data. Coaches can benefit from this analysis to monitor player health and predict which players are susceptible

to being injured. However, others argue that ethical issues, such as the confidentially of player data and privacy concerns over the sharing of this sensitive data, are prominent and overshadow the positives of AI. Along with privacy concerns, models trained using historical data can lead to inaccurate results and coaches making poor decisions, as the insights provided by the model can be biased to favor a certain race or gender. I believe it is important to address these concerns and offer solutions as player consent and confidentiality should be prioritized. Players need to better understand how their data is being used by AI, have the chance to opt-out of participating, and be made aware of the privacy risks surrounding the use of their data. Offering solutions to these ethical concerns is vital because AI has the potential to help address problems like CTE and ACL injuries by acting as a preventative measure and providing coaches with better insights to protect their players.

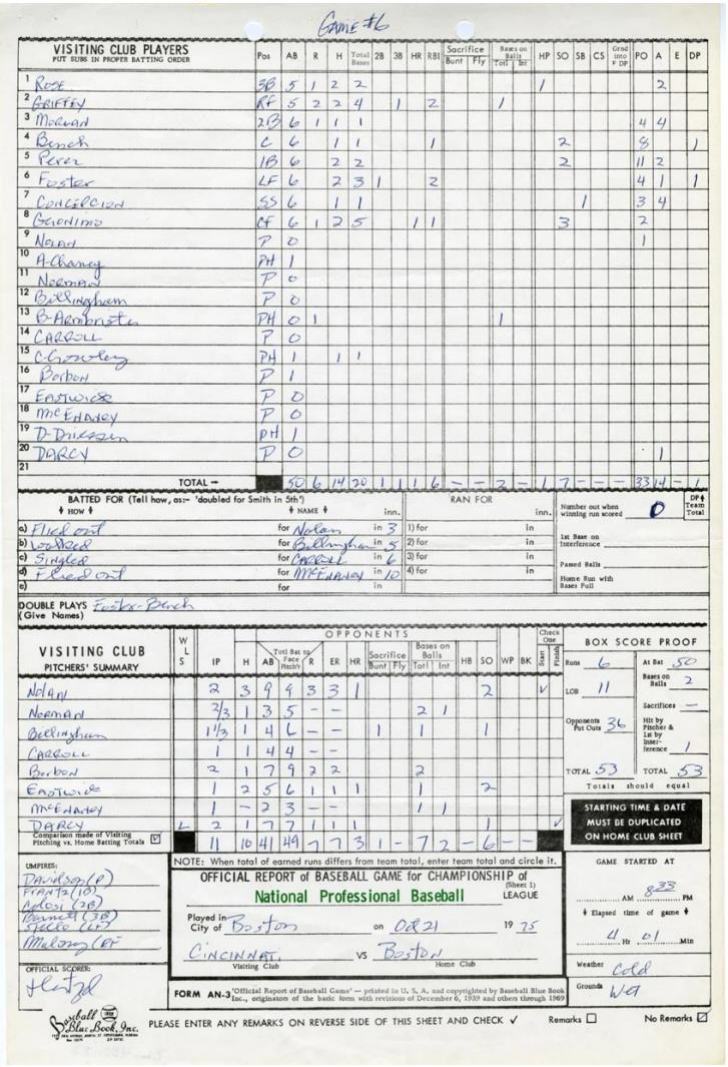
Background and Context

Sports analytics is the process of using sports-related data to find meaningful patterns, such as correlations between variables that lead to better player health and trends for improving player performance, and communicating those patterns to help make decisions (Stolbunov, 2014). From this perspective, anything from performance metrics to weather information can be used by coaches to maximize player performance without injuring them. The first sports analysis roughly began in the 19th century with baseball. More specifically, in 1845, the first baseball box score, which at the time only recorded batters' runs and outs, was posted in the *New York Morning News* for other enjoyers of the sport to read (Syracuse University, n.d.). Basic statistics, such as the number of hits and pitches, were collected and tracked with old fashioned pencil and paper, as seen in Image 1. These paper statistics captured basic analytics that were then turned into scouting reports for coaches to make decisions about their players and their overall team

performance (Stolbunov, 2024). Sports analytics in baseball helped pave the way for analysts to leverage the technology available to create meaningful analytics to be shared with teams and players.

