Predicting match outcome with AI

Using different ai machine learning methods, giving it data from former football matches to predict weither a game will result in a win, draw or loss for a team.

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Technology Impact Cycle Tool
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Impact on society
What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?
The problem is predicting football match outcomes (win, lose, or draw) using AI. Football results are influenced by various factors like team performance, player conditions, and match context, making predictions challenging. Solving this can help coaches make better strategic decisions and allow fans to engage more deeply with the game.

Are you sure that this technology is solving the RIGHT problem?
Yes, this technology is solving the right problem because football match results are ultimately determined by the goals scored. By predicting the number of goals, the model focuses on the most critical factor of the game, ensuring accurate and meaningful predictions of match outcomes.

How is this technology going to solve the problem?
This technology will solve the problem by analyzing key factors that influence football matches and predicting the number of goals each team will score. Since the outcome is determined by the goals scored, accurately predicting them will directly reveal the match result (win, lose, or draw).

What negative effects do you expect from this technology?
A potential negative effect is that people might treat the predictions as guaranteed outcomes, leading to frustration or blame on the technology when it fails to predict correctly. This could harm trust in AI systems and overshadow the understanding that predictions are probabilities, not certainties.

In what way is this technology contributing to a world you want to live in?
This technology helps make football more exciting and accessible by giving people better tools to understand and predict games. It uses data in a smart way to bring fans closer to the sport and show how AI can be useful in everyday interests like football.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.
- Show Probabilities Clearly: Make it obvious that predictions are not

guarantees but chances, so people dont see them as definite.
- Use Better Data: Work on improving the data to make predictions more fair and accurate for all teams.
- Make It Transparent: Show how the predictions are made so people can trust and understand them.

Hateful and criminal actors
What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?
The technology could be misused to exploit gambling addiction by creating an over-reliance on predictions. As people begin to trust AI-driven outcomes, they might become more dependent on the technology, potentially leading to compulsive betting behaviors. This could result in individuals making high-risk bets based solely on predictions, which may not be accurate, causing financial harm and deepening addictive behaviors.

Can fakers, thieves or scammers abuse the technology?
Scammers could misuse the technology to trick people, such as by creating fake "guaranteed" predictions to sell or lure users into fraudulent betting schemes. This could exploit people's trust in AI for financial gain.

Can the technology be used against certain (ethnic) groups or (social) classes?
The technology could unintentionally discriminate if the data used is biased, such as favoring teams or players from wealthier countries or more popular leagues. This could lead to unfair predictions or analysis that overlooks less prominent teams or leagues, reinforcing existing inequalities in football.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.
Bad actors could use this technology to increase societal divides by embedding biases into predictions, such as favoring wealthy teams or leagues over those from less affluent regions.

How could bad actors use this technology to subvert or attack the truth?
Bad actors could use this technology to spread misinformation by manipulating predictions or results to fit false narratives, such as claiming bias in football systems or unfair advantages for certain teams.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.
- Bias Mitigation: Regularly audit the data and model to ensure its free from

biases related to gender, race, or class.

- Transparency: Make the prediction process clear, showing how results are generated to build trust and reduce manipulation opportunities.

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Privacy

Are you considering the privacy & personal data of the users of your technology?

This category is not applicable for this technology.

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Human values
How does the technology affect your human values?

This category is only partial filled.

How is the identity of the (intended) users affected by the technology?
The technology could make football more engaging for users by providing data-driven predictions, helping fans and coaches understand the game better and sparking more discussions. It may create new ways for fans and coaches to interact with football through AI insights. However, if people rely too much on these predictions, it might reduce their own judgment or critical thinking.

How does the technology influence the users' autonomy?
This question has not been answered yet.

What is the effect of the technology on the health and/or well-being of users?
This question has not been answered yet.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.
This question has not been answered yet.

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Stakeholders
Have you considered all stakeholders?

This category is only partial filled.

