In the age of technological innovation, artificial intelligence (AI) is having a significant impact on various areas of our lives, also in sports, AI is having an ever-increasing role these days. While traditional coaching methods offer undeniable advantages, the integration of AI tools in sports has ushered in a new era of coaching. These innovations allow coaches to analyse and optimise player performance in previously unknown ways.

From performance analysis to strategic planning, AI tools offer a wealth of opportunities to revolutionise training and get the best out of every athlete. In this blog post, we will take an in-depth look at the role of AI tools in sports (coaching) and explore their impact on the future of sport.

If you would like to find out more about our latest developments in the field of AI tools, you can find more information in the 'Outlook' section.

The evolution of sports coaching through Ai Tools

New technologies in sport are generating large, high-dimensional and complex masses of data. The amount of data and individual pieces of information that a person can interpret and correlate for an all-encompassing view is increasingly being exceeded. (Dindorf, 2023)

The introduction of AI tools offers the opportunity to take athletes' training and performance to a new level, but what is AI?

"Artificial intelligence is a branch of computer science that focuses on developing systems that can perform tasks that mimic human intelligence." This includes learning from experience, understanding natural language, analysing video, recognising patterns, solving problems and making decisions. (Cossich, 2023)

AI tools can collect and analyse large amounts of data and recognise patterns in order to optimise training. Based on the data collected, it is possible to create personalised training plans tailored to the specific needs and abilities of each athlete. During training, AI tools can provide real-time feedback and also help with tactical analysis of matches and competitions. They have the option of using data from past games to identify patterns, uncover weak points and optimise game strategies.

"We're able to see ways athletes move and detect things not possible with just the human eye," – Jonathan Lee, chief product officer at sports tech company ai.io

Overall, AI tools have the potential to revolutionise sports coaching by enabling comprehensive analysis and adaptation to maximise athletes' performance while promoting their health and well-being.

AI technologies in game strategy and tactics

In the field of match strategy and tactics, there are already several applications of AI tools that offer a range of benefits. As previously mentioned, AI is paving an innovative path to success in sports for everyone from athletes to broadcasters, with real-time match statistics for players and fans, predictions of match tactics to allow players to choose the right strategy, and even notifications to the player in the event of a potential performance degradation or injury. (Nadikattu, 2020)

In terms of data analysis and scouting, AI technologies can analyse large amounts of data from past matches, player statistics and other sources to identify patterns and gain insights into opponents' game strategy. This allows teams to adapt their tactics and better prepare for upcoming matches.

AI tools make it possible to optimise match strategy by simulating different scenarios and assessing the chances of success. This allows teams to maximise their strengths and minimise weaknesses to gain an advantage in the competition.

"In 10-15 years, it will not necassarily be a football specialist who will be a manager for a club. It will be management specialists rather than football specialists, because the football decisions will be made by technology." – Arséne Wenger, Manager of Arsenal Football Club

During the game, AI technologies can collect and analyse real-time data to suggest tactical adjustments and coaches can use this information to adapt their strategy and react to unforeseen developments. AI tools are not only used to analyse opponents, but also to analyse the performance of individual players in order to identify their strengths and weaknesses and optimise their potential.

AI tools will also improve communication between coaches and players by providing real-time feedback and guidance. This is particularly crucial when players with different cultural backgrounds and languages come together, as clear communication between players and with the coach is essential for sporting success. The use of translation tools should help to avoid misunderstandings and promote effective co-operation. You can find out more about translation tools in the Outlook section. We are also currently working on an innovative tool

that could revolutionise the world of sport.

AI applications have the potential to improve traditional methods of analysing sports performance. They have made video analysis faster, more accurate and more comprehensive by replacing time-consuming and potentially biased manual reviews. Machine learning enables computers to recognise and track players and objects, analyse movements and extract real-time information. These techniques provide a detailed understanding of player movements, team formations and tactics, significantly enriching strategic planning. (Cossich, 2023)

Sports teams should not only adopt a specific AI technology, but have access to a wide range of AI tools. These help to gain important insights and act on them – be it for fan engagement, talent identification, match preparation or real-time support during the game (Nadikattu, 2020).