Image 1

Official Scoresheet from Game 6 of the 1975 World Series



Note: This image is preserved in the National Baseball Hall of Fame Library Archives. From Rothenberg, M. (n.d.). *Proof On Paper*. National Baseball Hall of Fame (https://baseballhall.org/discover/proof-on-paper).

Since the 19th century, the field of sports analytics has grown exponentially and become more advanced. Improvements in computational power, memory, and AI knowledge have paved the way for tools like machine learning and AI to come into play. With such improvements, advanced technology can perform more computations, such as predicting trends of player performance or calculating the injury risk for a player, than what elementary pen-and-paper scoresheets could. This progression of modern sports analytics from paper databases to online databases has allowed data to be stored in the cloud and shared across teams. However, the field of sport analytics is only growing and future iterations can be built upon existing AI models to improve how coaches utilize advanced technology to protect their athletes.

AI Usage in the NFL

AI is becoming more integrated into sports analytics and various teams within the NFL are utilizing this advanced technology to provide meaningful insights about player health and performance. League-wide, NFL's Next Gen Stats, powered by Amazon Web Services (AWS), provides teams with real-time analytics and insights. The NFL's investment in AI provides each team and their coaching staff with advanced tools to aid in training and play formations (Amazon Web Services, 2019). This analysis helps identify plays and body positions that most likely lead to injuries, allowing coaches to make smarter play calls that prevent athletes from being injured.

Even though AI is being used currently in the NFL to aid coaches and help with player performance, the technology can be further improved to reduce the time spent manually reviewing game data. Researchers at Brigham Young University tackled this labor-intensive and time-consuming process of analyzing game footage manually. Their solution was an AI algorithm that automated player detection and formation analysis. As a result, the system resulted in over "90% accuracy in player detection and labeling and 85% accuracy in

determining offensive formations" (Estes, 2024). This use of AI leads to a significant reduction in film review, allowing coaches to focus on developing strategies for the game rather than spending time analyzing film. Along with using AI to monitor player statistics and analyze game data, AI algorithms are changing how coaches and teams evaluate new talent and make draft decisions (West, 2021). These AI models can analyze player performance and college statistics to help coaches predict an athlete's potential success at the professional level, allowing teams to identify the best picks to build the best possible teams.

AI is also being harnessed to develop customized training programs for athletes. Through real-time monitoring, AI can help track progress and offer targeted feedback to address each player's specific needs. This technology also has the potential to enhance real-time decision-making, such as improving play-calling and the drafting of offensive and defensive formations, especially in high-stakes environments where coaches need to make quick decisions to ensure player safety. NFL's Next Gen Stats revealed that the San Francisco 49ers utilize a condensed formation, which is a formation that brings their players closer together at the line of scrimmage, more than any other team. During the 2023-2024 season, roughly 63.3% of their plays were executed in this style (McDaniel, 2024). As a result of using predictive analysis to determine the number of instances this play has been executed, the 49ers coaching staff can better understand the success (or failure) of this play and decide how often to incorporate this formation into their game calls. By utilizing AI, coaches can dynamically respond to changing conditions, allowing them to optimize performance (Brady et al., 2022). With this technology, coaches can analyze the results of the personalized training and real-time data to make more informed decisions that contribute to team success.

AI Usage in the NBA

The future of the NBA is also being transformed with the use of AI. AI is reshaping how basketball is being played and analyzed by providing data-driven insights that allow coaches to make better strategies and monitor player health. Since 2010, the NBA has utilized advanced statistics to optimize player performance and provide insights to coaches that enhance strategy and player health (Gibson, 2024). Similarly to the NFL, the NBA utilizes AI to analyze player performance in real-time by tracking biomechanics and player movement, such as dribbling and passing. AI is also being used to predict injury risks and provide recovery plans for players in hopes of reducing the chance of re-injury. Additionally, AI provides coaches with real-time insights, allowing them to adjust their game calls and decisions during games (Gibson, 2024). With this integration of AI within the NBA, coaches and players can make informed decisions that optimize player performance, provide preventative measures to prevent injuries, and create smarter game plans.

