CURRENT APPROACHES TO AI-SUPPORTED DECISION-MAKING MECHANISMS IN THE CONTEXT OF SPORTS LAW

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Abstract

Artificial intelligence (AI) technologies have evolved alongside warfare and technological advancements throughout human history. AI has become increasingly prominent, particularly in computer science, and it gained momentum following World War II. The concept of AI was concretized with Alan Turing's development of the "Turing Test," the field was officially defined at the Dartmouth Conference in 1956. Since then, AI has revolutionized various sectors, from security and communication to digital economies and healthcare. Today, AI is rapidly integrated into numerous industries to reduce human labour and enhance efficiency. Its impact is increasingly evident in dynamic fields such as sports. Within the framework of sports law, AI's influence extends beyond performance analysis and training processes, raising legal responsibilities and ethical debates. AI in sports organizations significantly ensures fair competition and facilitates objective decision-making processes. However, this also introduces concerns regarding collecting and processing athletes' biometric data. Safeguarding the security and privacy of such data requires transparency in relationships between athletes and clubs and interactions with fans and the media. AI's impact on the "fair play" principle in sports law raises critical questions about how this technology should be regulated and within what boundaries it should operate. This study aims to explore the potential implications of AI in sports law, focusing on sports management, performance analysis, and legal frameworks while addressing key ethical and accountability issues. In conclusion, artificial intelligence (AI) can be a significant auxiliary tool in sports law; however, human involvement in the final decision-making process remains critical. To ensure justice in sports law, AI should assume a supportive role, functioning in conjunction with the insights and experiences of human referees.

Keywords: Sports Law, Artificial Intelligence, Sports, Fair Competition

Spor Hukuku Bağlamında Yapay Zeka Destekli Karar Mekanizmalarına Yönelik Güncel Yaklaşımlar

Özet

Yapay zekâ (YZ) teknolojileri, insanlık tarihi boyunca savaşlar ve teknolojik gelişmelerle birlikte evrim geçirmiştir. Özellikle II. Dünya Savaşı sonrası hız kazanan bilgisayar bilimi alanında YZ, önemli bir yer edinmiştir. Alan Turing'in geliştirdiği "Turing Testi" ile yapay zekâ kavramı somutlaşmış, 1956'da Dartmouth Koleji'nde düzenlenen konferansla bu alan resmen tanımlanmıştır. O günden bu yana YZ, güvenlikten iletişime, dijital ekonomiden sağlık sektörüne kadar pek çok alanda devrim yaratmıştır. Bugün yapay zekâ, insan emeğini azaltarak verimliliği artırma hedefiyle birçok sektörde hızla entegre edilmektedir. Spor gibi dinamik alanlarda da YZ'nin etkileri giderek daha fazla hissedilmektedir. Spor hukuku çerçevesinde YZ'nin yeri sadece performans analizi ve antrenman süreçleriyle sınırlı kalmamakta; aynı zamanda hukuki sorumluluklar ve etik tartışmaları da gündeme taşımaktadır. Spor organizasyonlarında YZ'nin kullanımı, adil rekabetin sağlanması ve karar süreçlerinin objektif bir zeminde yürütülmesine önemli katkılar sunacağı düşünülmektedir. Ancak bu durum, sporcuların biyometrik verilerinin toplanması ve işlenmesi gibi konuları da beraberinde getirmektedir. Bu verilerin güvenliği ve mahremiyetin korunması, sporcular ve kulüpler arasındaki ilişkilerin ötesinde taraftarlar ve medya ile olan etkileşimlerde de şeffaflık gerektirmektedir. YZ'nin spor hukukunda "adil oyun" (fair play) ilkesine etkisi, bu teknolojinin nasıl düzenleneceği ve hangi sınırlar çerçevesinde kullanılacağı gibi soruları da gündeme getirmektedir. Bu çalışma, yapay zekânın spor hukukundaki potansiyel etkilerini inceleyerek, spor yöneticiliği, performans analizleri ve hukuki düzenlemeler çerçevesinde etik ve sorumluluk konularına dair önemli çıkarımlar yapmayı amaçlamaktadır. Sonuç olarak, yapay zekâ spor hukukunda önemli bir yardımcı araç olarak kullanılabilir, ancak nihai karar mekanizmasında insan faktörünün devrede kalması kritik bir gerekliliktir. Spor hukukunda

adaletin sağlanması için YZ, destekleyici bir rol üstlenmeli ve insan hakemlerin yorumları ve deneyimleriyle bir arada çalışmalıdır.

Anahtar kelimeler: Spor Hukuku, yapay Zeka, Spor, Adil Rekabet

Introduction

Throughout history, wars and technological advancements have played a critical role in shaping humanity. World War II not only caused devastation in both military and civilian domains but also accelerated technological progress. During this period, cryptographic technologies and powerful weapons came to the forefront, laying the foundations of computer science through the groundbreaking work of Alan Turing.

