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## THE USE OF ARTIFICIAL INTELLIGENCE IN ESPORTS: PROSPECTS AND PROBLEMS

*The article analyzes the use of artificial intelligence in esports. It is noted that the fact that AI technology has been developing rapidly in recent years makes its impact on the gaming industry particularly significant. On the one hand, games created with advanced artificial intelligence allow players to improve the gaming experience by creating a more interesting game (creating a more realistic virtual environment). On the other hand, AI-enabled games provide better game mechanics and help players train and improve their skills. These circumstances necessitate the study of the legal regulation of artificial intelligence in esports.*

*The study pays special attention to the role of AI-based bots that can simulate real-life scenarios and provide players with the opportunity to train and improve their skills, and to the analysis of opportunities to provide players with real-time feedback on their performance. At the same time, the author analyzes the complexities of legal regulation of the use of artificial intelligence in various spheres of life, including esports. The author analyzes the provisions of the European Union acts on this issue.*

*It is concluded that, in general, artificial intelligence plays an important role in the esports industry. Thus, optimization of video games through the use of artificial intelligence, training, and analytics help players become more competitive and create the tools necessary for teams to succeed. However, there are problematic issues regarding legal regulation and abuse of athletes. It is concluded that as the esports industry continues to evolve, artificial intelligence remains an important component of the gaming experience and there is a need to adapt legislation to meet new challenges.*

**Key words:** artificial intelligence, esports, legislation, computer systems, standards, gaming industry.

## Аттард Д., Жорнокуй Ю.М. ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ У КІБЕРСПОРТІ: ПЕРСПЕКТИВИ ТА ПРОБЛЕМИ

*У статті проаналізовано питання щодо використання штучного інтелекту у кіберспорті. Зауважено, що факт того, що технологія AI стрімко розвивається в останні роки, її вплив на ігрову індустрію є особливо значним. З одного боку, ігри створені із розширеним штучним інтелектом дозволяють гравцям покращити ігровий досвід через створення більш цікавої гри (створення більш реалістичного віртуального середовища). З іншого, ігри з підтримкою штучного інтелекту забезпечують кращу ігрову механіку та дають змогу допомогти гравцям тренуватися та вдосконалювати свої навички. Дані обставини зумовлюють необхідність дослідження правового регулювання штучного інтелекту у кіберспорті.*

*Окрему увагу у дослідженні приділено ролі ботів, що на основі штучного інтелекту можуть симулювати реальні сценарії та надавати гравцям можливість тренуватися та вдосконалювати свої навички та аналізу можливостей для надання гравцям зворотного зв'язку у режимі реального часу щодо їх продуктивності. Водночас проаналізовано складнощі правового регулювання використання штучного інтелекту у різних сферах життя, в тому числі у кіберспорті. Проаналізовано положення актів Європейського Союзу з даного питання.*

*Зроблено висновок, що загалом, штучний інтелект відіграє важливу роль в індустрії кіберспорту. Так, оптимізування відеоігор за допомогою використання штучного інтелекту, навчання та аналітика допомагають гравцям стати більш конкурентоспроможними та створюють інструменти, необхідні для досягнення успіху команд. Однак, існують проблемні питання щодо правової регламентації та зловживань спортсменами. Підсумовано, що оскільки індустрія кіберспорту продовжує розвиватися, штучний інтелект залишається важливою складовою ігрового досвіду та існує необхідність адаптувати законодавство у відповідності із новими викликами.*

**Ключові слова:** штучний інтелект, кіберспорт, законодавство, комп'ютерні системи, стандарти, ігрова індустрія.

**Purpose and objectives.** The purpose of this article is to study the impact of artificial intelligence on esports and analyze the prospects for using the achievements of computer systems and problems in this aspect. The objectives of the study are to find out the possibilities of esports in optimizing the gameplay, helping players in training, and conducting analytics for teams and players.

**Research methods.** The research used the methods of analysis, generalization, and comparison. The analysis method helped to analyze scientific, technical, and legal literature in the field of artificial intelligence in games, as well as to understand the problematic issues in this aspect. The use of the generalization method made it possible to accumulate the available knowledge on the use of computer technologies in esports and to formulate conclusions about the effectiveness of artificial intelligence as an effective tool for the modernization of esports. The comparison method was used to compare the possibilities of using artificial intelligence in different areas and to identify the features of each area.