However, AI also raises privacy and ethical concerns due to the nature of player data being collected. Usually, it is not the athletes themselves who monitor and analyze their data, but rather sports organizations and their teams. Some sports organizations use this data in the interests of the player and safeguard it, while others may use it for making game decisions, determining players' weaknesses, or even predicting their performance potential without the consent of the player (Rosenthal & Hintermann, 2024). By adopting this new technology, it is critical to be aware of the added responsibility of ensuring the data processed by AI is safeguarded from misuse by bad attackers, like rival teams and players, which is why it is vital that athletes should be aware of how their data is being shared and accessed within their organization.

Methods

Understanding the field of sports analytics can provide a framework for learning why the use of AI is beneficial to providing numerous advantages to coaches. With how much data is produced by each team and each player, advanced technology is important to allow coaches to receive better insights into team performance more efficiently and effectively. To better understand the context of AI in sports, the analysis was largely focused from the 2000s to 2025 with case studies drawn from examples in the NFL and the NBA.

To further understand how AI is being used to revolutionize the field of sports analytics, I collected quantitative data and qualitative data from various sources. First, I performed a content analysis by analyzing academic journals and news articles. I collected qualitative data from academic journals that highlight the advantages and disadvantages of utilizing AI in sports. I also collected quantitative data from news articles that explained how AI has been improving game calling and helping teams improve their performance. I then analyzed news articles covering use cases of how specific NFL and NBA teams were utilizing AI to determine how it is being used and what policies are put in place regarding its usage. Most of these news articles provided numeric statistics that support claims of how AI is beneficial, and they provided more in-depth case studies of how different teams were utilizing AI. Then, I conducted a discourse analysis of secondary materials, such as news articles posted by sports reporters and posts found on social media from teams, to explore how coaches felt about using AI to make data-driven decisions. I also monitored social media platforms, such as Instagram and X, for posts and videos about how AI was being used by different teams, such as the Washington Commanders and the Golden State Warriors. These social media posts provided evidence of how AI has been helpful in player development, especially for young athletes coming out of college. Throughout my

analysis, I emphasize the thoughts of coaches and athletes to determine if coaches believe the benefits of AI outweigh its limitations. I will use these findings as supporting evidence for why AI tools are beneficial and why they should be improved to reduce ethical concerns.

Actor-Network theory (ANT) provides a useful framework for understanding how technologies like AI evolve – not as independent innovations, but as products of complex networks composed of human and non-human actors (Latour, 1992). Rather than viewing technology as progressing in a socially predetermined way, ANT suggests that the meaning and influence of technology emerge through the dynamic relationships between actors. In the context of sports analytics, AI is not just a tool used by teams, but rather a participant in a broader network that includes coaches, players, and predictive models. As AI continues to shape decision-making in sports, it is simultaneously being shaped by the interactions and interests of these different actors. For instance, in leagues like the NFL and NBA, AI systems are not only used to enhance player performance but also to address critical concerns such as injury prevention and player safety, including the growing threat of CTE. Thus, Actor-Network theory helps us see AI in sports analytics as a socially embedded, co-constructed system shaped by relationships between actors.