In the 1950s, Turing's "Turing Test" marked a significant step in assessing the capacity of artificial intelligence (AI) to mimic human cognition (Lenat, 1987). The term "artificial intelligence" was officially coined during a 1956 Dartmouth College conference organized by John McCarthy and his team. McCarthy defined AI as "the science and engineering of making intelligent machines" (McCarthy et al., 1955).

The field of AI experienced a breakthrough in 1997 when IBM's Deep Blue computer defeated world chess champion Gary Kasparov. Until that point, AI had not achieved significant progress, but projects like Deep Blue expanded the technological boundaries of the discipline. In the 1990s, AI's ability to make autonomous decisions was limited; however, it has advanced rapidly in the subsequent years (Akbulut, 2023; Muggleton, 2014).

Today, AI continues to evolve to reduce human labour and enhance capacity. AI systems are increasingly less dependent on the human workforce, operating across a broad spectrum ranging from music and art to legal and academic pursuits and medical procedures. AI is even capable of managing traffic through autonomous vehicles. This advancement, as part of a broader wave of technological innovation, has facilitated global automation and significantly improved efficiency within the service sector (Samsun, 2021; Hurwitz & Kirsch, 2018; Hwang, 2014).

Examples of Artificial Intelligence in Law

In the 1970s, TAXMAN, an AI-based legal expert system developed by Thorne McCarty at Rutgers University, became the first in the United States. TAXMAN was designed to address corporate tax problems (Thorne McCarty, 1980). LEGOL, a legal knowledge representation language, was developed during this period to formalize legal information. Subsequently, theorem-proving mechanisms based on legal rules were created using PROLOG (Thorne McCarty, 1977; Jones, 1979). These mechanisms enabled the verification of legal outcomes while also being integrated into law schools to facilitate case-based education through argumentation and reasoning systems. AI thus began to play a pivotal role in legal decision-making and education.

Today, in the United States, advanced AI technologies such as natural language processing (NLP) and machine learning are employed to conduct investigations more swiftly and efficiently. These intelligent systems analyze vast amounts of data, extracting key insights, sifting through documents to identify critical information, and providing investigators with a more accurate and comprehensive perspective. As a result, judicial processes become more efficient, minimizing human error and fostering more equitable outcomes (Oğurlu, 2024).

In Turkey, lawyers extensively utilize AI applications, particularly case management and document tracking. These applications facilitate quick access to case files, monitor court dates, and track legal deadlines. Additionally, AI systems capable of real-time court monitoring are becoming increasingly prevalent in legal practice. These innovations are steadily transforming the landscape of the legal profession by enhancing accuracy, streamlining workflows, and improving overall judicial efficiency.

Artificial Intelligence in the Context of Sports Law and Its Legal Implications

Access to information and data has become faster and easier than ever in today's world. Pre-processed data, ready-made templates, and digital tools simplify users' tasks. These conveniences enable artificial intelligence (AI) to influence law.

At this point, one of the most advanced applications of AI is its ability to assist prosecutors during the preparation of indictments or judges in drafting court rulings. In particular, judges can rely on AI-generated drafts based on precedent cases, adding their interpretations to reach a final decision.

Taking this further, scenarios have emerged where AI or bots draft court decisions entirely. AI's ability to analyze past rulings and deliver swift, consistent decisions in similar cases can enhance efficiency in legal processes. However, this raises ethical and legal concerns, as the absence of human involvement in judicial processes risks transforming justice into a mechanical operation.

AI is increasingly becoming a valuable assistant in legal systems; however, the scope of its use and the degree to which human involvement should persist remain critical topics of debate.

In sports law, the development of AI technologies affects performance analysis, training processes, and legal frameworks. AI's capabilities in learning, gaining experience, making choices, and rendering decisions amplify concerns about its future power, sparking new debates in criminal law and beyond (Akbulut, 2023; Oğurlu, 2024).

AI applications in sports organizations and management processes contribute significantly to ensuring fair competition, enabling objective decision-making, and accurately analyzing sports data. Nevertheless, the use of these technologies introduces legal responsibilities and ethical dilemmas.

On the other hand, as technology advances, criminal activities also leverage the opportunities provided by AI. AI orchestrates automated, complex cyberattacks that are difficult to detect and defend against. Compared to traditional cyber threats, AI-powered attacks possess far greater destructive potential. By scanning for vulnerabilities, collecting sensitive data, and executing targeted assaults, AI automates processes that make it a highly effective tool for criminals. This poses a severe security risk for individuals and institutions, necessitating the continuous reinforcement of cyber defence systems.

AI technologies' influence in sports law and cyber security continues to expand (Atalay & Çelik, 2017). This ongoing process demands careful consideration of the opportunities afforded by technological advancements and the legal and ethical challenges they bring.