Fan engagement and spectator experience thanks to AI

Coaches and players are looking for deeper insights to take their game to the next level, referees/officials expect support to make the right decisions at crucial moments, and fans demand personalised experiences and greater accessibility. Through personalised content and recommendations, fans receive exactly the information and experiences that match their interests. Interactive experiences such as augmented reality (AR), an evolution of virtual reality (VR), offer fans the opportunity to experience games from new perspectives and even participate virtually.

Personalised merchandising, enhanced stadium experiences and virtual perimeter marketing are just some of the options offered by VR and AR. By broadcasting sporting events in AR, programmes can be reproduced virtually in the usual two-dimensional format or in a more complex three-dimensional version. Research is currently being conducted into the holographic reproduction or transmission of a sporting competition.

"What all of us have to do is to make sure we are using AI in a way that is for the benefit of humanity, not to the detriment of humanity." -Tim Cook, CEO of Apple

For e-commerce, which is important for club merchandising, AR applications allow customers to digitally view the clothing items on their smartphones. Chatbots and virtual assistants enable direct communication between fans and teams, while real-time statistics and analyses

give fans a deeper insight into the action. Overall, the integration of AI creates a richer and more immersive viewing experience for sports fans around the world.

Outlook

With our intercom system, we serve the field of live communication and this also requires a standardised language, which is often not possible in international business. Football is often described as a "universal language", but language barriers can lead to misunderstandings on the pitch. That's why we asked ourselves how we could use AI to enable our system to overcome this obstacle.

Our live translation AI has the potential to fundamentally change the transfer market by enabling clubs to sign players based on their data and skills without having to worry about the difficulties of language barriers, so that training can continue seamlessly and efficiently without interruption.

Coaches and players must have some level of digital literacy in order to use these technologies. Training and education are important since not everyone may be capable of using these technologies with the understanding and expertise needed. Sports organizations must invest in the development of digital skills alongside athletic ones to ensure these technologies can be used to their full potential.

"The interesting thing about coaching is that you have to trouble the comfortable, and comfort the troubled." – Ric Charlesworth, former Australian national women's field hockey coach

Thanks to our translation tool, coaches and foreign players can communicate seamlessly as if they were speaking the same language. This facilitates the integration of talent from all over the world and makes football even more global. Direct and immediate communication marks a new era of talent integration.

The significant influence of AI in sport is clearly demonstrated by such innovative tools. They not only facilitate the integration of talent from different countries, but also contribute to more efficient and smoother analysis. If you want to learn more about the application of AI tools in sports, visit our website or contact us.

If you enjoyed this post, feel free to check out more articles on our blog and follow us on Instagram, LinkedIn and Facebook.

Sources

Rahul Reddy Nadikattu (2020). Implementation of New Ways of Artificial Intelligence in Sports, Journal of Xidian University, Volume 14, Issue 5, 2020, 5983 – 5997. https://doi.org/10.37896/jxu14.5/649

Cossich VRA, Carlgren D, Holash RJ, Katz L. Technological Breakthroughs in Sport: Current Practice and Future Potential of Artificial Intelligence, Virtual Reality, Augmented Reality, and Modern Data Visualization in Performance Analysis. Applied Sciences.2023;13(23):12965. https://doi.org/10.3390/app132312965

Dindorf, C., Bartaguiz, E., Gassmann, F., Fröhlich, M. (2023). KI-Anwendungen im Sport. In: Künstliche Intelligenz in Sport und Sportwissenschaft. essentials. Springer Spektrum, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-67419-2_3

Kruse Brandao, Tanja/Wolfram, Gerd (2018): Digital Connection. Die bessere Customer Journey mit smarten Technologien- Strategie und Praxisbeispiele, Wiesbaden.