Positive Use Cases of AI

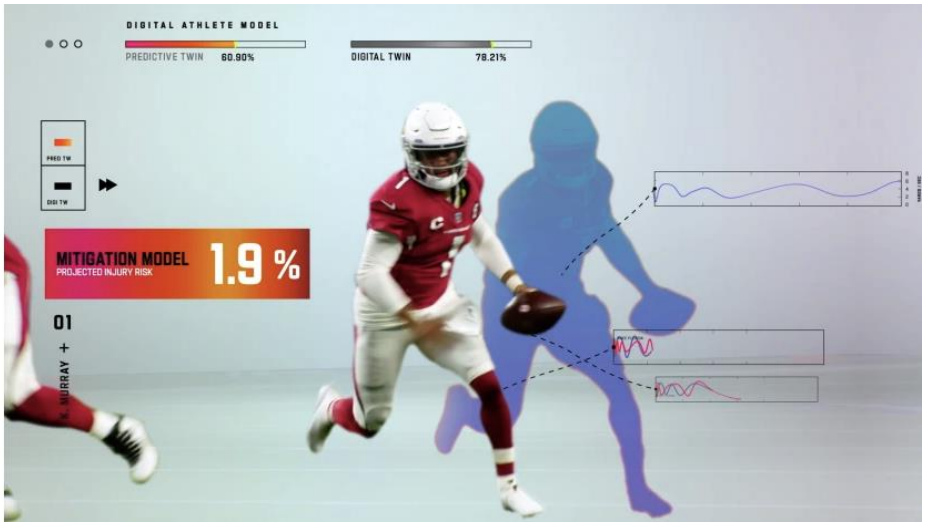
AI Usage in the NFL

The NFL is leveraging AI as a crucial tool to enhance player health and safety, prevent injuries, and analyze player performance. Dating back to 2017, the NFL partnered with AWS to create the Digital Athlete, a core component of the NFL's commitment to player health and safety. The Digital Athlete is a virtual representation of an NFL player that can be used by coaches to predict and prevent player injury. One NFL team, the Seattle Seahawks, are currently

using AI models to predict which players are at potential risk for being injured (Peranzo, 2024). This technology relies on AI algorithms to run simulations of in-game scenarios to better understand a player's health and the number of injuries they might face. As seen in Image 2, AI can be used to display the performance metrics and projected injury risk for every athlete, providing coaches with data-driven insights.

Image 2

Visual Representation of the Digital Athlete Dashboard



Note: This dashboard view displays performance statistics such as projected injury risk (seen in the percentage to the left in white), the digital twin of the athlete (shown as the blue shadow of the athlete), and other personal information (seen on the bottom left). From, *The Digital Athlete and How it's Revolutionizing Player Health & Safety,* 2022, NFL Player Health and Safety (https://www.nfl.com/playerhealthandsafety/equipment-and-innovation/aws-partnership/digital-athlete-spot).

NFL's Next Gen Stats, also provided by AWS, provides player and ball tracking for every player and play on the field. Sensors embedded in uniforms and helmets track player data to help create simulations of in-game action for coaches to review later. Models, such as the AWS AI-Powered Tackle Probability Model, break down every tackle in real-time and help

coaches identify their most dependable tacklers, allowing them to create more efficient game calls. This use of AI provides each team with data to analyze trends and player performance. More than 200 data points are created on every play of every game, and this raw data is then used to produce automated player reports, calculate performance metrics, and output predictive statistics (*NFL Next Gen Stats*, n.d.). Coaches have the chance to understand how everything from weather to fatigue affects game performance and injury risks. Through this use of AI, the NFL has provided coaching staff with the technology necessary to better understand player performance trends and injury risk factors.

The NFL has also made this technology accessible to each team and improved player performance by prioritizing player safety. This system captures real-time data, performs millions of simulations to identify injury risks, and creates personalized training and recovery programs for each player (Trigilio, 2024). As a result, the NFL has set an equal stage for each of the 32 teams to have access to AI technology. Teams like the Philadelphia Eagles and San Francisco 49ers utilize AI to analyze large amounts of game data to better understand opponents' strategies and predict future plays (Sahota, 2024). This type of formation keeps the defense guessing and makes them vulnerable to breaking routes. On the other hand, individual teams are taking their own innovative approaches to prioritize player safety. The Dallas Cowboys faced the challenge of having real-time game data on player performance and injury risk to better monitor their players. To combat this, they developed an AI-powered wearable technology program that collects real-time performance data for each player, such as their speed and heart rate (Estes, 2024). Using the technology the league has provided, the Dallas Cowboys were able to improve their analysis of player fatigue and monitor injury risk, highlighting how important AI can be to help teams efficiently and quickly analyze data so coaches can identify which players are at a

higher injury risk. Since these algorithmic models process large amounts of data and help simulate different game scenarios, coaches can be better equipped to make tactical decisions. By analyzing the results of the Digital Athlete for each player, the coaching staff for each team can use this information to sit out athletes who are at risk of being injured and create game calls that highlight the strengths of each player while ensuring their safety on the field.