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder
Football fans

How is this stakeholder affected?
They want to know how likely it is a certain team will, weither its for genuine interest, betting with friends or analyzing games.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
Yes

Name of the stakeholder
Football coaches

How is this stakeholder affected?
they can approach the game differently based on the prediction and analyse the opponent with this.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
Yes

Name of the stakeholder
Football players

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Football teams

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Analysts

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Betting companies

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?
-

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

To make the technology more user-friendly and accessible for everyone, its important to ensure that the information it provides is clear, transparent, and easy to understand. This helps prevent misuse or manipulation. By focusing on the needs of all stakeholders, the technology can be designed to provide fair, unbiased predictions while promoting responsible and ethical use.

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Data
Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?
Yes, there is a potential built-in historical bias in this technology due to the dataset being based on two seasons of Premier League data, where relegated teams have fewer statistics. This could lead to the model favoring teams with more data, as they are overrepresented. To reduce this bias, we need to ensure that relegated teams are not ignored or underweighted.

How does the technology organize continuous improvement when it comes to the use of data?

The technology acknowledges that data changes over time and addresses this by being transparent about the time frame and scope of the data it uses. While it doesnt continuously update, feedback can be collected manually to improve future versions of the model.

How will the technology keep the insights that it identifies with data sustainable over time?
The technology keeps its insights sustainable over time by clearly defining the scope of its data and predictions, ensuring they remain relevant within that context. Regular reviews and updates to the model, based on new feedback or data, can help maintain its accuracy and usefulness in the future.

In what way do you consider the fact that data is collected from the users?

The technology does not profit from the use or sale of user data, as it focuses on publicly available or lawful data sources rather than personal user data. Users are treated fairly because their privacy is respected, and they are not required to share personal information for the technology to function. This ensures ethical and responsible use of data.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.
-Expand Data Sources: Include data from more leagues and seasons to make predictions more comprehensive and reliable.
-Regular Data Reviews: Periodically review and update the dataset to ensure it remains relevant and accurate.

-Transparency: Clearly communicate the scope and limitations of the data to set realistic expectations for users.

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Inclusivity
Is your technology fair for everyone?

This category is only partial filled.

Will everyone have access to the technology?
This question has not been answered yet.

Does this technology have a built-in bias?
No i could not find any built-in bias in this technology. All the data is subjective and could not be influenced by a persons bias or any other influence.

Does this technology make automatic decisions and how do you account for them?
This question has not been answered yet.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?
This question has not been answered yet.

Does the team that creates the technology represent the diversity of our society?
This question has not been answered yet.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.
This question has not been answered yet.

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Transparency

Are you transparent about how your technology works?

This category is only partial filled.

Is it explained to the users/stakeholders how the technology works and how the business model works?

The technology is designed to ensure users and stakeholders clearly understand how it works and how the business model operates. The explanation of how the technology makes predictions and the factors influencing its behavior are easily accessible. The goals of the system and its purpose are clearly outlined, and transparency is maintained regarding the business model, so users can fully comprehend how the technology functions and what they can expect from it.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

This question has not been answered yet.

Is it possible to file a complaint or ask questions/get answers about this technology?

This question has not been answered yet.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

This question has not been answered yet.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

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Sustainability

Is your technology environmentally sustainable?

This category is only partial filled.

In what way is the direct and indirect energy use of this technology taken into account?

In this technology, the direct energy use is associated with the energy consumed by servers running the predictive models and processing match data. The indirect energy use arises from data transfer and storage, which can be reduced by utilizing energy-efficient data centers and ensuring that the data is processed and stored in an environmentally friendly way.

Do you think alternative materials could have been considered in the technology?

This question has not been answered yet.

Do you think the lifespan of the technology is realistic?

This question has not been answered yet.

What is the hidden impact of the technology in the whole chain?

This question has not been answered yet.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

This question has not been answered yet.

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Future

Did you consider future impact?

This category is only partial filled.

What could possibly happen with this technology in the future?
In the future, this technology could make more accurate predictions by using real-time data, like player performance or game conditions. It could extend beyond football, applying AI to other sports. The technology could become a key tool for coaches, analysts, and fans, shaping strategies, tactics, and engagement. As AI improves, it may work with augmented reality, offering immersive experiences during games and change how people experience sports.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.
This question has not been answered yet.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.
This question has not been answered yet.

Would you like to live in one of this scenario's? Why? Why not?
This question has not been answered yet.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?
This question has not been answered yet.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.
This question has not been answered yet.