By its very nature, artificial intelligence (AI) encompasses the creation of computer systems that allow performing tasks that require human intelligence, the ability to make decisions, act and adapt based on limited information [1].

Machine learning (ML) is a so-called subfield of AI aimed at developing learning methods for computers that allow them to analyze the data provided and gradually learn to solve complex tasks based on it [2].

Currently, AI is used in esports in various aspects.

For instance, AI is used in gaming to better understand the motives and decisions of players. In particular, artificial intelligence tools are capable of analyzing large amounts of data and identifying dependencies. Thus, it becomes possible to develop recommendation systems that take into account the individual preferences and playing styles of users [3].

As the scope of artificial intelligence has expanded, interest in legislative regulation of this phenomenon has increased. Thus, the regulation of the use of artificial intelligence technologies interacts with the application of other laws.

Let us consider some of the initiatives in the field of artificial intelligence regulation. One of these documents is the Artificial Intelligence Act, a proposal for a regulation from the European Commission to regulate the use of artificial intelligence.

Explaining the need to adopt a regulation to regulate AI, the European Commission notes that elements and methods of using artificial technologies may cause new risks or have negative consequences for individuals or society as a whole. Regarding the

context of the regulation itself, the European Commission has identified the following goals that it is trying to achieve by adopting this law:

1) Ensure that artificial intelligence systems deployed and used on the EU market are secure and respect existing legislation protecting fundamental rights and EU values;

2) provide legal certainty to facilitate investment and innovation in the field of artificial intelligence;

3) improve the governance and effective enforcement of existing legislation on fundamental rights and security requirements applicable to artificial intelligence systems;

4) to promote the development of a single market for legal, safe, and reliable programs using artificial intelligence and to prevent market fragmentation [4].

The proposed regulation also contains a methodology for identifying "high-risk" artificial intelligence systems that must comply with certain mandatory requirements and procedures. It also provides for the establishment of the European Artificial Intelligence Board, which will be responsible for the implementation of this law. It is also proposed to create regulators at the national level.

Let's take a closer look at the possibilities for esports teams and esports games. As already mentioned, the use of AI-based game analysis and move prediction allows players to improve their skills and master new strategic approaches to the game.

Sponsorship and search for sponsors in the field of gaming sports play an equally important role. In esports, teams and players are always looking for sponsorship deals as the main source of income. Player ranking plays an important role in this aspect, as AI can work to expand the team's reach and make sure that potential sponsors pay attention to it [5]. The use of AI platforms is progressive - websites that use artificial intelligence to analyze players' game videos and help them find ways to improve their strategy [6]. The distribution of content in the form of articles, images, and videos can also be optimized using AI technology. Currently, most of this work is done by humans, but now you can rely on AI technology to accomplish this task with ever-improving results. AI can perfectly match the changing needs of customers and provide them with relevant content, constantly improving itself based on live feedback [7].

Like any other sport, esports has a constant problem with match-fixing and dishonest players. These issues can tarnish the reputation of the sport and create an environment that lacks trust and credibility [8]. Anti-cheating software is notoriously ineffective, and new cheating tools appear on the Internet every day, available to anyone who wants to download them [9]. Systems staffed

exclusively by humans cannot cope with the huge volume of messages coming from all over the world [10]. On the other hand, artificial intelligence uses all the data from anti-fraud programs and determines whether foul play has occurred through enhanced learning [11].

Therefore, artificial intelligence has a transformative role in esports, and esports companies that use AI have gained a competitive advantage and are already changing the world of esports today.

#### **Conclusions:**

The use of artificial intelligence has long been a

reality in many areas of human life. In esports, AI is used to provide teams and players with analytical data that can help them understand their performance and make better decisions. AI algorithms can analyze data from many sources, providing teams with a complete picture of their performance.

At the same time, the issue of legal regulation of esports and the use of artificial intelligence in esports is currently unclear, and therefore abuse and manipulation are possible, both during competitions and in determining results.

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