Artificial Intelligence and Legal Liabilities

The use of artificial intelligence (AI) technologies in the field of sports can, in certain instances, raise questions of legal liability. For example, in cases where automated referee systems (such as VAR) make erroneous decisions, the issue of accountability for such decisions becomes a point of contention. A decision rendered by AI may infringe upon athletes' rights or influence the outcomes of sporting events. In such scenarios, sports organizations that deploy AI systems must implement measures to mitigate the risk of erroneous decisions and ensure the continuous monitoring and evaluation of the technology.

Furthermore, the application of AI in athlete training and health monitoring may necessitate new regulations within sports law concerning health safety and working conditions. As AI increasingly integrates into critical areas such as performance enhancement and injury prevention, safeguarding the well-being of athletes and ensuring compliance with evolving legal standards will be imperative.

The intersection of AI and sports law highlights the need for a robust legal framework to address these technologies' emerging ethical and operational challenges. Sports organizations must proactively establish protocols to manage the potential risks associated with AI, ensuring that technological advancements align with fairness, transparency, and accountability principles.

Artificial Intelligence in Sports Law: Legal, Ethical, and Managerial Implications

Artificial intelligence (AI) is poised to play an increasingly significant role in sports law. For sports organizations, federations, and clubs, AI can be an effective tool in data analysis, decision support systems, and ensuring fair adjudication processes. However, the application of AI in this domain raises various legal, ethical, and managerial debates.

In the Context of Athlete Rights and Obligations, AI can analyze athletes' performance data, design personalized training programs, predict injury risks, and enhance doping control procedures. Nevertheless, processing athletes' biometric data and health records necessitates legal regulations to ensure data security. The accuracy and confidentiality of such data must be safeguarded to prevent injustices arising from erroneous or misleading information.

Regarding Federations and Sports Organizations, AI can be employed in match analysis and disciplinary procedures. AI can analyze precedents in appeals against referee decisions to ensure consistency in similar incidents. However, determining the scenarios in which AI can render decisions and the legal consequences of excluding human elements remains contentious. In situations requiring subjective judgment and flexibility, the rigid application of AI's predetermined rules may hinder the full realization of justice.

From the Competition and Event Law perspective, AI can be utilized to analyze on-field incidents. In areas such as fan security, monitoring crowd disturbances, and assessing referee decisions, AI can effectively identify misconduct and contribute to generating evidence. However, the surveillance of spectators' data necessitates the establishment of legal boundaries to protect individual rights and freedoms.

Within the Sports Facility and Infrastructure Management Framework, AI can enhance facility security, schedule equipment maintenance, and monitor crowd movements. In large-scale events, AI is invaluable for strengthening security measures and anticipating potential risks, thereby playing a crucial role in organizational safety and efficiency.

In Dispute Resolution Mechanisms, AI can draft preliminary decisions for arbitration panels and disciplinary boards. AI can expedite processes and ensure consistent rulings, particularly in **Court of Arbitration for Sport (CAS)** proceedings. Nonetheless, entrusting AI with full authority in decision-making may exclude the experiential judgment and empathetic perspective of human arbitrators, potentially compromising the integrity of the process.

Regarding Doping and Ethical Regulations, AI can analyze doping test results and scrutinize athletes' health data to detect anomalies or suspicious patterns. However, the misinterpretation of data during doping investigations may lead to unjust outcomes, jeopardizing athletes' careers. Hence, AI should play a supplementary role in such processes, with human oversight remaining indispensable to ensure fairness and accuracy.

In conclusion, while the proliferation of AI in sports law can accelerate legal proceedings and facilitate more equitable outcomes, its impact on athletes, clubs, and federations must be carefully evaluated within ethical and legal frameworks. AI can complement sports law, yet relying on it as the sole decision-maker remains contentious, potentially undermining the core values of justice and fairness. The human element must not be entirely excluded, ensuring that AI serves as a supportive rather than a definitive mechanism in the administration of sports law.

Artificial intelligence (AI) tools in sports law can manifest at various levels across sports organizations, federations, and referees. AI's most significant benefits include rapid access to necessary information and data, the analysis of previously processed decisions, and the utilization of pre-established legal frameworks. This presents considerable advantages in disciplinary committees, event management, and doping control.

One of AI's most advanced applications in sports law is its use during disciplinary investigations or the review of referee decisions. For instance, AI can analyze precedent rulings and draft a preliminary decision during the evaluation of infractions that occur during a competition. This draft is subsequently reviewed and finalized by federation officials or the disciplinary board.

At a more advanced stage, scenarios in which AI autonomously makes referee decisions in sports law may emerge. AI could detect violations during competitions and actively participate in decision-making processes to ensure fair competition. However, excluding human involvement in this process raises ethical and legal concerns, particularly regarding athletes' rights and the assurance of justice.

In conclusion, AI can be a crucial supportive tool in sports law; however, retaining human involvement in final decision-making mechanisms is essential. To uphold justice in sports law, AI should function in a complementary capacity, working alongside the insights and experience of human referees.

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