While individual teams are utilizing AI to enhance player performance, individual athletes are also revolutionizing their decision-making on the field by incorporating AI-driven insights to improve performance. One effective example of an athlete who has been transforming quarterback decision-making is Jayden Daniels. This rookie quarterback for the Washington Commanders has elevated his on-field abilities by using AI to help him train, transforming his approach to decision-making to analyze opponent defense quickly to get the ball out safely. Daniels has been using this training approach since his days at the Louisiana State University (LSU), which speaks to how beneficial AI tools are in a young athlete's development, so they can be ready to play at the professional level (PromotesPrimesX, 2023). Initially designed for soccer, a VR simulator, developed by Cognilize, was customized for Daniels to use for American football. This simulator operates at 1.75x speed and pushes Daniels to process information faster than he would on the field, allowing him to react faster to defensive situations and make smarter decisions while under pressure. This simulator has an AI-driven feedback system that analyzes Daniels' performance and monitors metrics like reaction time, decision accuracy, and cognitive fatigue to adapt future training sessions to address areas for improvement.

Using this AI approach to training provides many benefits that can enhance Daniels' performance. He can train at higher intensities to adapt to faster-paced situations and be more comfortable under pressure. Daniels' metrics, such as fatigue levels and heart rate, are monitored

to ensure his training intensity is optimized without causing burnout and overtraining. Over the course of the season, he has broken rookie records and been a consistent leader in rushing and passing yards among other quarterbacks. More impressively, Daniels reduced his average decision-making time by 15% over the season and his completion rate under pressure improved by 12% (*Jayden Daniels*, 2025). The integration of AI for training could be one reason for improvement in his decision-making, reflected in his composure and late-game performance metrics which revealed fewer errors. Additionally, Kliff Kingsbury, offensive coordinator for the Commanders, stated how helpful AI has been to the development of Daniels, as he can "hang in the pocket and nail the reads" that allow him to operate well under pressure on the field (National Football League (NFL), 2025). By using AI to monitor Daniels' performance and improve his game, the Commanders' coaching staff can create better game plays that will highlight Daniels' strengths and allow him to perform at his best. Daniels' use of AI provides a compelling example of how technology can enhance player performance and training. This example offers valuable insights that other teams can learn from, demonstrating how coaches and players can better understand the advantages of AI and use it to optimize team performance.

From the perspective of the Actor-Network theory, the integration of AI in the NFL is an evolving, dynamic network of both human and non-human actors – such as AI systems, coaches, players, and technology analysts (Latour, 1992). Elements such as tracking devices, sensors, predictive models, and coaching strategies all act as active participants in this network. For instance, the data from embedded sensors becomes a form of authority that influences coaching decisions in the NFL, while AI simulations help redefine how player health is monitored and managed. Rather than acting independently, these technologies gain meaning and impact through their interactions within the broader socio-technical system of humans and non-human actors.

AI Usage in the NBA

In addition to the NFL's commitment to AI and predictive analysis, the NBA has a similar way of utilizing AI to monitor player performance and improve game calls. The NBA recently celebrated 25 years of Tech Summits in February 2025, where this event has become an essential platform for NBA players, owners, and analysts to exchange ideas on the evolving landscape of sports and technology (DW Team, 2025). The NBA has been integrating AI into tasks, such as generating highlights in real-time, assisting referees with controversial plays, translating play-by-play calls into multiple languages, and powering the NBA app (Marot and Reynolds, 2024). In addition to these use cases, AI algorithms play an important role in player performance analysis, injury prevention, health monitoring, scouting and player recruitment, and game strategy optimization. Coaches can utilize this technology to help understand strengths and weaknesses for each player based on performance metrics such as shot accuracy, pass quality, and rebound efficiency. The Toronto Raptors utilize an AI system that analyzes player's shooting forms and patterns, providing feedback that allows players to enhance their shooting techniques (Team DigitalDefynd, 2025). Along with detailed analysis of player performance, AI can revolutionize how injuries can be better prevented through health monitoring. AI algorithms can process real-time data, gathered from each player, to pinpoint specific physiological indicators, like heart rate and muscle strain, that may put an athlete at risk of injury. For instance, the Golden State Warriors utilize AI technology to create individual training and recovery plans for each player, reducing the likelihood of injuries (Team DigitalDefynd, 2025). With the use of such technology, coaches can ensure that their athletes stay healthy throughout the long and tiresome NBA season.

