

How AI and Technology Are Changing Umpiring and Refereeing in Sports



Author: Liam Setterlund

Love it or hate it, artificial intelligence is taking over. Not only is it being used for commercialism, education, medicine, and other things of the sort, but AI is now being used more and more to help with refereeing our sports. While its implementation is mainly for the benefit of the sport, some people might not take it that way, at least if they don't yet understand the technology.

The reason why we see increased use of AI-based tech in sports officiating is mostly for two big reasons; accuracy and efficiency. If the accuracy of calls can improve and the pace of the sport isn't affected much, then neither is its integrity, making the use of AI in umpiring and refereeing a new revolution that will soon take over all sports for good reason.

Why use AI in officiating sports?

Everyone may be wondering the same thing. Why use AI in sports? Doesn't that mean humans will be making fewer choices and artificial intelligence will be doing all the work? Not necessarily. The entire goal of implementing AI in refereeing is to lessen the strain on the officiators while keeping the calls as accurate and fair as possible. It's not intentionally to change the nature of the sport, but to make things as fair and consistent as they can.

Through consistent practice and continuing research, the use of AI and sports has been more beneficial to each league than harmful. Throughout the next few decades, we hope to see these technologies be improved even more, and maybe not just in umpiring and refereeing, but for things like performance enhancement, better broadcasting, etc. Although you may not see it now, the use of AI tech in sports officiating is already well underway. Just take a look at a few of the examples from multiple modern sports around the world.

Tennis ball 'Hawk-Eye' tracking technology

Probably the first of its kind, the Hawk-Eye ball tracking technology was implemented in cricket back in 2001. Eventually, it became a common system to use in sports that track a fast-moving ball. By 2006, the International Tennis Federation approved the use of Hawk-Eye tech. The software stems from the use of many high-performance cameras mounted under the stadium roof that capture 3D video data as well as ball trajectory statistics. Through the combined use of these methods, the Hawk-Eye can essentially trace the ball's entire path down to within 3.5 millimeters of accuracy, enough to allow referees to trust the decision of the technology without wasting any time at all.

FIFA Goal-line technology

After several controversial goals called or not called in the 2014 FIFA World Cup, the administration decided it was time for technology to help with the naked eye. While commonly referred to as GLT, the technology is based around using 14+ high-speed cameras in the net to capture the 3D animation in real-time, allowing referees to look over any controversial replay and determine a 'goal' or 'no goal' in a matter of seconds. Many popular soccer leagues around the world have adopted their form of this GLT and while the software and branding may be

different, it's all the same type of AI technology used to benefit the sport in ensuring the correct goal-based call is made.

Automated ball-strike technology

Used similarly to the likes of goal-line technology, the sport of baseball would soon configure the automated ball-strike system in 2019. While it is not yet adopted by the MLB, it has been used in independent leagues since its creation as a form of testing and experimentation. We may very well see baseball and even the MLB in the next few decades adopt a more automated umpiring system, in which the accuracy of calls will hopefully improve overall.