

УДК 004.8

Фатаєв В. – ст. групи СБс-21

Тернопільський національний технічний університет ім. Івана Пулюя

ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ У СПОРТІ

Науковий керівник: канд. філол. наук, доцент Дудар О.В.

Fataiev V.

Ternopil Ivan Puluji National Technical University

THE USE OF ARTIFICIAL INTELLIGENCE IN SPORTS

Supervisor: Ph. D., Assoc. Prof. Olena Dudar

Ключові слова: штучний інтелект (ШІ), спорт, аналіз даних.

Key words: artificial intelligence (AI), sports, data analysis.

In the whirlpool of rapid technological advancement, artificial intelligence (AI) has transcended its status as a futuristic prospect to become a crucial element of the contemporary sporting landscape. Its impact on various areas of life, including sports, is felt, making dynamic changes in the way athletes train, conducting competitions and analyzing results. The use of artificial intelligence in sports not only modernizes training and data processing, but also improves refereeing capabilities and increases safety for participants. In this context, the research and application of artificial intelligence in the sports industry is no longer just an innovative idea, but a strategic direction of development that transforms the perception of sports and opens up new opportunities for reaching new heights.

Main aspects:

1. Improving training: Artificial intelligence facilitates the creation of individual training programs for each athlete, tracks their progress, and provides instant feedback. It also allows the use of virtual environments for safe and controlled training.

2. Data analysis: By efficiently processing large amounts of data, AI can help athletes and coaches better understand their strengths and weaknesses, predict and prevent injuries, and identify talent.

3. Automation of refereeing: Artificial intelligence can automate refereeing, ensuring more accurate and fair decisions, thereby reducing disputes and making the competition more objective.

4. Fan Engagement: AI also holds immense potential for enhancing fan engagement and crafting immersive experiences. Imagine AI-powered apps that curate personalized content for fans, providing real-time insights, statistics, and behind-the-scenes access.

Examples of using AI in sports:

Platforms like TeamGenius and STATSports are demonstrating their potential to improve training and data analysis, helping coaches and athletes enhance performance and prevent injuries. Systems like Hawk-Eye are changing refereeing approaches, ensuring greater fairness and accuracy in decisions.

The implementation of artificial intelligence systems in VAR (Video Assistant Referee) opens wide opportunities for automation and improvement of refereeing in sports competitions. One of the key advantages of this innovation is the possibility of automatic detection of offsides using image processing and data analysis, which helps accurately determine the location of players at the moment of passing the ball.

Furthermore, AI-powered VAR systems can meticulously track the trajectory of the ball throughout gameplay, ascertaining whether it has crossed the goal line or gone out of bounds. This option is valuable in resolving contentious situations regarding goals scored or refereeing decisions, ultimately delivering a more objective outcome for competing teams.

In conclusion, the use of artificial intelligence in sports opens up new opportunities for improving training, data analysis, and refereeing. This technology facilitates not only enhancing the performance of athletes, but also making sports competitions objective, more efficient, and safe. With the help of artificial intelligence, sports can find new ways to reach great heights, and athletes can find new ways to realize their potential.

References:

- 1) Team Genius official website: <https://teamgenius.com/features/>
- 2) Article about STATSports in The Guardian: <https://www.theguardian.com/football/2020/jun/07/close-contact-time-in-training-has-almost-halved-since-return>
- 3) Hawk-Eye website: <https://www.hawkeyeinnovations.com/about>
- 4) Video Assistant Referee Technology: <https://www.fifa.com/technical/football-technology/standards/video-assistant-referee>