AI-driven insights can also be helpful when coaches are creating game strategies and making game-time decisions. This use of AI is seen with the Dallas Mavericks, as they use AI to analyze opponent defensive formations and then recommend offensive plays to combat the defense (Team DigitalDefynd, 2025). AI can offer a second opinion and help coaches to make informed decisions during games, increasing the team's chances of winning. Lastly, AI can transform how coaches scout and recruit talent by analyzing datasets of recruits across the globe. The San Antonio Spurs is one example of an NBA team that utilizes this advanced technology to make strategic draft picks (Team DigitalDefynd, 2025). With this advanced technology, AI can be trained to assess player performance, physical attributes, and skill sets to forecast predictions of how well each athlete may perform in the professional league.

One specific use case of AI in the NBA is seen with the Golden State Warriors improving their player performance by using physical AI robots to help their players train. These advanced robots are designed to assist with player development and team operations such as providing real-time feedback during practice, simulating defensive scenarios and personalizing trainings based on player performance data. For instance, these AI robots can help players like Steph Curry master their 3-point throws by acting as "opponent players" and moving around the court as the player practices (The Cold Wire, 2025). These robots can help with rebounding the balls, guarding the players, and offering feedback in real-time. These robots were designed after working specifically with coaches and other players to be able to provide specific, real-time feedback, and track player movements faster than any coach can. As the NBA stated, collaborating closely with players and coaches in the development of these robots were important to "bridging engineering with human performance" (McFadden, 2025). With this use of AI in the NBA, player performance can be improved and monitored during practices and

coaches can utilize the insights provided to create game strategies. Actor-Network Theory helps us understand that AI's role in the NBA is constructed by a diverse network of human and non-human actors – including athletes, coaching staff, analysts, and AI systems. Along with outputting data, AI alters how coaching strategies are formed, how player performance is monitored, and how player health is managed. The adoption of these technologies is shaped by social, organizational, and technical factors, all of which influence how the outputs are interpreted and applied (Latour, 1992). This theory highlights that AI in the NBA is not a fixed innovation, but a technology shaped by the interactions and interests of those within the sports ecosystem.

These extensive use cases of AI emphasize how predictive analysis can evolve the landscape of basketball and football, allowing coaches to be provided with better insights and make smarter decisions when prioritizing their players and their health.

Ethical Concerns of AI

While AI offers significant benefits in sports analytics, it also raises privacy and ethical issues due to the sensitive nature of player data and accuracy issues in algorithm development. Coaches can make poor decisions about players or the game strategy if the statistics provided by the AI models are not accurate. Models are trained using historical data, which could favor certain players over others based on race and gender, leading to bias in technology (Dubber et al., 2020). Changes in the situation of individual athletes, such as injuries or personal circumstances, also may not be properly accounted for (Sperlich et al., 2023). To address this issue, it is vital to continuously update AI models and to incorporate mechanisms that can identify trends in data and individual variations (such as change in an athlete's performance). The lack of transparency in AI models can also raise concerns among coaches and

athletes. Coaches and players can utilize AI to delegate game decisions and make strategic game-calls in an effort to displace the labor they once used to do (Latour, 1992). I believe this idea of delegation and displacement can be harmful because even though AI can provide useful insights, it should not replace human judgement and decision making. Some AI systems, such as artificial neural networks, can be seen as "black boxes", which perform data analysis that is counterintuitive to human brains (Sperlich et al., 2023). A heavy reliance on AI can reduce the human judgement and decision-making that currently exists. Thus, coaches should not use AI to make the final decision but rather rely on it along with their own evaluations and intuitions.

Privacy concerns also emerge from the use of collection of personal data, especially health sensitive data like their heart rate and injury histories, to evaluate their performance. Sports organizations should share athlete data in an ethical manner, such that athletes are aware of how their data is being used and where it is being shared. Since the nature of athlete data is sensitive personal information, athletes may feel more inclined to protect their data and prevent their data being passed around their organization. For instance, since 2015, every athlete in the NFL has Radio Frequency Identification (RFID) chips embedded in shoulder pads to measure speed, distance traveled, acceleration, and deceleration. At first, that data stayed within each individual team, allowing coaches and players to devise game-calls around the best offensive and defensive patterns. However, that decision was later changed and now data on each player in a game is shared with every team (McMahan, 2018). This allows the opposing teams to create game calls around their opponent's movement. Changes should be made to this open sharing of data, so athletes are aware of what teams are viewing their data and what type of information can be tied back to an athlete. I believe that players should have the opportunity to opt-in/out of allowing their data to be accessed by AI models. This freedom of choice allows players to make

the decision themselves and to be more aware of how their data is being used. Conversely, due to the complicated nature of player surveillance, it might be impractical and difficult for athletes to have time to go through privacy policies, ask clarifying questions, and make a smart, ethical decision on how their data should be shared and tracked. Another solution could be putting the power into the players hands and allowing them to collectively design a policy for how their data can be collected, used, shared, and then eventually destroyed. I argue that allowing players to delegate and make these decisions for themselves can address the privacy concerns that exist, instead of having other individuals make decisions for the athletes.

Additionally, if this data is accessed by third parties, such as advertisers or insurers, then the data could be misused. For instance, an athlete might be denied insurance coverage because AI flagged them as a high-risk athlete that might be prone to injuries (Trigilio, 2024). The lack of clear consent and strict guidelines might result in athletes not fully grasping how their data is being used or shared. For instance, critics argue that changes should be made to improve the NFL's Digital Athlete program. Since this program analyzes and collects sensitive data, the NFL should make sure players are aware of what type of health data the model is collecting through equipment sensors (Furst, 2024). This is an important issue to address as it will promote transparency between the NFL and its players, increasing support for the Digital Athlete program, and giving players the opportunity to better understand the program to allow them to opt-out if they choose. Due to the current lack of transparency, it is vital to implement a robust framework for AI models that follow privacy guidelines. It is also critical to inform athletes how their data is being used and give them the option to withdraw their data from the model's database. Another solution to privacy concerns is anonymizing the data by removing important identifiers, such as name or birthday, and giving each athlete a unique identifier instead. The

match of unique identifiers to the actual athlete should only be accessible by the senior executives of the team, such as the coaches and team managers, to prevent data misuse.

Conclusion

In the growing age of technology where AI is revolutionizing sports, especially within in the NFL and NBA, the use of AI is beneficial for coaches to stay up-to-date on the latest technology in order to better monitor player health and make informed game-time decisions. I believe that AI's growing influence in the field of sports raises the question on how AI can be applied ethically and responsibly to create a fairer and safer environment in sports - a space that unites millions together and should protect the rights of its players. As AI becomes increasingly integrated into sports, it is critical to ensure it is being used to enhance rather than compromise athletes' performance, rights, and well-being, making it essential to explore the ethical implications of AI's role in sports analytics. AI is a rapidly growing tool that can transform sports, enabling coaches to make better data-driven decisions to boost player performance.

I argue that a securely designed AI model should be accurate, precise, non-discriminatory, and accessible to all teams and sports organizations to ensure fair play. Predictive models should safeguard athlete privacy, provide coaches with valuable predictive insights, and contribute to a more ethical use of AI in sports. By developing models that take ethics and privacy into account, an environment that emphasizes the values of fair play and respects the rights of athletes can be created, ultimately enhancing the game for players and fans alike.

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